Appendix I:
Public Service and Utilities Letters/
Water Supply Assessment

I.1 - Public Service and Utilities Letters

CITY OF MANTECA

FIRE DEPARTMENT

March 1, 2010

Mr. Grant Gruber, Project Manager
Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon – Suite 460
San Ramon, CA 94583

Dear Mr. Gruber,

Enclosed please find the completed Fire Department Questionnaire you had requested in regard to the proposed Northwest Airport Way Master Plan and related non-master plan annexations.

Please do not hesitate to contact me if I can be of further assistance.

Sincerely,

Kirk Waters
Fire Chief

KW:dw

Enc: Manteca Fire Department Questionnaire

1154 S. UNION RD. • MANTECA, CA 95337 • (209) 239-8435 • FAX (209) 825-2339
www.ci.manteca.ca.us

Manteca Fire Department Questionnaire

FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES

The Manteca Fire Department provides fire protection and emergency medical services to the City of Manteca. The Fire Department is headquartered at 1154 S. Union Road.

Stations

The Fire Department staffs three stations, summarized in Table 1.

Table 1: Fire Station Summary

No.	Location	Apparatus	Distance to Lathrop Road/Airport Way
1	290 S. Powers Avenue	Engine 241 and Rescue 24	4.9 miles
2	1154 S. Union Road (Headquarters)	Engine 242 and Truck 24	3.8 miles
3	399 W. Louise Avenue	Engine 243	2.8 miles

Organization

The Fire Department is organized into three divisions: Administration, Operations, and the Fire Prevention Bureau.

Administration Division

The Administration Division provides for and manages several important functions of the Department including Personnel, Communications/Dispatch, Policies and Procedures, Recruitment and Emergency Planning.

Operations Division

The Operations Division is responsible for responding to emergencies including fires, hazardous materials releases and treating the sick and injured. Through an agreement with the City of Stockton Fire Dispatch Center, the Manteca Fire Department receives 911 requests for service from Stockton Fire.

Comprehensive mutual and automatic aid agreements with the Lathrop-Manteca Fire District and other surrounding fire agencies, as well as the State of California, allows the Manteca Fire Department to receive and provide emergency response resources to surrounding jurisdictions and throughout the state.

All Operations Division Personnel, including the Shift Commanders work a 56-hour workweek and 48 hour shifts. The Shift Commander is assigned to supervise each of the three shifts and responds to emergencies while on-duty 24 hours a day. Three engine companies, a truck company, and one rescue unit respond from three stations strategically located throughout the City of Manteca.

Prevention Bureau

The Fire Prevention Bureau administers and enforces local, state and national fire and life safety codes. The bureau's responsibilities include a wide range of activities and programs including fire inspections, re-inspections, land development project reviews, fire code developments, fire sprinkler and alarm system plan

reviews, new business license inspections, fire code permit inspections, vegetation management and weed abatement programs, public education, hazardous materials inspections providing awareness and identification for businesses.

Staffing

The Fire Department is combined of career and reserve fire personnel. The Fire Department is staffed by 42 career personnel and 20 reserve personnel. Each engine company and truck company is staffed with a minimum of three Firefighters, which helps provide for an effective workforce of 15 Firefighters responding for all structure fires.

Apparatus

The Fire Department operates the follow fire and emergency medical response apparatus:

- 3 Engines
- 1 Ladder Truck
- 3 Reserve Engines
- 1 Medium Rescue Unit
- 1 USAR Rescue Trailer

Calls for Service

The Fire Department responded to 4,823 calls for service in 2009. Table 2 summarizes the calls for service.

Table 2: Calls for Service Summary

Category	Calls	Percent of Total
Emergency medical services	3,065	64
Other emergencies	857	18
Service	589	12
Fires	274	6
Total	**4,785**	**100**

Notes:
Other emergencies include vehicle accidents, hazmat releases and electrical emergencies.
Service calls include smoke/odor investigations, public/police assists and false alarms.

Response Times

Table 3 summarizes response times by station for 2009. The Fire Department's response time objective is being on-scene within 5 minutes of dispatch.

Table 3: Response Times by Fire Station (2009)

No.	Location	Apparatus	Average Response Time (Minutes)
1	290 S. Powers Avenue	Engine 241	3.5
2	1154 S. Union Road (Headquarters)	Engine 242	4.2
3	399 W. Louise Avenue	Engine 243	4.5

ISO Rating

The Insurance Services Office (ISO) Public Protection Classification Program currently rates the Manteca Fire Department as a 3 on a scale of 1 to 10, with 1 being the highest possible protection rating and 10 being the lowest. The ISO rating measures individual fire protection agencies against a Fire Suppression Rating Schedule, which includes such criteria as facilities and support for handling and dispatching fire alarms, first-alarm response and initial attack, and adequacy of local water supply for fire-suppression purposes. The ISO ratings are used to establish fire insurance premiums.

Impact and Service to Project Areas

The Fire Department has reviewed the proposed project involving the annexation of additional areas into the City of Manteca. They include the Northwest Airport Way Master Plan allowing the development of as much as 4.1 million square feet of industrial and community commercial uses, as well as non-master plan annexations that would annex two areas (77 acres and 144 acres) that contain existing low-density residential uses.

The City of Manteca has existing staffed Fire Stations and a Fire Station planned for the 1400 block of Lathrop Road, which will serve the proposed projects and expected increases in service demand well. The City has secured the land for the station on Lathrop Road and has an architectural design in progress that is nearing completion. This Fire Station will need to be built and staffed to allow for adequate fire service delivery to the project area. The City of Manteca's Fire Station #3 is the closest existing fire station and can service the project areas with a response time of 5-7 minutes depending on the location of the emergency. The Manteca Fire Department has a response time objective of arriving on-scene within 5 minutes of dispatch for all emergencies. The department staffing level from existing fire stations and infrastructure within the City provides for the highest level of service in the vicinity for the project area.

Please feel free to contact me with any questions.

