IV. ENVIRONMENTAL IMPACT ANALYSIS
N. UTILITIES

INTRODUCTION

This section addresses the subject of utilities with respect to the Project and includes an examination of the existing services provided to the Project site, future needs, and the potential impacts that the Project would have on those services. The utilities section is subdivided into the following two sections: (1) wastewater and (2) water.

1. WASTEWATER SERVICES

ENVIRONMENTAL SETTING

The Mammoth Community Water District (MCWD) was formed in 1958 to provide water and wastewater services to the Town of Mammoth Lakes (Town). The MCWD boundaries include 3,640 acres of land in the developed portion of the Town. The Town includes approximately 2,500 acres of privately owned land in the developed portion of the 24-square mile incorporated area. The remaining incorporated area is publicly owned and is managed by the Inyo National Forest. A major characteristic of the Town is the seasonality of land use activities. As a result, the MCWD experiences large fluctuations in demand for water and wastewater service. During the seven-month winter ski season, activity is centered in the Town. During the summer months of July, August, and September, outdoor recreation activities shift to areas outside of the Town. The greatest demand for water service occurs during the summer months when irrigation of residential landscaping takes place. October and November represent the lowest period of demand for service from the MCWD. The majority of the water demand on the MCWD's system comes from residential uses.

Wastewater lines within the boundaries of the Town are owned, operated and maintained by MCWD. The MCWD's sewage collection system includes 13 wastewater pump stations and over 52 miles of wastewater mains and interceptors. The MCWD sewer collection system consists of four main wastewater lines ranging in size from six to 18 inches in diameter, located within Old Mammoth Road, Meridian Boulevard, Sierra Star Golf Course to Center Street, and Main Street. The interceptor lines vary in diameter from 18 to 21 inches.[1]

For the collection and transmission system, MCWD engineers performed hydraulic modeling and found negligible amounts of capacity in existing facilities available to serve future demands, when examining the collection system as a whole.[2]

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[1] *MCWD, http://www.mcwd.dst.ca.us/ProjectsReports/UWMP/UWMP2005.pdf, CAJA staff, March 4, 2006.*

[2] *MCWD Study to Determine Revised Water and Wastewater Connection Fees September 2006.*

The wastewater generated in the Project area is conveyed to the MCWD Wastewater Treatment Plant (WWTP), located near the intersection of Meridian Boulevard and Main Street (SR 203), through two 18-inch interceptor sewer lines. The WWTP provides advanced secondary treatment, which includes biological treatment, filtration, and disinfection through the utilization of chlorine. The WWTP is designed to provide treatment for peak daily flows of 4.9 million gallons per day (mgd). The current average daily flow is 1.6 mgd with a peak daily flow of 2.6 mgd on holidays and weekends.[3] By the year 2025, MCWD projects that 2.6 mgd of wastewater will be generated and collected on average with peak flows reaching approximately 4.3 mgd. Treated wastewater is currently discharged to Laurel Pond, an effluent dominated water body located approximately 5.5 miles southeast of the Town on United States Forest Service (USFS) land. The MCWD holds a waste discharge permit and has been discharging treated effluent to this pond since 1985. Throughout the years, the pond has become a constructed wetland and a migratory magnet for waterfowl and shorebirds.[4] Disposal occurs at the pond through percolation into the ground and evaporation into the atmosphere. The existing WWTP is designed to accommodate the average and peak amounts of wastewater generated in the community through the year 2025.[5]

Proposed Improvements

MCWD is proposing to upgrade the water treatment process to California Code of Regulations Title 22 (Title 22) tertiary treatment as part of their new Recycled Water Project, which involves improving the existing filtration and disinfection process at the WWTP. Improvements to the WWTP would include secondary effluent pumping, coagulant/polymer addition and mixing, filtration system upgrades, disinfection system upgrades, recycled water in-plant storage, and recycled water pumping equipment. The system will be designed for peak filtration and disinfection flow of 1,600 gallons per minute (gpm), equivalent to 2.3 mgd. At current WWTP flows experienced during the irrigation season, the system is initially expected to produce an average flow of 1.4 mgd of disinfected tertiary effluent suitable for unrestricted irrigation per Title 22.[6]

In addition to improved treatment processes, the Recycled Water Project proposes adding pipelines for distribution of the treated water for irrigation purposes. Distribution facilities will include a recycled water pumping station to be located in the WWTP, adjacent to the storage basin. The pumping station will feed three force mains for conveyance to the Sierra Star Golf Course and the existing nine-hole Snowcreek Golf Course, as well as Shady Rest Park. A below grade concrete receiving tank with level transducer will be provided at each golf course. Receiving tank level will be transmitted to the WWTP pumping station to control pump operation and speed. The receiving tanks will be sized to provide just

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[3] *Hegeman, Ericka, Public Affairs and Environmental Specialist, Mammoth Community Water District, correspondence CAJA staff, February 2, 2007.*

[4] *http://www.fs.fed.us/outdoors/naturewatch/california/Wildlife/laurel-ponds/index.shtml*

[5] *MCWD, http://www.mcwd.dst.ca.us/UWMP/UWMP2005.pdf, CAJA staff, March 4, 2006.*

[6] *Bauer Planning & Environmental Services, Inc. Mammoth Community Water District, Recycled Water Distribution Project, Subsequent Final EIR, March 15, 2007.*

sufficient volume to allow adequate pump cycling at the WWTP pumping station. The receiving tanks will be connected to the wet well of existing golf course irrigation pumping stations, currently supplied by well water storage ponds. Isolation valves will be installed in the line connecting the recycled water receiving tank and the on-site irrigation pumping station wet well, and in the line connecting the well water storage pond and the wet well. This will eliminate the need for recycled water open storage in the existing golf course ponds, and will allow well water to be used as backup.[7]

The 2006 Recycled Water Distribution Project EIR identifies the following customers to receive the reclaimed water during summer months: Sierra Star Golf Course, the existing nine-hole Snowcreek Golf Course, and Shady Rest Park. The additional nine-hole expansion to the Snowcreek Golf Course may also receive reclaimed water. The additional nine-hole expansion to the Snowcreek Golf Course may also receive reclaimed water. MCWD certified of the final Recycled Water Project EIR at its March 15, 2007 meeting. The Recycled Water Project is anticipated to be complete by the summer of 2010.

Other planned improvements to the system include upgrading the filter backwash system at Groundwater Treatment Plant #2. The planned upgrade would increase capacity in the sewer lines by about 300 to 350 gpm. This would be achieved by reclaiming the filtered backwash water and could recycle as much as 95 to 99 percent of the backwash that currently goes into the sewer. Although the improvement has not yet been designed, construction may occur as early as the winter 2006/2007 or as late as winter 2007/2008.

REGULATORY SETTING

Regional Water Quality Control Board

The Town is within the jurisdictional boundaries of the Lahontan Regional Water Quality Control Board (RWQCB). The Lahontan RWQCB develops and enforces water quality objectives and implementation plans that safeguard the quality of water resources in its region. In accordance with Section 13263 of the California Water Code, the RWQCBs are authorized to issue Waste Discharge Requirements as well as periodically review self-monitoring reports submitted by the discharger, and perform independent compliance checking, and take enforcement action if necessary. Chapter 4.4 of the Water Quality Control Plan for the Lahontan Region, North and South Basins, outlines policies and regulations for municipal wastewater treatment, disposal, and reclamation. The standards contained within the Water Quality Control Plan are designed to provide applicants with a uniform approach for the design and installation of adequate systems to control wastewater and wastewater treatment/sewage disposal impacts from the Town, and to prevent any potential contamination of groundwater at the discharge site.