Sincerely,

Kirk Waters, Fire Chief

CITY OF MANTECA

POLICE DEPARTMENT

March 5, 2010

Grant Gruber, Project Director
Michael Brandman Associates
Bishop Ranch 3
2633 Camino Ramon, Suite 460
San Ramon, CA 94583

Subject: Northwest Airport Way Master Plan Environmental Impact Report: Police Department Questionnaire

Dear Mr. Gruber:

I have prepared the responses to the Manteca Police Department's questionnaire regarding the Northwest Airport Way Master Plan E.I.R. If you have any questions regarding the responses, please feel free to contact me; my direct line at the police department is 209-456-8137.

Manteca Police Department Questionnaire

1. **Police Department Summary:**

The Manteca Police Department provides police protection to the City of Manteca. The Police Department is headquartered at 1001 W. Center Street.

Organization and Staffing
The Police Department is organized into two divisions: Operations and Services.

OPERATIONS DIVISION
The Operations Division is the larger of the two divisions and includes all of the Police Department's uniformed police officers. This division is responsible for providing direct police response to requests for assistance. The patrol, traffic, and community service officers respond to and investigate criminal acts and public safety concerns. Operations includes teams that have been specially trained and equipped to meet some of the community and the Police Department's special needs, including canine, mounted patrol, bomb disposal, Special Weapons and Tactics (SWAT), and crisis negotiations. The number of employees assigned to the Operations Division is 60.

SERVICES DIVISION
The Services Division is made up of several units including Investigations, Detectives, School Resource Officer, Gang Unit, Records, Evidence and Property, Dispatch, Code Enforcement and Animals Services. The Services Division consists of approximately 95 full time, part time and volunteer employees with six Supervisors and the Division Commander who oversees the management and operations of the units.

Calls For Service
The total number of calls for service in 2009 were 35,334.

Response Times
97.8% of the time Priority 1 calls for service are at or below the 3 minute response time.
98.7% of the time Priority 2 calls for service are at or below the 30 minute response time.

2 The current staffing level of the Manteca police department is adequate to handle the calls for service for this area. With the limited residential impact, our agency will be able to distribute workload amongst within the current structure. Traditionally commercial property does not create a huge volume of calls for service.

3. The Police Department remains a part of the planning process throughout the project. We will apply current police standards to the development to include CPTED and other useful prevention techniques. Our agency continually evaluates and adjusts the structure of our staffing requirements and district needs based upon calls for service and community need. Upon reviewing this project with exception of an increased traffic concern our agency feels comfortable with the annexation and its impact on police services. The City of Manteca's traffic engineer will assist in the management of the anticipated traffic increased issues and work with our traffic unit and prevention services to minimize the impact on the department.

John A. Orcutt, Captain
Manteca Police Department
1001 W. Center St.
Manteca, CA 95337

I.2 - Water Supply Assessment

PUBLIC WORKS
DEPARTMENT
ENGINEERING
DIVISION

Memo

To: Rochelle Henson

From: Keith Conarroe

CC: Mark Houghton, Frederic Clark, Phil Govea

Date: July 19, 2010

Re: Northwest Airport Way Master Plan Water Supply Assessment

Introduction

This memorandum presents the water supply assessment for the Northwest Airport Way Master Plan. A water supply assessment is required to comply with water supply planning requirements of the California Water Code and Government Code. Water supply assessments are required for industrial developments that exceed 40 acres or have more than 650,000 square feet of floor space. The Northwest Airport Way Master Plan encompasses 310 acre development with 4,453,141 square feet of industrial floor space and 208,000 square feet of commercial floor space (See Attachment 1).

The water supply assessment evaluates the ability of the City of Manteca to meet the water supply demand associated with the proposed land uses of the Northwest Airport Way Master Plan. The water supply assessment was prepared in accordance with requirements of Section 10910, et seq, of the Water Code, which requires a water supply assessment as part of the environmental review process for new development projects

Much of the information required in the Water supply Assessment is included in the City of Manteca 2005 Urban Water Management Plan. Additional information is contained in the City of Manteca Water Master Plan. Both documents have been used in the completion of this water supply assessment.

Summary Findings

The findings of the water supply evaluation are that the City has a sufficient supply of groundwater and surface water to serve the proposed development. The development has a projected water demand of 249,910 gallons per day or 174 gallons per minute. Commercial and industrial developments are not assessed a peaking factor in the water supply assessment as periods of peak demand for commercial and industrial facilities are generally not significant or coincide with the City's diurnal peak demand. However, extension of existing water mains will is required to convey water to the development and provide connections for other developments. The water distribution system improvements required to supply water to the development will be funded by the developer. The City of Manteca Fire Department determined a fire flow of 3500 gallons per minute for four hours will be required for the planned development. Infrastructure to support the fire flow demand will be evaluated and presented in a separate memorandum.

Water Demand

The water demand for the Northwest Airport Development consists of potable and landscape irrigation demands. The estimated demand for the development is 249,910 gallons per day or 174 gallons per minute. The water will be supplied by the City of Manteca water system.

The water demand for the development is based on the identified land use categories and the City of Manteca water duty. The water demand is summarized in Table 1. The City allocates water for commercial, institutional and industrial uses through its gross residential water demand. The gross residential demand is based on the City of Manteca's historical per capita water demand of 214 gallons per day, which includes commercial and industrial water demand.

Table 1

Northwest Airport Development Water Demand

Land Use	Land Use Area, Acres	Water Duty, GPD/Acre	Water Demand, GPD
Commercial Community	18.1	2,200	39,820
Light Industrial	248.3	300	74,490
Open Space	33.9	4,000	135,600
Total	300.3	--	249,910

Water Supply Assessment Requirements

The water supply assessment evaluates the water demand of the proposed development and the sufficiency of the water supply for the next 20 years for the demands of the project, existing users and other future users in normal, single and

multiple dry year conditions. The evaluation must document the quantity of water available from existing and future water sources during the 20 year planning period. Where groundwater is used, a description of the aquifer must be provided along with the information on regarding overdraft of the basin aquifer. The governing body must also approve the water supply assessment.

The water supply assessment requirements are discussed further below. Most of the information required in the water supply assessment is included in the City of Manteca 2005 Urban Water Management Plan and Water Master Plan. Copies of the City of Manteca 2005 Urban Water Management Plan and the Water Master Plan are available for review at the City of Manteca Public Works office.