[7] *Bauer Planning & Environmental Services, Inc. Mammoth Community Water District, Recycled Water Distribution Project, Subsequent Draft EIR, September 2006.*

Urban Water Management Plan

In accordance with the California Water Code 10610, also known as the Urban Water Management Planning Act (Act) of 1984, the MCWD adopted an Urban Water Management Plan (2005 UWMP) in December 2005. The Act states that the UWMP must be updated every five years to identify short-term and long-term water demand management in order to meet growing water demands during normal, dry and multiple dry years. The 2005 UWMP provides information about MCWD's responsibilities towards water supply and water recycling in the community including wastewater generation, collection, treatment, and disposal.

ENVIRONMENTAL IMPACTS

Thresholds of Significance

In accordance with Appendix G to the *CEQA Guidelines*, the Project could have a significant environmental impact if it would:

(a) exceed treatment requirements of the applicable Regional Water Quality Control Board;

(b) require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or

(c) result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Wastewater Services Issues Not Analyzed Further

As previously stated, the RWQCB enforces waste discharge requirements for the MCWD's service area and WWTP. The Project site is not served by a private on-site wastewater treatment system but instead conveys wastewater via municipal sewage infrastructure maintained by MCWD. The WWTP is a public facility and therefore, is subject to the State's wastewater treatment requirements. Consequently, wastewater from the Project site is, and would continue to be, treated according to the wastewater treatment requirements enforced by the RWQCB.[8] Therefore, the Project would not exceed wastewater treatment requirements, and no further analysis of this issue is required.

[8] *Hegeman, Ericka, Public Affairs and Environmental Specialist, Mammoth Community Water District, correspondence CAJA staff, May 18, 2006.*

Project Impacts and Mitigation Measures

Impact UTIL-1 Wastewater Generation

The Project proposes the development of 850 residential dwelling units, 400 Hotel rooms/suites, (250 Hotel rooms/suites and 150 Private Residence Club [PRC]/suite units) and up to 75,000 square feet for non-residential uses. The 850 residential will be a combination of condominium and townhouse units, with 80 condominium units slated as Workforce Housing.[9] As explained in detail in Section III (Project Description), approval of the 1981 Master Plan allowed for the construction of a total of 2,368 units, with 1,223 units remaining to be constructed (refer to Table III-1 and Figure III-1). The Project proposes to develop a total maximum of 1,050 dwelling units. Since the Snowcreek Master Plan was included both in the Town's General Plan Update Draft EIR and in the 2005 UWMP, MCWD used 1,250 units when calculating the amount of proposed water use for the Water Supply Assessment (Project WSA) for the Project. This is discussed in further detail below in Section IV.N.2 (Water Services) of this EIR. Therefore, the same numbers were used for consistency when analyzing the wastewater flows. Additionally, it should be noted that at the time the Project WSA was prepared, MCWD was not proposing to service the Outfitters' Cabin (1,700 sq ft) located at the far eastern boundary of the Project site, near the base of Sherwin Range. However, it has since been determined that MCWD can provide water services to the Outfitters' Cabin. MCWD determined that the nominal volume of water services needed to service the restroom and ancillary needs for the Outfitters' Cabin is available and would be provided through a separate agreement for MCWD customers located outside of the MCWD service area.[10]

According to the United States Census Bureau's Census 2000 data, the Project is anticipated to generate 2.44 persons per household, which could result in approximately 2,562 new residents. This is a conservative estimate due to the fact that the Project's proposed households would not likely be occupied year round. As such, the amount of wastewater generated at the Project site would increase. Given the fluctuation of the Town's tourism, the majority of the proposed residential units and commercial uses are likely to be occupied seasonally rather than on a year-round basis. Wastewater generation rates are analyzed for average day and peak day flows.

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[9] *Wastewater services for the off-site Workforce Housing will be treated as a separate project because the location for these additional units is currently unknown.*

[10] *Sisson, Gary, General Manager, Mammoth Community Water District, written correspondence CAJA staff, February 2, 2007. This letter is included in Appendix L of this Draft EIR.*

Table IV.N-1
Project Estimated Wastewater Demands

Unit Type	Size	Average Daily Generation Rate[3]	Total Average Gallons Per Day (GPD)	Peak Daily Generation Rate*	Total Peak GPD
RESIDENTIAL	**Dwelling Units (du) / Hotel Rooms**				
Homes (Condominiums)	850 du	110 gpd/unit	93,500	150 gpd/unit	127,500
Hotel Rooms/Suites & Private Residence Club (PRC)/suite units	400[1] rooms	60 gpd/unit	24,000	100 gpd/unit	40,000
NON-RESIDENTIAL	**Square Feet (sf)**				
Old Mammoth Commercial					
Market/General Store	3,500	12.8 gpd/1,000 sf	45	100 gpd/1,000 sf	350
Natural Resources & Historic Interpretive Center	900	50 gpd/1,000 sf	45	100 gpd/1,000 sf	90
Hotel					
Spa/Wellness Center	12,900	435 gpd/1,000 sf	5,612	514 gpd/1,000 sf	6,631
Retail	10,000	150 gpd/1,000 sf	1,500	280 gpd/1,000 sf	2,800
Restaurant/Bar/Lounge	10,000	510 gpd/1,000 sf	5,100	560 gpd/1,000 sf	5,600
Conference/Meeting Space	25,000	70 gpd/1,000 sf	1,750	90 gpd/1,000 sf	2,250
Golf Pro Shop	3,000	60 gpd/1,000 sf	180	100 gpd/1,000 sf	300
Resident's Club	8,000	435 gpd/1,000 sf	3,480	514 gpd/1,000 sf	4,112
Outfitters' Cabin[2]	1,700	n/a	n/a	n/a	n/a
Total Wastewater Demands			**135,212**		**189,663**

[1] *Hotel would accommodate 250 guest rooms/suites (125 dwelling units) and 150 Private Residence Club (PRC) suite units (75 dwelling units); total 400 rooms/suites. Under Town Code a hotel room/suite or private residence room equals ½ of a unit, thus the 400 Hotel rooms/suites equates to 200 dwelling units.*
[2] *The Outfitters' Cabin is outside of the MCWD service area, however, it has since been determined that MCWD can provide water services to the Outfitters' Cabin through a separate agreement.*
[3] *Calculated from 36 months of usage.*
Source: 2006 Revised Snowcreek Master Plan WSA and July 2006 Generation Rates from MCWD.

As mentioned above, wastewater from the Project site would be conveyed via wastewater infrastructure to the WWTP. Currently, the WWTP treats an average daily flow of 1.6 mgd, a peak daily flow of 2.6 mgd, and has capacity to treat 4.9 mgd. This translates into a remaining capacity of 2.3 mgd of wastewater at average daily flows and 3.2 mgd of wastewater at peak daily flows that can be treated at the WWTP.

Based on the methodology described above, as indicated in Table IV.N-1 above, the Project generates average daily flows of 135,212 gpd, or ~0.14 mgd, and peak use at 189,663 gpd, or ~0.19 mgd.

Therefore, the Project's anticipated average daily flow would be approximately 9 percent of the current usage and the peak daily flow would be approximately 7 percent of the current usage.[11] The Project would represent approximately 4 percent of the peak daily flow capacity of the WWTP treatment for peak daily flows up to 4.9 mgd.[12] Thus, Project impacts related to wastewater treatment capacity would be ***less than significant*** and no mitigation measures are required.

Impact UTIL-2 Wastewater Infrastructure

The Project includes installation of wastewater infrastructure within the Project site to convey wastewater generated by the proposed uses to the existing wastewater lines. However, the Project does not have the design plans for this infrastructure complete at this time. Figure IV.N-1 illustrates the existing wastewater infrastructure that serves the Project area. According to MCWD, areas of potential deficiency have been identified in sewer collection lines in the Project area depending on where the Project connects with existing sewer lines. The Project area has an eight-inch PVC sewer line located on the southern extremity of the area proposed for residential development. This section of eight-inch sewer line has enough capacity for about one-half of the estimated demands from the Project.[13] Since the eight-inch sewer line does not have enough capacity for the entire Project, MCWD has stated that connections would need to occur on the ten-inch PVC sewer line to the east of the Project's residential development area. The applicant would be responsible for all costs associated with the installation of wastewater infrastructure on the Project site and the connection fees paid to MCWD for the Project would help to pay for the necessary upgrades to the MCWD's sewer collection pipelines described above. In consideration of the above, Project impacts related to wastewater infrastructure would be ***less than significant*** and no mitigation measures are required.

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[11] *Percentages were calculated using .14/1.6 = .0875 (~9% of average daily flows) and .19/2.6 = .0730 (~7% of peak daily flows).*

[12] *Percentage was calculated using .19/4.9 = .0387 (~4% of maximum WWTP flow capacity).*

[13] *Hegeman, Ericka, Public Affairs and Environmental Specialist, Mammoth Community Water District, correspondence CAJA staff, February 2, 2007.*

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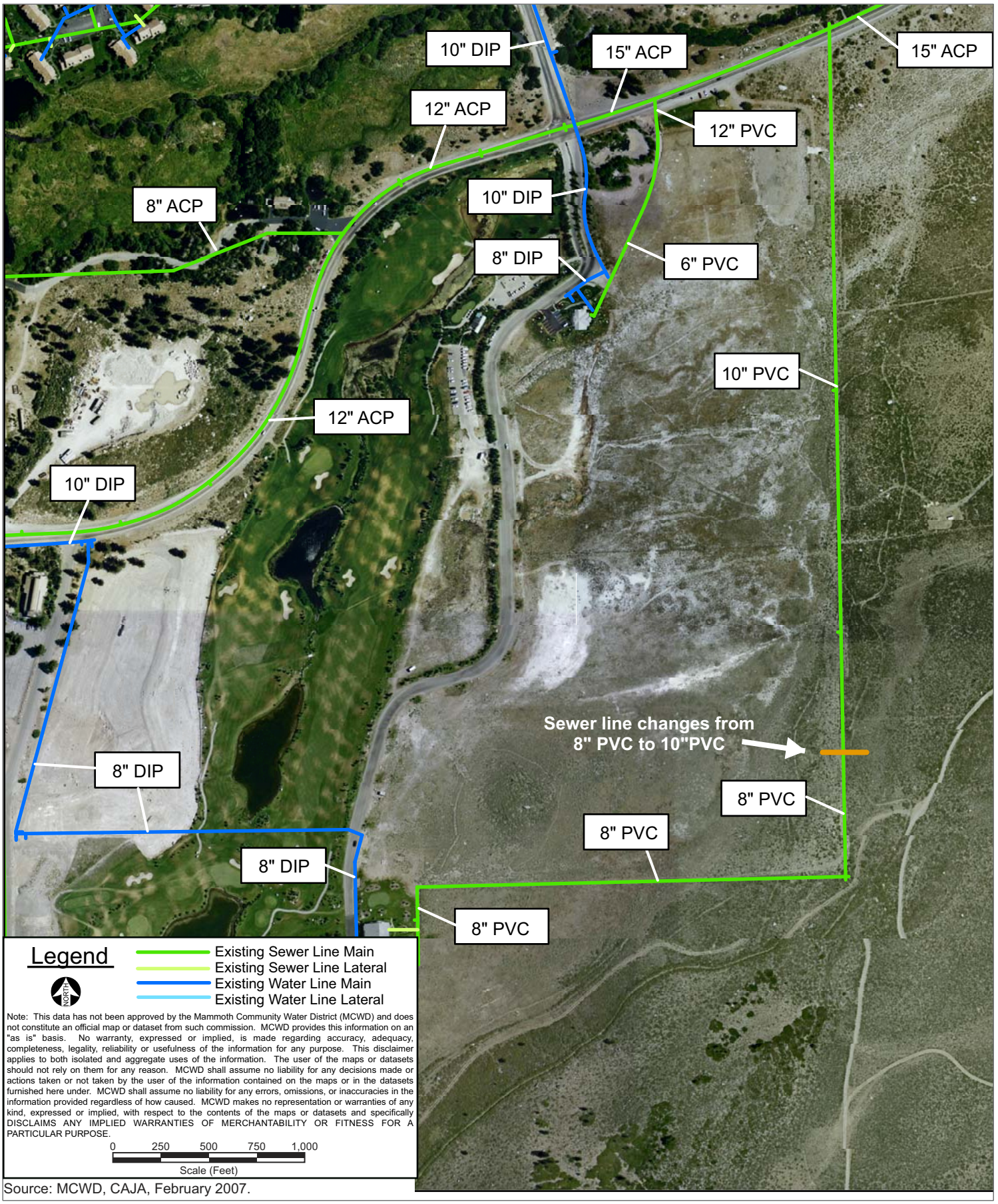

Source: MCWD, CAJA, February 2007.

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Environmental Planning and Research

Figure IV.N-1
Existing Sewer and Water Lines

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CUMULATIVE IMPACTS

Impact UTIL-3 Cumulative Wastewater Generation

Implementation of the Project in combination with the related projects in Table II-1 (Section II.C Related Projects) would further increase demands on wastewater infrastructure and treatment capacity. As shown in Table IV.N-2, the Project and the related projects would generate wastewater at an average daily rate of approximately 594,351 gpd or ~.59 mgd and a peak flow rate of approximately 808,851 gpd or ~.80 mgd. The potential need for the related projects to require upgrades to the WWTP to accommodate wastewater generated by these projects is site-specific, and there is little, if any, cumulative relationship between the development of the Project and the related projects. In addition, many of the related projects consist of redevelopment that would result in the elimination of existing wastewater generation patterns at these sites. Thus, the total amount of wastewater generation shown in Table IV.N-2 is likely overstated. Nonetheless, as noted above, the MCWD has a remaining capacity of 2.3 mgd of wastewater at average daily flows and 3.2 mgd of wastewater at peak daily flows that can be treated at the WWTP; thus cumulative impacts to the remaining capacity of the WWTP would be ***less than significant*** and no mitigation measures are required.