Water Supply Sufficiency

There is sufficient water available from the existing and planned water sources for the Northwest Airport Way Development. The existing and planned sources of water include groundwater supplies from the City, and surface water from the South San Joaquin Irrigation District. These water sources in combination with water conservation and development of reclaimed water use will result in a sufficient water supply for the Northwest Airport Way Development along with current and future developments in the City. The water supply planning is discussed in the City's 2005 Urban Water Management Plan and is summarized below.

Water Supply Planning

The City of Manteca 2005 Water Master Plan and the 2005 Urban Water Management Plan document the City's water supply planning. The City limits the number of new residential sewer connections to 3.9 percent per year. The limitation in new sewer connections will also limit the growth in water demand. A lower growth rate for water demand of 3.4 percent is used in both the 2005 Water Master Plan and the 2005 Urban Water Management Plan to project future water demand. Both the 2005 Water Master Plan and 2005 Urban Water Management Plan include local groundwater and the South County Surface Water Supply Project as sources of water for the City of Manteca.

The 2005 Urban Water Management Plan was adopted in December of 2005. The 2005 Urban Water Management Plan includes water supply and demand comparisons through 2030 assuming the 3.4% growth in water demand. During the planning period water is supplied by groundwater from City wells and surface water from the South County Water Supply Project. The 2005 Urban Water Management Plan also contains the single and multiple dry year water demand-supply comparisons and the water supply shortage contingency planning. The water supply and demand comparisons from the 2005 Urban Water Management Plan are included in Attachment 2. The water supply – demand comparison in Table 9 of the Urban Water Management plan shows that the water demand will exceed projected supply by 1,145 acre feet in the year 2030 or 3.3 percent without conservation. The

increase in future water supply is provided by the planned increase in surface water deliveries and drilling of new wells to meet water demands. Conservation and the implementation of reclaimed water use during the planning period will reduce potable water demand such that the water supply will exceed demand by 2030. A 20 percent State mandated water reduction by conservation is would reduce demand by 6,328 acre feet in 2030. Reclaimed water use above the currently planned 2,300 acre-feet in 2030 can provide an additional reduction in potable water demand in Manteca.

Attachment 3 contains revised Tables 4, 7 and 9 from the 2005 Urban Water Master Plan through the year 2035 to satisfy the 20 year planning period required in water supply assessments. The 20 percent potable demand reduction and increased reclaimed water use are factored into the water supply and demand projection in the revised tables. The water supply – demand comparison shown the Revised Table 9 indicates there will be sufficient water through 2035 with the currently planned water supply.

The water supply planning in the 2005 Urban Water Management Plan and Water Master Plan consider increased water demand for future developments such as the Northwest Airport Way Development.

Groundwater Supply. The City of Manteca draws groundwater from the Eastern San Joaquin County Groundwater Basin (ESJCGB), which is a sub basin of the San Joaquin Valley Groundwater Basin. The California Department of Water Resources identified the ESJCGB as a basin in a state of overdraft in DWR Bulletin 160-98. The basin is described in the 2005 Urban Water Management Plan and is included in Attachment 2.

The agricultural, municipal and industrial groundwater extraction in Eastern San Joaquin Groundwater Basin is estimated at 867,600 acre-feet per year in the Eastern San Joaquin Groundwater Basin Groundwater Management Plan. The estimate is based on land use and reported groundwater pumping. Land use information is used to estimate groundwater extraction where groundwater pumping is not reported. The estimated basin overdraft is 150,700 acre-feet per year.

Modeling conducted for the Eastern San Joaquin Groundwater Basins Groundwater Management Plan showed a continued decline in groundwater levels and loss of aquifer storage at the estimated basin overdraft. The Integrated Regional Management Plan for the groundwater basin was developed and adopted in 2007 presented a water management strategy and course of action to implement an integrated conjunctive use program to manage and restore the groundwater resource in the basin.

The City of Manteca will limit groundwater extraction to the safe aquifer yield of 1 acre ft per acre per year by the use of surface water from the South County Water

Supply Project. The 2005 Urban Water Management Plan projected a maximum groundwater extraction of 13,790 acre-feet per year to be reached by 2027 based on projected city growth and the City's Primary Urban Service Area (PUSA) of 13,790 acres as defined in the City's General Plan. City growth beyond the PUSA will allow greater groundwater extraction. The 2005 Water Master Plan includes the construction of 11 new wells in its capital improvement plan in order to increase groundwater extraction capability for future water demands.

Agricultural and some industrial water users located in the Manteca planning area also use locally produced groundwater. Agricultural water use is expected to decline as Manteca's residential development is displacing the local agriculture. The net impact on agricultural water supply is neutral, as agricultural and residential water use on an annual basis is similar. Industrial users should benefit from Manteca's conjunctive water use as the City's groundwater extraction is reduced to the safe aquifer yield.

Surface Water. The City of Manteca, along with the Cities of Escalon, Lathrop and Tracy contracted with the South San Joaquin Irrigation District in 1995 for treated surface water. The contract entitles the City to 11,500 acre-ft of surface water per year in Phase1 and 18,500 acre-ft of surface water in Phase 2. The water treatment plant and water transmission line were completed in 2005 and surface water deliveries to the Cities began in July of 2005.

The surface water deliveries are scheduled to increase until full capacity of 18,500 acre feet per year is reached. The project is planned in two phases. Phase 1 planned to provide up to 11,500 acre feet through 2010. Phase 2 would be constructed after 2010 and would provide up to 18,500 acre feet by 2027. Timing of Phase 2 will depend on the water demand in each of the participating cities. At present, Phase 2 has not been designed or funded and is not required for the Northwest Airport Way Development.

Reclaimed Water. The Urban Water Management Plan and the 2005 Water Master Plan include reclaimed water in future water planning. Reclaimed water requires construction of tertiary filters and disinfection facilities to meet Title 22 Reclamation Criteria. A reclaimed water distribution system is also required. Recent NPDES disposal and treatment requirements required the construction of tertiary filters and disinfection facilities. The treatment requirements make the use of reclaimed water for landscape irrigation feasible in some areas of the City but use is limited due to the lack of a reclaimed water distribution system. At present, reclaimed water is available for construction sites and is planned for irrigation of the Big League Dream sports complex. Additional landscape irrigation with reclaimed water is anticipated in the future and is projected reach 2,300 acre feet per year by 2030. The use of reclaimed water for landscape irrigation will reduce the City's water demand and help extend the available water supply.