Table IV.N-2
Estimated Average Day and Peak Day Wastewater Generation for Project and Related Projects

Related Project No.	Land Use	Size (units) (square feet)	Average Daily Generation Rate*	Total Average Gallons Per Day (GPD)	Peak Daily Generation Rate	Total Peak Gallons Per Day (GPD)
1	HDR - R	106 units	170 gpd/unit	18,020	195 gpd/unit	20.670
2	IP – PS	16,000 sf	70 gpd/1,000 sf	1,120	90 gpd/1,000 sf	1,440
3	IP – PS	40,000 sf	150 gpd/1,000 sf	6,000	280 gpd/1,000 sf	11,200
4	HDR – CL	198 units	70 gpd/unit	13,860	90 gpd/unit	17,820
5	HDR – CL	11 units	70 gpd/unit	770	90 gpd/unit	990
6	V – SP	23 units	170 gpd/unit	3,910	195 gpd/unit	4,485
7	SP	42 units	110 gpd/unit	4,620	150 gpd/unit	6,300
8	LDR -1 – SP	14 units	135 gpd/unit	1,890	180 gpd/unit	2,520
9	SP	230 units 4,000 sf	110 gpd/unit 510 gpd/1,000 sf	25,300 2,040	150 gpd/unit 560 gpd/1,000 sf	34,500 2,240
10	HDR – CL	12 units	70 gpd/unit	840	90 gpd/unit	1,080
11	R	58 units	110 gpd/unit	6,380	150 gpd/unit	8,700
12	LDR -1 – R	19 units	110 gpd/unit	2,090	150 gpd/unit	2,850
13	HDR – R	72 units	110 gpd/unit	7,920	150 gpd/unit	10,800
14	HDR – RMF-2	24 units	110 gpd/unit	2,640	150 gpd/unit	3,600
15	HDR – R	45 units	110 gpd/unit	4,950	150 gpd/unit	6,750
16	HDR – R	40 units	110 gpd/unit	4,440	150 gpd/unit	6,000
17	R	28 units	110 gpd/unit	3,080	150 gpd/unit	4,200
18	SP	21 units	110 gpd/unit	2,310	150 gpd/unit	3,150
19	HDR – R	22 units	110 gpd/unit	2,420	150 gpd/unit	3,300
20	HDR – SP	251 units	110 gpd/unit	27,610	150 gpd/unit	37,650
21	SP	193 units	110 gpd/unit	21,230	150 gpd/unit	28,950
22	HDR – R	180 units	110 gpd/unit	19,800	150 gpd/unit	27,000

Table IV.N-2
Estimated Average Day and Peak Day Wastewater Generation for Project and Related Projects

Related Project No.	Land Use	Size (units) (square feet)	Average Daily Generation Rate*	Total Average Gallons Per Day (GPD)	Peak Daily Generation Rate	Total Peak Gallons Per Day (GPD)
		21,000 sf	70 gpd/1,000 sf	1,470	90 gpd/1,000 sf	1,890
23	HDR – R	118 units	170 gpd/unit	20,060	195 gpd/unit	23,010
24	HDR – CL	74 units	110 gpd/unit	8,140	150 gpd/unit	11,100
25	HDR	14 units	110 gpd/unit	1,540	150 gpd/unit	2,100
26	HDR – CG	339 units 28,205 sf	110 gpd/unit 150 gpd/1,000 sf	37,290 4,231	150 gpd/unit 280 gpd/1,000 sf	50,850 7,897
27	C	31 units	170 gpd/unit	5,270	195 gpd/unit	6,045
28	HDR	75 units	170 gpd/unit	12,750	195 gpd/unit	14,625
29	HDR – AH	460 units 31,000 sf	135 gpd/unit 150 gpd/1,000 sf	62,100 4,650	180 gpd/unit 280 gpd/1,000 sf	82,800 8,680
30	R	800 units 29,000 sf com. 30,000 sf confer.	110 gpd/unit 150 gpd/1,000 sf 70 gpd/1,000 sf	88,000 4,350 2,100	150 gpd/unit 280 gpd/1,000 sf 90 gpd/1,000 sf	120,000 8,120 2,700
31	HDR – RMF-1	14 units	170 gpd/unit	2,380	195 gpd/unit	2,730
32	IP	340 parking spaces	n/a	n/a	n/a	n/a
33	RMF-2	120 units	110 gpd/unit	13,200	150 gpd/unit	18,000
34	C	3,600 sf	150 gpd/1,000 sf	540	280 gpd/1,000 sf	1,008
35	R-OS	10,393 sf	n/a	n/a	n/a	n/a
36	HDR - RMF-1	10 units	110 gpd/unit	1,100	150 gpd/unit	1,500
37	I	10 units	110 gpd/unit	1,100	150 gpd/unit	1,500
38	R	3,400 sf	n/a	n/a	n/a	n/a
39	R	10 units	110 gpd/unit	1,100	150 gpd/unit	1,500
40	IP-PS	17,600 sf	150 gpd/1,000 sf	2,640	280 gpd/1,000 sf	4,928
41	RMF-1	10 units	170 gpd/unit	1,700	195 gpd/unit	1,950
			Related Projects Total	**458,911**		**619,128**
			Project Total	**135,440**		**189,723**
			Cumulative Total	**594,351**		**808,851**

Land Use Key:
sf = square feet
LDR-1 = Low-Density Residential 1
LDR-2 = Low-Density Residential 2
HDR-1 = High-Density Residential 1
HDR-2 = High-Density Residential 2
RSF = Residential Single Family
RMF = Residential Multi-Family RR = Rural Residential
C = Commercial
CG = Commercial General
IP = Institutional Public
R = Resort
I = Industrial
NVSP = North Village Specific Plan

Sources:
- *Town of Mammoth Lakes Development Tracking, Jen Daugherty, Assistant Planner, December 2006 and July 2007.*
- *General Plan Update DEIR Land Use Designations, http://www.ci.mammoth-lakes.ca.us, December 2006.*
- *MCWD Wastewater Generation Rates, July 2006.*
- *2006 Revised Snowcreek Master Plan WSA (Snowcreek VIII Project).*

Impact UTIL-3 Cumulative Wastewater Infrastructure

MCWD has identified deficiencies in the collection system that would be exacerbated by the Project and the related projects. The pipeline replacement work is currently scheduled to occur between 2010 and 2013, and MCWD has stated that the work must be done prior to full occupation of the Project area. MCWD developed future demand projections for the General Plan Update Draft EIR that resulted in plans for some infrastructure improvements. A sewer flow model of the entire collection system revealed several areas of inadequacy that will need to be addressed by upgrading existing sewer lines as well as installation of new sewer lines. The potential need for the related projects to require upgraded wastewater lines to accommodate wastewater generated by these projects is site-specific, and there is little, if any, cumulative relationship between the development of the Project and the related projects. In addition, the connection fees paid by individual applicants would help to pay for the necessary upgrades to the sewer collection pipelines described above. In consideration of the above, cumulative impacts related to wastewater infrastructure would be ***less than significant*** and no mitigation measures are required.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Project impacts to wastewater services would be ***less than significant***.

2. WATER SERVICES

ENVIRONMENTAL SETTING

As previously discussed, Mammoth Community Water District (MCWD) provides water and wastewater services to the Town and portions of United States Forest Service (USFS) lands. The MCWD serves the Town with a network of water pipelines that range from 2 to 12 inches in diameter. The amount of water available to the MCWD in any given year is linked to the precipitation (snowfall) received during the season of October through March as measured at Mammoth Pass. In the past thirty years, below average precipitation conditions have been experienced for 50 percent of those years. In 30 percent of the years, seasons with less than 70 percent of average precipitation have been experienced. Surface water availability is directly impacted by the amount of precipitation received in a season whereas impacts to groundwater sources are more gradual over a period of years. The greatest demand for water service occurs during the summer months when irrigation of residential landscaping takes place. October and November represent the lowest period of demand for service from the MCWD. The majority of the water demand on MCWD's system comes from residential uses.