The use of reclaimed water in the Northwest Airport Way Development is not currently planned but may be available in the future. Development planning should include the installation of separate non-potable water line (purple pipe) for landscape and open space irrigation using non-potable water. The landscape and open space irrigation requirements should be provided by non-potable irrigation well or wells. The non-potable irrigation wells will be funded by the developer. The landscape and open space irrigation systems can be converted to reclaimed water if it becomes available in the area.

Groundwater Management. The San Joaquin County Flood Control and Water Conservation District adopted a groundwater management plan for San Joaquin County in 2004, which includes much of the ESJCGB. The City of Manteca participated in the development of the groundwater management plan. A major objective of the groundwater management plan is to stabilize the groundwater level in the central and eastern portions of the basin.

The City of Manteca plans to manage its groundwater use to meet the safe aquifer yield for the area, which has been estimated at 1 acre-ft/acre/year. Historically, Manteca extracted groundwater at a rate of 2.4 acre-ft/acre/year. Both the Water Master Plan and the Urban Water Management Plan recognize the overdraft in the basin. The City began reducing its groundwater extraction to the safe aquifer yield when the surface water became available in 2005.

Water Supply Reliability. Water supply reliability is addressed in the Urban Water Management Plan. In past droughts, the groundwater supply has been very reliable. Groundwater levels have dropped during severe droughts but recovered in subsequent years. However, there has been a long-term drop in groundwater levels (approximately 4 feet since 1964) in the Manteca area. The drop in groundwater is due to both the local groundwater pumping and the severe overdraft in the central and eastern portions of the groundwater basin. The combined effort of Manteca to reduce groundwater overdraft and the San Joaquin County Groundwater Management Plan should help maintain the historical reliability of Manteca's groundwater. The City's water supply history from 1960 through 2010 is included in Table 2.

The South San Joaquin Irrigation District supplies surface water to the South County Water Project from Stanislaus River and has pre-1914 water rights to this water source. With the construction of New Melones Reservoir, the SSJID entitlement was negotiated with the DWR to 300,000 acre-ft per year. The entitlement is subject to reductions when the New Melones inflow is less than 600,000 acre-feet. An examination of the inflows between 1922 and 2000 indicated that SSJID would have received its full allocation of 300,000 acre-ft in all but 16 years during this period. The

Table 2 City of Manteca Water Production History								
		Developed Area	Total City Area	Annual Groundwater Use		Annual Surface Water Use		Annual Average Day Use
Year	Population	Acres	Acres	AF	MG	AF	MG	MGD
1960	8242	1117	1176	2,277	742			2.03
1961	8662	1225	1289	2,486	810			2.22
1962	9350	1272	1339	2,575	839			2.30
1963	10175	1338	1408	2,225	725			1.99
1964	10700	1338	1408	2,461	802			2.20
1965	11200	1467	1544	2,467	804			2.20
1966	12000	1540	1621	2,777	905			2.48
1967	12550	1540	1621	2,547	830			2.27
1968	12950	1747	1839	2,802	913			2.50
1969	13500	1831	1927	3,004	979			2.68
1970	13824	1831	1927	3,115	1,015			2.78
1971	14600	1976	2196	3,225	1,051			2.88
1972	15650	2068	2298	3,710	1,209			3.31
1973	16350	2377	2641	3,646	1,188			3.25
1974	17050	2414	2682	3,621	1,180			3.23
1975	17750	2466	2835	3,901	1,271			3.48
1976	18000	2519	2964	4,478	1,459			4.00
1977	18400	2884	3475	3,830	1,248			3.42
1978	20107	3014	3676	4,619	1,505			4.12
1979	21600	3046	3807	5,472	1,783			4.88
1980	23150	3169	4063	5,785	1,885			5.16
1981	25641	3187	4086	6,485	2,113			5.79
1982	27009	3316	4251	6,319	2,059			5.64
1983	27891	3316	4251	6,604	2,152			5.90
1984	29027	3344	4287	8,124	2,647			7.25
1985	32545	3353	4299	8,621	2,809			7.70
1986	35437	3968	5087	9,099	2,965			8.12
1987	37125	4238	5433	9,437	3,075			8.42
1988	38220	4253	5453	8,881	2,894			7.93
1989	39664	4253	5453	10,124	3,299			9.04
1990	40733	4300	6320	9,873	3,217			8.81
1991	41632	4350	6533	8,940	2,913			7.98
1992	42147	4400	6912	9,695	3,159			8.65
1993	43469	4450	6951	10,272	3,347			9.17
1994	44236	4525	7288	10,290	3,353			9.19
1995	44111	4600	7372	10,631	3,464			9.49
1996	44961	4725	9504	11,014	3,589			9.83
1997	45930	4850	9713	11,939	3,890			10.66
1998	47111	4985	9939	10,545	3,436			9.41
1999	49255	5411	10126	12,273	3,999			10.96
2000	51655	5837	10126	12,608	4,108			11.25
2001	55288	6126	10216	12,975	4,228			11.58
2002	57526	6415	10269	13,515	4,404			12.06
2003	60176	6704	10269	14,450	4,708			12.90
2004	61809	6993	10322	14,930	4,865			13.33
2005**	63389	7281	10975	11,275	3,674	3,667	1,194.8	13.34
2006	64488	8393	10975	8,062	2,627	6,739	2,195.8	13.21
2007	66123	8393	11211	9,119	2,971	6,364	2,073.5	13.82
2008	67754	8426	11318	8,557	2,788	6,884	2,243.1	13.78
2009	68847	8438	11426	7,157	2,332.	7,050	2,297	12.68

**Surface water delivery began in 2005

severity of possible reductions was estimated by examining the three lowest inflow years of 1977, 1924 and 1988, which would have reduced SSJID's allocation by 37, 24 and 23 percent, respectively. Conservation and increased groundwater development can sustain reductions of this order. Based on SSJID water rights and minimal reductions in past low flow years, the surface water supply is considered a reliable source. To assure water supply reliability, Manteca plans to construct additional groundwater wells to maintain full water supply with a 50% reduction in surface water supply.

The long term overdraft of the basin groundwater poses a water supply reliability threat from the intrusion of saline water. Surface water supplies will enable groundwater pumping to be reduced the in Manteca area and reduce the intrusion of saline water into the area.

Changes in water quality standards have the potential to reduce available groundwater available to the City. Water quality standards are reviewed regularly by the EPA and may result in revising existing allowable contaminant levels or establishing limits for new contaminants. The City monitors regulatory actions that can affect City water supplies. The most recent standard revision was for arsenic. The revised limit and the City's response to maintain water the water supply is discussed below. The Federal Maximum Contaminant Level (MCL) for arsenic was lowered from 50 ug/l to 10 ug/l in 2001. The State of California also adopted the 10 ug/l arsenic MCL. The revised Federal arsenic MCL became effective in 2006. Twelve of the 16 City wells exceed the 10 ug/l MCL, with concentrations ranging from 12 to 19 ug/l. To maintain water the City water supply, Manteca installed arsenic treatment at six wells and will install arsenic treatment at the remaining six wells in 2010.

Changes in groundwater water quality also have the potential to reduce the amount of groundwater available to the City. For example, three City wells exceeded the nitrate MCL in 2006. The affected wells were shut down until the elevated nitrate problem was resolved. Well modifications were completed at two wells in 2008 and restored 3,500 gpm of the lost production capacity. A water blending project will be completed in 2010 that will restore an additional 1,100 gpm of lost production capacity. There was a loss of 500 gpm in well capacity due to the sealing of strata with the high nitrate concentrations in Well 24.

Conclusion

The City of Manteca's existing and planned surface water and ground water supply is sufficient for the development described in the Northwest Airport Way Master Plan as well as providing water for existing and other future developments. Water distribution system improvements are necessary to supply water to the development. The

specific water distribution improvements for the development will be identified from the fire flow evaluation and during the tentative map review and approval process.

To reduce the reliance on the potable water system, non-potable water lines should be installed for landscape and open space irrigation. A non-potable landscape irrigation well should be used for the landscape and open space irrigation to reduce potable water supply demand. The irrigation system should be converted to reclaimed water if it becomes available.

The City is addressing issues that may affect the reliability of its potable water supply, which include the arsenic and nitrate contamination.

Attachment 1

Northwest Airport Way Development

Attachment 2

2005 Urban Water Management Plan Excerpts

Groundwater

The City is located in the Eastern San Joaquin County Groundwater Basin (ESJCGB), which is a sub-basin of the San Joaquin Valley Groundwater Basin. The ESJCGB subbasin number is 5-22.01. DWR's Bulletin 118 – 80, *Ground Water Basins in California* classified the ESJCGB as a basin in a critical condition of overdraft. The Northeastern Groundwater Banking Authority and the San Joaquin County Flood Control and Water Conservation District undertook the development of a groundwater management plan for San Joaquin County, which includes most of the ESJCGB. The San Joaquin County Board of Supervisors adopted the groundwater management plan in September of 2005. The South County Water Supply Project is discussed in the groundwater management plan as an integrated conjuctive use program element.

The groundwater aquifers underlying the City extend to depths in excess of 600 feet have been identified to include four geologic formations. In increasing depth from the surface, the identified aquifers are Victor Formation, Laguna Formation, Mehrten Formation, and Valley Springs Formation. Due to the alluvial generation of these aquifers, there is significant variation in grain size, with lenses and strata of high yield gravel, permeable sandy material and lower permeability clays. In general, the strata slope from the hills east of the City downward to the west, providing good recharge from hill runoff as well as from the Stanislaus River. The City's wells primarily withdraw water from the Laguna and Victor Formations.

The groundwater basin safe yield was estimated in a 1985-groundwater study at 1.0 acre-foot per acre per year. Historically, the City extracted groundwater at a rate of approximately 2.4 acre-feet per acre per year, based on the developed City area. As discussed previously, the South County Water Supply project will allow the City's to reduce local groundwater extraction to the basin safe yield of 1.0 acre-foot per acre per year. Groundwater pumping by City wells from 2000 to 2004 is summarized in Table 5.

Table 5.

City of Manteca Groundwater Pumping

Year	**2000**	**2001**	**2002**	**2003**	**2004**
Acre Feet	12,609	12,974	13,516	14,451	14,933
Percent of Water Supply	100	100	100	100	100

Recycled Water

The City wastewater quality control facility (WQCF) treats an average dry-weather wastewater flow of about 6 mgd and has an average dry weather design capacity of 6.95 mgd. A WQCF expansion is currently in progress to increase the average dry weather capacity to 9.87 mgd. Approximately 15 percent of the wastewater treated at the WQCF is from the City of Lathrop.

Supply and Demand Comparison

Law

> 10635 (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from the state, regional, or local agency population projections within the service area of the urban water supplier.

Supply and Demand Comparison

Table 9 compares current and projected water supply and demand. It indicates that in average water years, the City has sufficient water to meet its customers' needs, through 2025. This is based on continued development of groundwater wells and completion of the South County Surface Water Project. As noted in Table 9, the supply totals assume a groundwater withdrawal rate of 1.0 acre ft per acre per year beginning in 2005.

Table 9.
Projected Supply and Demand Comparison

	2005	2010	2015	2020	2025	2030
Supply totals	15,591	18,471	22,286	27,279	32,334	34,590
Demand totals	15,491	18,310	21,641	25,579	30,234	35,735
Difference	100	161	645	1,700	2,100	-1,145
Units of Measure: Acre-feet/Year						

It is estimated that water demand will exceed supply in 2030 by about 3.3 percent.

Table 10 presents a supply and demand comparison where surface water supply decreases in response to dry year conditions. This analysis assumes that groundwater is extracted at 1 acre-foot/acre per year. The groundwater supply is increased yearly as required to conform to City policy of assuring there is adequate water and sewer capacity for new development. This requires the development of additional groundwater supplies to maintain the groundwater supply at 47 percent of the water supply. The water demands presented in Table 10 assume a 3.4 percent annually increase. The water supply demand scenario calculation is included in Appendix C.

Table 10.