The MCWD has water entitlements from Mammoth Creek for domestic uses, storage rights in Lake Mary, and operates eight groundwater production wells within the MCWD service area. The Town receives domestic water from MCWD from two primary sources: 50 percent from local surface water supplied by snowmelt water diverted from the Mammoth Creek watershed and 50 percent from Mammoth Basin watershed groundwater pumped from wells within the Town's boundaries.[14] The MCWD monitors its surface and groundwater sources to ensure that water supplies are not over-drafted. Surface water levels and flow rates are monitored at 12 locations throughout the Mammoth Basin watershed. Groundwater levels are monitored in the MCWD's eight production wells, as well as 15 shallow and deep monitoring wells. Production from the eight wells varies considerably in response to drought conditions and cycling of customer water demand, but overall trends show increased production over time.[15] The MCWD prepares an annual groundwater monitoring report that evaluates groundwater levels, surface flow and water quality. There is no claim or evidence that the groundwater basin is being over drafted.[16]

Regulatory Setting

Senate Bill (SB) 610 and SB 221

Senate Bill (SB) 610 and SB 221 amended State law in January 2002 to facilitate the exchange of water supply availability information during the planning processes of certain developments. SB 610, which requires water supply assessments (WSA) to be furnished to local governments for inclusion in the

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[14] *Town of Mammoth Lakes, http://www.ci.mammoth-lakes.ca.us/General%20Plan/DEIR.htm, CAJA staff, March 4, 2006.*

[15] *MCWD Recycled Water Project Final EIR, certified, March 15, 2007.*

[16] *Ibid.*

environmental documentation for certain projects, primarily relates to the California Water Code. SB 221 requires an affirmative written verification of sufficient water supply for the approval of certain projects. The WSA describes the relationship between projected demands on the Town's water supply and the availability of that supply under normal and dry years. The WSA is a comprehensive document, which is prepared to assist the Town Council in making decisions related to land use and is designed to assist in water supply planning efforts.

Section 10912(a) of the California Water Code defines seven types of projects which are subject to the mandates of SB 610, such as: (1) a proposed residential development of more than 500 dwelling units; (2) a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space, (3) a proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space; (4) a proposed hotel or motel, or both, having more than 500 rooms; (5) a proposed industrial, manufacturing or processing plant, or industrial park planned to house more than 650,000 square feet of floor area; (6) a mixed-use project that includes one or more of the projects specified in this subdivision; and (7) a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Urban Water Management Planning Act

As previously discussed, in accordance with the California Water Code 10610, also known as the Urban Water Management Planning Act (Act) of 1984, the MCWD adopted its 2005 UWMP in December. The Act states that the UWMP must be updated every five years to identify short-term and long-term water demand management in order to meet growing water demands during normal, dry and multiple dry years. The 2005 UWMP included the proposed development projected in the General Plan Update DEIR, of which the Project was included under the 1981 Master Plan. This is discussed in more detail under the Project Impacts analysis further below in this section.

Groundwater Management Act

In an effort to monitor groundwater availability and in accordance with Assembly Bill (AB) 3030, the Groundwater Management Act, MCWD adopted a Groundwater Management Plan (2005 GWMP) in July 2005.[17] AB 3030 provides local water agencies with procedures to develop a groundwater management plan so those agencies can manage their groundwater resources efficiently and safely while protecting the quality of supplies. Under AB 3030, the development of a GWMP by a local water agency is voluntary. However, once a plan is adopted, the rules and regulations contained therein must also be adopted to implement the program outlined in the plan. Information and analysis contained within the 2005 GWMP is based on previously published reports, conclusions of recent research and MCWD data compilations on hydrologic conditions, facility locations, and water production for the Mammoth Basin watershed.

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[17] *MCWD, http://www.mcwd.dst.ca.us/ProjectsReports/UWMP/UWMP2005.pdf, CAJA staff, March 4, 2006.*

Methodology

Since the Project would provide for the development of more than 500 dwelling units, a WSA is required as per SB 610. The Town formally requested a Water Supply Assessment (WSA) for the Project on December 18, 2006. The MCWD released a WSA (Project WSA) for the Project on January 23, 2007. The information and analysis in this section is based primarily on the Project WSA, as well as the 2005 UWMP, the 2005 GWMP, and other information provided by MCWD. General Plan policies related to water use are addressed in Section IV.I Land Use, in Table IV.H-2 for the 1987 General Plan, and Table IV.H-3 for the 2007 General Plan. With the exception of the Project WSA, which is in Appendix M to this Draft EIR, these documents are incorporated by reference and are all available from the Town of Mammoth Lakes, the Mammoth Community Water District, or via their respective websites.

EXISTING CONDITIONS

Water Supply & Availability

In accordance with the State Urban Water Management Planning Act, MCWD analyzed water supply in the 2005 UWMP by addressing availability of water during normal, single dry and multiple dry water years. Table IV.N-3 provides a breakdown of existing water supplies for surface and groundwater sources. Normal water years are based on a 10 percent deviation from an April 1st average snow pack of 43 inches or 38.7 to 47.3 inches. Normal water years historically have occurred every nine years. The base years for normal water years on which MCWD analyzes its data are: 1946, 1949, 1954, 1971, 1984, 1996 and 1997. According to the *Guidebook to Assist Water Suppliers in the Preparation of a 2005 UWMP,* a single dry year is "generally considered to be the lowest annual runoff for a watershed since the water-year beginning in 1903." The records for the Mammoth Basin begin in 1928 and the lowest April 1st snow water content, which generally equates to the runoff for the watershed occurred in 1977 with about 12 inches. This data was used in the 2005 UWMP to prepare projections for a single dry year where essentially no surface water would be available for MCWD to divert. Groundwater data for single dry water years is determined using the driest years for which the MCWD's production wells were in use: 1992 for wells 1, 6, 10 and 15; 2001 for wells 16, 17, 18, and 20. In addition, MCWD bases multiple dry years on the lowest average runoff for a consecutive, multiple year period (i.e., three years or more) since 1903. The driest multiple year period for the Mammoth watershed was the six years from 1987 to 1992, which averaged 28.7 inches of snow water content at Mammoth Pass.

Table IV.N-3
Existing Water Supply Reliability[1]

Supply	Normal Water Year	Single Dry Water Year	Multiple Dry Years			
			Year 1	Year 2	Year 3	Year 4
Projected Surface Water	2,760[2]	0	1,780	1,500	1,100	1,084
Projected Groundwater Wells	4,000[3]	3,410	3,410	3,408	3,408	3,408
Projected Total Supply	**6,760**	**3,410**	**5,190**	**4,908**	**4,508**	**4,492**

[1] Units of measure are acre-feet (af) per year. An af equals approximately 325,829 gallons.
[2] Total MCWD is "entitled" to. This amount has been used by MCWD.
[3] Total MCWD has a "right" to. This amount has been used by MCWD.

Note: While MCWD currently has surface water rights that total a maximum of 2,760 acre-feet annually, the bypass flow requirements that MCWD operates under have not been permanently established and the final bypass requirements that are eventually established could potentially result in less surface water being available to MCWD. In addition, the volume of groundwater noted in this table is the maximum amount of groundwater that MCWD has projected to pump in any given year and does not necessarily represent the safe yield of the aquifer.

Source: MCWD SB 610 WSA for the 2006 Revised Snowcreek Master Plan (Snowcreek VIII Project).

Surface Water

The MCWD is currently entitled, through two licenses and one permit, to divert 2,760 acre-feet per year (afy) from Lake Mary at a maximum diversion rate of 5 cubic feet per second (cfs) from November 2nd to April 30th and 5.039 cfs from May 1st to November 1st. Surface water is delivered from Lake Mary to the MCWD water system through a 10-inch pipeline along Lake Mary Road. Surface water storage rights are limited to 660 acre-feet (af) annually, of which 606 af may be collected between April 1st and June 30th, and 54 af may be collected between September 1st and September 30th of each year. The MCWD is also limited to a maximum drawdown in Lake Mary of 3.0 feet during the period between June 1st and September 15th, and a total maximum annual drawdown of 5.7 feet. Recent improvements to the Lake Mary surface water treatment plant allow MCWD to utilize the full 2,760 af permitted in normal and wet precipitation conditions. The volume of surface water in normal years is based on the maximum volume of water available through MCWD's surface water rights. However, the volume of surface water in multiple dry years is based on the actual surface water that could have been available in 1992, the last year of a six-year drought.[18]

Since MCWD's diversion facilities are located on USFS land, it has authority over MCWD water operation activities through a Master Operation Agreement (MOA) developed in 1977. The MOA provides terms for instream flow requirements that are designed to protect aquatic species in Mammoth Creek. Additionally, the amount of water that MCWD may store or divert is influenced by the bypass

[18] *MCWD, http://www.mcwd.dst.ca.us/ProjectsReports/UWMP/UWMP2005.pdf, CAJA staff, March 4, 2006.*

flow requirements in Mammoth Creek that are included as part of MCWD's water rights. MCWD measures Mammoth Creek flows at its Old Mammoth Road gage located near Mammoth Creek Park. MCWD is only allowed to directly divert natural flows entering Lake Mary and divert natural flows to storage when the flows, as measured at the Old Mammoth Road gage, exceed the bypass flow requirements. When the flows at MCWD's Old Mammoth Road gage are equal to or less than the bypass flow requirements, no water may be directly diverted or diverted to storage, and MCWD must bypass all incoming flows to Lake Mary.

MCWD is second to the City of Los Angeles Department of Water and Power (LADWP) for being the largest diverter of Mammoth Creek water. LADWP exercises its rights to divert 440 afy upstream of U.S. Highway 395, and 4,400 afy downstream of U.S. Highway 395 in the Chance Meadows area, to be used for grazing purposes. However LADWP's water rights are older and do not include instream flow requirements.[19]

While MCWD must currently operate under the bypass flow requirements, there is potential for these requirements to become modified. MCWD is currently preparing an EIR that evaluates the environmental effects of the proposed bypass flow requirements for Mammoth Creek. The outcome of the Mammoth Creek EIR and the resulting decision by the State Water Resources Control Board could modify the existing temporary bypass flows to a different regime that could result in less surface water being available to MCWD. Surface water supply volumes used in the preparation of the Project WSA assumed that the existing bypass flow requirements will remain as they are currently established. Potential reductions in surface water supplies in the future are a possibility, but the amount of these reductions is currently unknown.[20]

Groundwater

The 2005 GWMP describes a monitoring and operation plan for the long-term use of local groundwater and surface water resources. The intent of the 2005 GWMP is to ensure that groundwater resources are managed in a manner that ensures sufficient, high quality groundwater resources while minimizing potential environmental impacts. The MCWD pumps groundwater from the Mammoth Basin watershed, which is located within the Long Valley Groundwater Basin identified by the California Department of Water Resources (DWR) as part of the South Lahontan Hydrologic Region. Mammoth Basin is the watershed of Mammoth Creek and is bounded on the south by the drainage divide of Convict Creek; on the west by the Mammoth Crest; on the north by the drainage divide of Dry Creek; and on the east extending along the watershed of Hot Creek. The area of the Mammoth Basin is about 71 square miles and extends approximately 13 miles west to east and nine miles north to south.

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[19] *CH2M Hill, 2000 Draft EIR for the Proposed Changes for Mammoth Creek Instream Flow Requirements, Point of Measurement, and Place of Use.*

[20] *MCWD SB 610 WSA for the 2006 Revised Snowcreek Master Plan (Snowcreek VIII Project).*

The Mammoth Basin has not been adjudicated or identified by DWR as being overdrafted. Groundwater is pumped from eight production wells located within the MCWD's service area. According to the 2005 GWMP, groundwater may not be extracted at a rate greater than 4,000 afy.[21] During the past five year period (2002 to 2006), MCWD pumped 10,327 af of groundwater, averaging 2,065 afy. As shown in Table IV.N-4, the maximum volume pumped occurred in 2002 and amounted to 2,719 af. When precipitation is lower than normal the use of groundwater is increased, as less surface water supply is available. Production volumes of groundwater in any one year are dependent on the type of precipitation year experienced and consequent availability of surface water. During dry-year periods, groundwater levels within the Mammoth Basin decrease due to increased pumping and less recharge. During normal and above-normal precipitation years, groundwater levels increase and tend to fully recover after two years of normal precipitation.

Table IV.N-4
Annual Volumes[(1)] of Groundwater Pumped

Well No.	2002	2003	2004	2005	2006
1	132	184	71	188	297
6	184	454	347	554	1
10	1086	602	500	577	135
15	592	807	381	244	390
16	141	107	239	55	0
17	310	172	138	100	229
18	77	114	58	226	1
20	196	80	187	167	13
Total Acre-Feet	**2,719**	**2,520**	**1,921**	**2,111**	**1,066**

(1) Units of measure are acre-feet per year. An acre-foot equals approximately 325,821 gallons.
Note: Groundwater pumpage reflects the metered amount of water pumped from individual wells, which tends to vary slightly from the flow measured through the treatment plants.
Source: MCWD SB 610 WSA for the 2006 Revised Snowcreek Master Plan (Snowcreek VIII Project).

Snowcreek Master Plan Water Rights

The Snowcreek Golf Course has reserved water rights, as do the development parcels, as summarized below. These reservations and grants are found in the Arcalarius/MCWD Settlement Agreement of May 1977, the MCWD/Dempsey Agreement of August 1983, the MCWD/Dempsey Agency Agreement of August 1983, and the grant deed from the United States to Dempsey for the new nine-hole parcel.

The new nine-hole golf course parcel acquired in the 2005 Land Exchange with the USFS retains all the surface and groundwater rights that run with the conveyance of the land. There has been no conveyance of these water rights to MCWD.

The existing nine-hole golf course parcel has an expressly reserved groundwater right for a well, not to be located within 2,000 feet of an MCWD well, for production up to 450 gallons per minute. This right

[21] *4,000 afy is the maximum amount of groundwater projected to pump in any given year and does not necessarily represent the safe yield of the aquifer.*

exists for the purpose of maintaining the aesthetic and open space appearance (which had the golf course use in mind at the time this use was described).

Snowcreek predecessor owners expressly conveyed in trust, and appointed MCWD as exclusive agent, all riparian and overlying rights of the Property (all of the original Snowcreek Master Plan property annexed into the Town), solely for the use and benefit of the Property and successor owners of the Property.

Snowcreek predecessor owners conveyed outright to MCWD all other water rights held.