Single Dry Year and Multiple Dry Water Years
Water Demand-Supply Comparison

Water Supply Sources	**Current Supply**	**Single Dry Water Year 2005**	**Multiple Dry Water Years**			
			Year 1 2006	**Year 2 2007**	**Year 3 2008**	**Year 4 2009**
Supply totals	18,474	14,564	19,028	17,904	18,322	18,021
Percent supply reduction	0	22	0	6	5	8
Demand totals	15,491	15491	16,018	16,562	17,125	17,708
Difference	2,983	-927	3,010	1,342	1,197	313
Unit of Measure: Acre-feet/Year						

Water Shortage Contingency Ordinance/Resolution

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (h) A draft water shortage contingency resolution or ordinance.

City of Manteca Water Use Ordinance

The City of Manteca adopted an emergency water conservation ordinance in June of 1990 for the period from July 1, 1990 through October 1, 1990; the City then adopted a mandatory Water Conservation ordinance in 1991 that restricts various types of water uses between July 1 and October 1. Penalties for violation of the water use restriction were also established in the ordinance. In January 1995, the ordinance was amended to expand the time frame of mandatory water conservation (Ordinance No. 986). The revised water conservation "season" coincides with Daylight Saving Time each year. Every residence and business within the City limits receives notification in late March outlining the requirements of mandatory water conservation.

The ordinance does not contain provisions for restricting water use during water shortages. Should a severe water shortage occur as a result of a prolonged drought or other disaster, the City would need to adopt an emergency ordinance to restrict water use as needed.

A draft ordinance for adoption during a water shortage is included in Appendix F.

Charges for Excessive Use

The City of Manteca has a fixed monthly charge plus an inclining block rate water use charge to encourage water conservation. The water rate charges are listed in the City of Manteca Muncipal Code (Code 13.04.060). The water rate structure is summarized in Table 12. The Water Rates are adjusted annually to reflect current cost of water production and treatment.

Table 12.

City of Manteca Water Rate Schedule
For Year 2005

Meter Size	Fixed Monthly Charge	Block 1 @ $0.64 per Hcf	Block 2 @ $0.84 per Hcf	Block 3 @ $1.69 Per Hcf
5/8" x3/4"	13.55	20 Hcf	21 to 300 Hcf	Above 300 Hcf
1"	20.95	30 Hcf	31 to 300 Hcf	Above 300 Hcf
1-1/2"	39.25	60 Hcf	61 t0 300 Hcf	Above 300 Hcf
2"	61.35	90 Hcf	91 to 300 Hcf	Above 300 Hcf
3"	112.95	180 Hcf	181 to 300 Hcf	Above 300 Hcf
4"	186.65	280 Hcf	281 to 300 Hcf	Above 300 Hcf
6"	370.70	340 Hcf	--	Above 300 Hcf
8"	591.65	520 Hcf	--	Above 300 Hcf

To date, the water use charges, and the mandatory and voluntary conservation program has succeeded in reducing water usage so that the City of Manteca has not had to adopt more stringent restriction regulations.

Stages of Action

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions which are applicable to each stage.

Rationing Stages and Reduction Goals

The City would adopt a staged rationing plan to invoke during declared water shortages. The proposed rationing plan is presented in Table 13. The existing City water conservation ordinance is in effect during daylight savings each year regardless of the water shortage condition. The water conservation ordinance encompasses much of the water reductions of a Stage I or II goal. The implementation of a Stage III or IV goal would involve more restrictive use of water, such as limiting water use for landscape irrigation on both public and private property. More restrictive water use limits and mandatory reductions for a Stage II, III or IV water reduction goal would require action by the City Council to implement.

Table 13.
Water Rationing Stages and Reduction Goals

Shortage Condition	Stage	Customer Reduction Goal	Type of Rationing Program
Up to 10%	I	10%	Voluntary
10 – 20%	II	20%	Mandatory
20 - 35%	III	35%	Mandatory
35 - 50%	IV	50% or >	Mandatory

Priority by Use

Priorities for use of available potable water during shortages were based on legal requirements set forth in the California Water Code, Sections 350-358. Water allocations are established for all customers according to the following ranking system:

- Minimum health and safety allocations for interior residential needs (includes single family, multi-family, hospitals and convalescent facilities, retirement and mobile home communities, and student housing, and fire fighting and public safety)
- Commercial, industrial, institutional/governmental operations (where water is used for manufacturing and for minimum health and safety allocations for employees and visitors), to maintain jobs and economic base of the community (not for landscape uses)
- Existing landscaping
- New customers, proposed projects without permits when shortage declared.

Health and Safety Requirements
Based on commonly accepted estimates of interior residential water use in the United States, Table 14 indicates per capita health and safety water requirements. In Stage I shortages, customers may adjust either interior or outdoor water use (or both), in order to meet the voluntary water reduction goal. Under Stage II shortages, the mandatory outside water use restriction, combined with interior water use conservation will help meet water reduction requirements.

Under Stage III and Stage IV a more stringent water rationing and water use program would be required. To meet the Stage III conservation requirements the City would limit outdoor water uses and landscape irrigation and would consider a ration allotment of 68 gpcd (which translates to 33 hundred cubic feet per person per year), based on Table 14 Per Capita Health and Safety Water Quantity calculation for non-conserving fixtures without habit or plumbing fixture changes. If customers wish to change water use habits or plumbing fixtures, 68 gpcd could provide a limited amount of water for non-essential (i.e. outdoor) uses.

Stage IV mandatory rationing, which is likely to be declared only as the result of a prolonged water shortage or as a result of a disaster, would require that customers to eliminate outdoor water uses and make changes in their interior water use habits (for instance, not flushing toilets unless "necessary" or taking less frequent and shorter showers)

Table 14.

Per Capita Health and Safety Water Quantity Calculations

	Non-Conserving Fixtures		**Habit Changes** 1		**Conserving Fixtures** 2	
Toilets	5 flushes x 5.5 gpf	27.5	3 flushes x 5.5 gpf	16.5	5 flushes x 1.6 gpf	8.0
Shower	5 min x 4.0 gpm	20.0	4 min x 3.0 gpm	12.0	5 min x 2.0	10.0
Washer	12.5 gpcd	12.5	11.5 gpcd	11.5	11.5 gpcd	11.5
Kitchen	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Other	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Total (gpcd)		68.0		48.0		37.5
HCF per capita per year		33.0		23.0		18.0

1 Reduced shower use results from shorter and reduced flow. Reduced washer use results from fuller loads.
2 Fixtures include ULF 1.6 gpf toilets, 2.0 gpm showerheads and water efficient clothes washers.