Fire Flow

In addition to supplying water for domestic uses, MCWD also supplies water for fire protection services, in accordance with Mammoth Lakes Fire Protection District (MLFPD) requirements, also discussed in Section IV.I. 1.(Public Services). Fire flow requirements are closely related to land use as the quantity of water necessary for fire protection varies with the type of development, life hazard, type and level of occupancy, and degree of fire hazard (based on such factors as building age or type of construction). The MLFPD-established fire flow requirements vary from 1,500 gpm in low density residential areas and 2,000 gpm high density residential to 2,500 gpm in commercial areas for two hours. Additionally, for high-rise construction, MLFPD requires a pressure of 100 pounds per square inch (PSI) at the roof. In any instance, a minimum residual water pressure of 20 PSI is to remain in the water system while the required gpm is flowing. According to MCWD, the system pressures in the Project area range from 100 to 110 PSI, meeting their goal of 50 to 150 PSI for fire protection purposes.[22]

Local Water Infrastructure

The MCWD serves the Town with a network of water pipelines that range from 2 to 12 inches in diameter. The water pipelines are constructed of either steel, ductile iron pipe (DIP), or polyvinyl chloride (PVC). The existing water pipelines in the area are 8" and 10" DIP. Figure IV.N-1, previously shown, represents the existing water lines for the Project area.

Water Treatment

In 2004, MCWD completed modifications to the Lake Mary surface water treatment plant to meet new standards of the California Department of Health Services. As a result of these modifications, the production capacity of the plant is now rated at the 5 cfs diversion rate allowed in the water rights permit. These improvements have enabled MCWD to utilize the full 2,760 af of water available from its state water right permits in normal and wet precipitation conditions.[23]

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[22] *Email correspondence Ericka Hegeman, MCWD on February 6, 2007.*

[23] *MCWD, http://www.mcwd.dst.ca.us/UWMP/UWMP2005.pdf, CAJA staff, March 4, 2006.*

Projected Water Demand

The majority of the water demand on MCWD's system comes from residential uses; with 30 percent from condominiums, 18 percent single family units, and 4 percent multifamily units.[24] The total water demand in 2005 amounted to 3,423 af. This value includes golf course irrigation, system use, and unaccounted for water. Table IV.N-5 shows the past, current, and projected future water demands.

Table IV.N-5
Past, Current, and Projected Water Use[(1)]

Water Use Sector	2000	2005	2010	2015	2020	2025
Single Family Residential	515	549	586	623	659	696
Condominium	961	948	960	973	985	997
Multi-Family Residential	144	140	211	282	353	424
Commercial/Industrial and Public	217	257	374	469	565	660
Motel / Hotel	112	111	304	496	689	881
Public Sector	170	296	n/a[(4)]	n/a[(4)]	n/a[(4)]	n/a[(4)]
Golf Course[(2)]	297	263	400	400	400	400
Other[(3)]	53	107	80	80	80	80
Unaccounted	486	752	760	760	760	760
Total	**2,955**	**3,423**	**3,674**	**4,082**	**4,490**	**4,898**

[(1)] Units of measure are acre-feet (af) per year. An af equals approximately 325,821 gallons.
[(2)] Golf course water use is based on existing demand from Sierra Star and Snowcreek golf courses.
[(3)] Other = treatment plant process water, fire fighting, line cleaning, etc.
[(4)] Public Sector is included in commercial for future projections for consistency with the Town's General Plan Update Draft EIR (2005).
Note: Existing hotel/motel water-use includes those units that are separately metered and does not include units that share water meters with commercial. Commercial includes mixed uses such as restaurants, condo/hotel, retail, etc. Groundwater data in this table is based upon metered flows from the MCWD's groundwater treatment plants, which varies slightly from amounts measured from individual wells.
Source: 2005 Urban Water Management Plan

When projected future water demand estimates are compared with current supply data, it is projected that water supply deficiencies would occur after a single dry year and in multiple year drought conditions. Table IV.N-6 compares current supply and future demands in normal, single dry and multiple dry years, without the Project. Table IV.N.6 illustrates that shortfalls in supply would occur if MCWD were to continue to utilize existing water supplies to meet demands at build-out of the community without the Project. Deficiencies of over 1,000 af would occur in a single dry year without the Project.

[24] *MCWD, http://www.mcwd.dst.ca.us/UWMP/UWMP2005.pdf, CAJA staff, March 4, 2006.*

Table IV.N-6
Current Supply and Demand Without Project[(1)]

Current Supply			Multiple Dry Water Years			
	Average Normal Water Year	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
Supply Total	6,760	3,410	5,190	4,908	4,508	4,492
Demand Total (without Project)	4,669	4,669	4,669	4,669	4,669	4,669
Difference (without Project)	**2,091**	**-1,259**	**521**	**239**	**-161**	**-177**

(1) Units of measure are acre-feet (af) per year. An af equals approximately 325,8219 gallons.
Source: MCWD SB 610 WSA for the 2006 Revised Snowcreek Master Plan (Snowcreek VIII Project).

Additional Sources of Water

California Water Code 10911 requires that if, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies. Since existing supplies are insufficient and result in a shortfall in single dry years, MCWD has developed the following plans regarding implementation of water conservation measures, use of recycled water, and development of new supplies.

Future Groundwater

MCWD has identified groundwater as being a significant source of future water supplies for the community. Groundwater would be extracted from either the Mammoth Basin watershed or the Dry Creek Basin watershed to the north of the Mammoth Basin. Additional groundwater production wells in the Mammoth Basin would require environmental review and hydrogeologic analysis to ensure that additional volumes of water can be safely extracted. Well development in the Dry Creek Basin would also require environmental review and hydrogeologic analysis prior to utilizing this water source. Overall, depending upon supplies needed, about 1,000 af of additional groundwater supplies may be developed in the future from either the Mammoth Basin watershed or the Dry Creek watershed. Volumes of groundwater projected to be available from the Dry Creek watershed are estimated at 1,500 afy during normal years and 1,245 afy during multiple dry year periods.[25]

As shown in the Project WSA, although groundwater supplies are supplemented with surface water and MCWD may be supplementing existing well supplies with additional production wells in the future, the volume of groundwater currently available from existing wells is insufficient to meet the total demand under multiple dry-year conditions as the community nears build-out in 2025. A study conducted for

[25] *MCWD SB 610 WSA for the 2006 Revised Snowcreek Master Plan (Snowcreek VIII Project), page 22.*

MCWD indicated that a total volume of 3,800 afy could be pumped from the Mammoth Basin during a three-year dry period.[26]

Future Recycled Water

MCWD currently supplies untreated groundwater for irrigation of the existing nine-hole Snowcreek Golf Course and the Sierra Star Golf Course, and supplies potable water to Shady Rest Park. MCWD has supplied untreated groundwater for irrigation of the existing nine-hole Snowcreek Golf Course over the past seven years, averaging about 85 afy.

As described briefly in the Wastewater Section, MCWD has identified the use of recycled water as a potential source of water supply for golf course and park irrigation. The source of supply would come from the wastewater treatment plant (WWTP). Although the WWTP currently produces recycled water, there are some upgrades necessary to meet current State Department of Health standards. Parallel recycled water pipelines would be installed from the WWTP to the Sierra Star Golf Course and the existing nine-hole Snowcreek Golf Course and possibly the expanded additional nine-holes for the Snowcreek Golf Course. A third pipeline would be installed from the WWTP to Shady Rest Park. MCWD certified the final Recycled Water Project EIR at its March 15, 2007 meeting. The Recycled Water Project is anticipated to be complete by the summer of 2010. The Recycled Water Project would provide the capability to produce 1.55 mgd of recycled water per year.