Water Shortage Stages and Triggering Mechanisms
The City must provide the minimum health and safety water needs of the community at all times. The water shortage response is designed to provide a minimum of 50% of normal supply during a severe or extended water shortage. The rationing program triggering levels shown in Table 14 were established to ensure that this goal is met.

Rationing stages may be triggered by groundwater or surface water supply shortages. Groundwater shortages caused by depletion of the groundwater, by the loss of one or more wells by failure of either the well or mechanical equipment, or by well contamination. Surface water shortages may be caused by failures at the treatment plant or water transmission line, drought, water contamination, or power failure.

Table 15. Water Shortage Stages and Triggering Mechanisms				
Percent Reduction of Supply	**Stage I Up to 10%**	**Stage II 10 – 20%**	**Stage III 20 - 35%**	**Stage IV 35 - 50% >**
Water Supply Condition				
Current Supply	Total supply is 90% of "normal." Or	Total supply is 80 – 90% of "normal." Or	Total supply is 65 – 80% of "normal." Or	Total supply is less than 65% of "normal." Or
Future Supply	Projected supply insufficient to provide 90% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 80% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 65% of "normal" deliveries for the next two years. Or	Projected supply insufficient to provide 50% of "normal" deliveries for the next two years. Or
Water Quality	Contamination of 10% of water supply (exceeds primary drinking water standards)	Contamination of 20% of water supply (exceeds primary drinking water standards)	Contamination of 30% of water supply (exceeds primary drinking water standards)	Or
Disaster Loss				Disaster Loss

Water Reductions

Comparison of historical water usage with water shortage stages indicates the City has an adequate supply during the winter, spring and fall. Peak water demand would exceed the water system peak capacity during the months of June through October. The severity of the peak shortage and months in effect depend on the water shortage stage. The total water demand is mostly residential and ranges between 75 and 77 percent of the annual demand. Comparison of the winter and summer demands indicate that landscape irrigation is the major water use during the summer.

Table 16 presents the City established reductions for each customer type during the summer months when peak capacity shortage would occur. The reductions are based on winter and summer water demands. The winter demand provides a basis for minimum essential supply (non-irrigation use) for all customers. For residential customers the winter and summer per capita demand are considered to define the required reduction. For other customer types, total winter and summer use are used to define the required reductions, with winter use defining the minimum essential use. The percent reductions shown in Table 16 would be applied during the City's peak water demand period of June through October. Application of the water reductions provides water in excess of the winter water usage for all customer groups and maintains an additional 2000 gpm reserve capacity based on maximum day capacity (70% of well capacity). The reductions are for landscape irrigation and other outdoor water use and have minimal impact on indoor water use. Differences in the total reduction achieved and supply shortage for Stages I, II and III are made up from the system's excess capacity. Appendix E provides a breakdown of the water reductions presented in Table 16.

Table 16.

Customer Water Reductions During Water Shortage

Customer	Stage 1 Reduction, %	Stage 2 Reduction, %	Stage 3 Reduction, %	Stage 4 Reduction, %
Residential	5	15	35	55
Markets	--	--	5	10
Hotels/Motels	--	10	20	20
Trailer Parks	5	10	30	50
Rooming Houses	5	10	20	20
Professional Offices	--	10	25	35
Retail Stores	--	10	20	30
Car Wash	--	--	5	10
Service Stations	--	--	5	10
Restaurants	--	--	5	10
Schools	--	10	15	30
Hospitals	--	--	10	15
Churches	--	--	10	20
Institutions/ Non-Profit	--	--	5	20
Industrial	--	--	5	10
City Landscape and Parks	--	15	35	60
Total Reduction	4	14	33	52

Any customer may appeal the classification on the basis of use or the allotment on the basis of incorrect calculation.

Prohibitions, Consumption Reduction Methods and Penalties

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
> 10632 (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
> 10632 (f) Penalties or charges for excessive use, where applicable.

Mandatory Prohibitions on Water Wasting

The City Ordinance includes provisions on Unlawful Water Use, which include specific types of water use as well as water waste. The Unlawful Water Use provisions are in effect during Daylight Savings and include prohibitions and limitations for the following types of water use. The Unlawful Water Use provisions are included in Appendix F.

- Washing of nonlandscaped exterior ground surfaces,
- Watering landscape, exterior building washing, or swimming pool filling on Tuesday,

Thursday and Saturday for odd-number addresses, or on Monday, Wednesday and Friday for even-number addresses, or at any location between noon and 6 p.m. on any day; with exceptions for newly planted landscaping, the city golf course and city parks.

- Taking of water from any fire hydrant except by fire protection agencies, or for construction purposes by permit from the public works department.

- Allowing the escape of water through leaks, breaks or malfunction in plumbing or distribution system for more than 24-hours after discovery or notification of discovery.

- Washing of automobiles or boats; except at a commercial car wash, or by use of a quick-acting positive shut-off nozzle on the hose, or with bucket and sponge.

- No serving of water by restaurants except upon request of a customer.

- Watering which causes water to flow into a gutter or other drainage area for a period exceeding five minutes.

More restrictive water use limits that can be inacted to reduce water demand and include further reduction in landscape water use such as once a week watering, no vehicle washing, and the reduction or elimination of park irrigation.

No 'cut-off' number has been adopted for maximum allowable consumption but the City of Manteca implemented an increasing block schedule for all customer types to encourage water conservation and penalties for unlawful water uses defined in the City Ordinance. Table 17 lists consumption reductions methods the City would use during water short stages.

Table 17.

Consumption Reduction Methods

Examples of Consumption Reduction Methods	Stage When Method Takes Effect
Demand reduction program	All stages
Reduce pressure in water lines	--
Flow restriction	--
Restrict building permits	Stage IV
Restrict for only priority uses	--
Use prohibitions	All stages
Water shortage pricing	--
Per capita allotment by customer type	--
Plumbing fixture replacement	--
Voluntary rationing	All stages
Mandatory rationing	Stage II, III and IV
Cost incentives to reduce water consumption	All Stages
Education Program	All Stages
Percentage reduction by customer type	All Stages
Penalties for unlawful water use	All Stages

The Unlawful Water Use provisions of the City Ordinance are in effect for only part of the year but could be applied during any water short period if necessary by action of the City Council. Additional water conservation methods not included in the Unlawful Water Use Ordinance could also be implemented during a water shortage by action of the City Council.

Excessive Use Penalties

Any customer violating the regulations and restrictions on water use set forth in the City Ordinance receives a written notice for the first such violation. A second violation, is an infraction of the City Ordinance, and is punishable by a fine of fifty dollars ($50.00). A third violation is an infraction of the City Ordinance and is punishable by one hundred dollar fine ($100.00). Any subsequent violation is a misdemeanor and is punishable by a fine of one thousand dollars ($1,000.00), or by imprisonment in the county jail for a period not to exceed six months, or by both a fine and imprisonment.

Penalties for not reducing water use during a declared water shortage stage could be implemented by action of the City Council.

Revenue and Expenditure Impacts and Measures to Overcome Impacts

Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier and [An analysis of the impacts of each of the] proposed measures to overcome those [revenue and expenditure] impacts, such as the development of reserves and rate adjustments.

In 1996, the City initiated a water service rate study to evaluate the current City rate and recommend a new rate structure as necessary to cover the future cost of supplying water to City customers. The result of the study was the adoption of an inclining block rate for all City water customers. The rate structure included a fixed cost component for the fixed cost component of the water supply, and three use rate blocks for the variable cost of water supply. The rate study included costs for City participation in the South County Surface Water Supply project as well as cost of providing water from the City groundwater wells and funding cash reserves and capital replacements. The rate study also included recommendations for increasing the fixed and variable cost of water over a five year period (through the 2002 fiscal year) to account for inflation, and other system cost increases. The recommended rate increases also provide a gradual transition from the low cost groundwater supply to the more costly combined surface water and groundwater supply.

In 2002, the City conducted another rate study to update the water rates and water development fees. Based on the findings of the study water rates and development fees were developed and adopted the five year period between 2003 and 2007. The existing rate structure and fee structures were retained. The adopted rates include provisions for construction of arsenic treatment facilities as well as retaining the rate increase structure to pay for surface water and fund reserves. Reserves established in the 2002 rate study included an operating reserve equal to 33 percent of the annual operating budget and a rate stabilization reserve. The operating reserve requirement is estimated to reach $2,744,000 by 2007. The rate stabilization reserve is $1,500,000.

As there is a fixed fee component in the water rate structure to cover fixed costs, reductions in water use will not adversely affect the financial stability of the water enterprise. Reserve requirements were developed to build and maintain reserves for capital improvements and short term operating expenses. An operating reserve fund and rate stabilization reserve were established

The 2002 water rate study also evaluated the effect of different growth rates on the ability of the water enterprise to meet financial obligations. It was found that only in a zero growth condition would the City need to increase water rates above the scheduled rate increases at the end of the rate study's five year planning period.

Reduction Measuring Mechanism
Law

> 10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:
>
> 10632 (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

Mechanism to Determine Reductions in Water Use

All of the City groundwater wells are metered and well operations are monitored and recorded by the City's SCADA system. Water production reports can be generated to track reductions in use that may result from water conservation programs implemented by the City. In addition, all City provided water services are metered, which allows tracking of individual customer water use. Typically, the customer water meters are read monthly, but during a water shortage more frequent readings could be taken if necessary to identify excessive water use and monitor customer water reductions. The City has implemented an automated meter reading system and is gradually converting all services to the automated meter reading system. Automated meter reading will facilitate a more frequent meter reading schedule if necessary.

Attachment 3

Water Demand Supply Comparisons 2030 to 2035.

Revised Tables 4, 7 and 9

Revised Table 4
Current and Projected Water Supplies

Water Supply Sources	2005	2010	2015	2020	2025	2030	2035
Purchased from USBR							
Purchased from DWR							
Purchased from wholesaler (SSJID South County Surface Water Project)	4,100	9,704	11,470	13,557	16,444	18,500	18,500
City produced groundwater	11,491	8,606	10,171	12,022	13,790	13,790	13790
City produced surface water							
Transfers							
Exchanges In							
Recycled Water		161	645	1,700	2,100	2,300	2,500
Recycled Water used for ground water recharge (adds to gw supply)							
Other							
Total	15,591	18,471	22,286	27,279	32,334	34,590	34,790
Units of Measure: Acre-feet/Year							

	Revised Table 7 Past, Current and Projected Water Use									
Water Use Sectors	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Single family residential	6,235	5,789	8,035	10,467	12,372	12,721	13,826	16,342	19,316	22,830
Multi-family residential	1,267	1,068	1,260	1,314	1,553	1,597	1,736	2,052	2,425	2,866
Commercial	828	815	1,103	1,211	1,431	1,472	1,600	1,891	2,235	2,642
Industrial	173	213	145	107	126	130	142	167	198	234
Institutional and governmental	220	251	363	329	390	400	434	574	759	897
Landscape	548	598	658	617	729	750	815	963	1,136	1,345
Sales to other agencies	0	0	0							
Saline barriers	0	0	0							
Groundwater recharge (recycled water)	0	0	0							
Conjunctive use	0	0	0							
Agriculture	0	0	0							
Unaccounted-for system losses	602	1,988	1,044	1,446	1,709	2,020	2,388	2,822	3,336	3,944
Total	9,873	10,631	12,608	15,491	18,310	19,090	20,941	24,752	29,407	34,759
	Unit of Measure: Acre-feet/Year									

13% Reduction in water Demand by conservation achieved in 2015
20% Reduction in water demand by conservation achieved by 2020-2035

Revised Table 9 Projected Supply and Demand Comparison							
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Supply totals	15,591	18,471	22,286	27,279	32,334	34,590	34,790
Demand totals	15,491	18,310	19,090	20,941	24,752	29,407	34,759
Difference	100	161	3,196	6,338	7,582	5,183	31
Units of Measure: Acre-feet/Year							