Since golf course irrigation consists of approximately 12 percent of water use currently; along with nine percent used for parks and public facility irrigation[27]; the availability of recycled water to be used instead of potable water would substantially help the Town meet existing and future water supply needs. In addition, potable water supplied to Shady Rest Park over the past four years averaged about 30 afy. Overall, it is anticipated that the amount of potable water that could be made available through the implementation of the Recycled Water Project is approximately 400 afy. However, depending upon customer demands, the Recycled Water Project could potentially supply approximately 550 afy to large turf irrigators in the community during the summer irrigation season.[28]

Future Conservation

In 1992, MCWD implemented water restrictions that included limiting landscape irrigation to three days per week. This restriction resulted in an average reduction in water demand of 25 percent for the irrigation period of June through September. Projections of available water supply are prepared each year after final snowpack measurements are made on April 1st. At that time, if projections indicate possible water supply insufficiencies, MCWD's Board of Directors may declare the existence or threatened

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[26] *"Investigation of Groundwater Production Impacts on Surface Water Discharge and Spring Flow", Wildermuth Environmental, Inc. November 2003.*

[27] *MCWD, http://www.mcwd.dst.ca.us/ProjectsReports/UWMP/UWMP2005.pdf, CAJA staff, February 5, 2007*

[28] *MCWD SB 610 WSA for the 2006 Revised Snowcreek Master Plan (Snowcreek VIII Project).*

existence of a drought and may then implement any level of restrictions as deemed necessary. At build-out of the community under the General Plan Update Draft EIR, the projected savings from implementation of water conservation measures amounts to about 500 afy.

Future Water System Loss Reduction

MCWD has been implementing an aggressive main water pipeline replacement program to replace old leaking water pipes since 2001. Over the past several years, an average of 10,000 feet of pipeline per year has been replaced. It is estimated that replacement of all of the existing old pipelines in the entire system will occur over the next eight-year period. As a result of the completion of this replacement work, MCWD hopes to achieve a reduction in water loss within the system of approximately 300 af.

Table IV.N-7 summarizes the new sources of water potentially available to assist in resolving water supply deficiencies.

Table IV.N-7
Future Water Supplies

Project Name	Demand Reduction	Supply Increase	Projected Completion Date
New groundwater development		1,000 af (or amount needed to meet demands)	As needed
Recycled Water Project		400 af	2010
Water Conservation with irrigation restriction enforced	500 af (at build out)		n/a
Water Pipeline Replacement 10-15% loss rate goal	300 af (at build out)		Ongoing, full implementation anticipated by 2011
Total	**800 afy**	**1,400 afy**	

Source: MCWD SB 610 WSA for the 2006 Revised Snowcreek Master Plan (Snowcreek VIII Project).

Table IV.N-8 provides a breakdown of existing water supplies for surface and ground water, plus recycled water and water from future wells.

Table IV.N-8
Existing Water Supply Reliability Plus 2025 Future Water Sources[1]

Supply	Normal Water Year	Single Dry Water Year	Multiple Dry Years			
			Year 1	Year 2	Year 3	Year 4
Projected Surface Water	2,760[2]	0	1,780	1,500	1,100	1,084
Projected Groundwater Wells	4,000[3]	3,410	3,410	3,408	3,408	3,408
Future Groundwater	1,000	1,000	1,000	1,000	1,000	1,000
Future Recycled Water	360	360	360	360	360	360
Projected Total Supply	**8,120**	**4,770**	**6,550**	**6,268**	**5,868**	**5,852**

[1] Units of measure are acre-feet (af) per year. An af equals approximately 325,829 gallons.
[2] Total MCWD is "entitled" to. This amount has been used by MCWD.
[3] 4,000 afy is the total MCWD has a "right" to. This amount has been used by MCWD.

Note: While MCWD currently has surface water rights that total a maximum of 2,760 af annually, the bypass flow requirements that MCWD operates under have not been permanently established and the final bypass requirements that are eventually established could potentially result in less surface water being available to MCWD. In addition, the volume of groundwater noted in this table is the maximum amount of groundwater that MCWD has projected to pump in any given year and does not necessarily represent the safe yield of the aquifer.

Source: MCWD SB 610 WSA for the 2006 Revised Snowcreek Master Plan (Snowcreek VIII Project).

ENVIRONMENTAL IMPACTS

Thresholds of Significance

In accordance with Appendix G to the *CEQA Guidelines*, the Project could have a significant environmental impact if it would:

(a) require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant effects; or

(b) have insufficient water supplies available to serve the project from existing entitlements and resources, or would require new or expanded entitlements.

Water Services Issues Not Analyzed Further

In 2004, MCWD completed modifications to the Lake Mary surface Water Treatment Plant (Plant) to meet new standards of the California Department of Health Services. As a result of these modifications, the production capacity of the Plant is now rated at the 5 cfs diversion rate allowed for in the water rights

permit.[29] These improvements have enabled MCWD to utilize the full 2,760 af of water available from its state water right permits in normal and wet precipitation conditions.[30] The Project would receive a mixture of treated surface water from the Lake Mary Water Treatment Plant, and treated groundwater from Groundwater Treatment Plant No. 1, located off Old Mammoth Road near Snowcreek Athletic Club.[31] According to MCWD, these two treatment plants have sufficient treatment capacity to serve the Project's demand for water. It is also possible that groundwater from Groundwater Treatment Plant No. 2 at the corner of Majestic Pines Drive and Meridian Boulevard could supply the Project area occasionally.[32] As such, the increased demand for water services generated by the Project would not result in the need for a new or expanded water treatment facility to be constructed. Therefore, ***no impact*** would occur, and no further analysis of this issue is required.

Project Impacts and Mitigation Measures

The 2005 UWMP included proposed development associated with the Town's General Plan Update Draft EIR. While the current updates to the Town General Plan are an ongoing process, the General Plan Update Draft EIR represents the best, most current information regarding potential future development in the community. For this reason, MCWD included the unit counts in the General Plan Update Draft EIR dated October 2005 in the preparation of its 2005 UWMP. In addition, as explained in detail in Section III (Project Description), approval of the 1981 Master Plan allowed for the construction of a total of 2,368 units, with 1,223[33] units remaining to be constructed (refer to Table III-1 and Figure III-1). Therefore, since the 1981 Master Plan was included both in the Town's General Plan Update Draft EIR and in the 2005 UWMP, it can be assumed that the development figures used to prepare the 2005 UWMP included the Project. Thus, according to Water Code section 10910 (c) (2), the analysis of water demand for the Project may be incorporated from the UWMP.

Impact UTIL-5 Water Supply

The Project proposes the development of 1,050 dwelling units and up to 75,000 square feet for non-residential uses. According to the United States Census Bureau's Census 2000 data, the Project is anticipated to generate 2.44 persons per household, which could result in approximately 2,562 new residents.[34] This is a conservative estimate due to the fact that the Project's proposed households would not likely be occupied year round. As such, the demand for domestic water in the Town would increase

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[29] *MCWD, http://www.mcwd.dst.ca.us/ProjectsReports/UWMP/UWMP2005.pdf, CAJA staff, March 4, 2006.*

[30] *Ibid.*

[31] *Hegeman, Ericka, Public Affairs and Environmental Specialist, Mammoth Community Water District, telephone conversation with CAJA staff, May 10, 2007.*

[32] *Hegeman, Ericka, Public Affairs and Environmental Specialist, Mammoth Community Water District, email correspondence CAJA staff, February 8, 2007.*

[33] *The Project is proposing the development of 1,050 dwelling units, resulting in 173 less dwelling units than the development projected under the 1981 Master Plan.*

[34] *United States Census Bureau's Census 2000 data uses 2.44 persons per household.*

as a result of the Project. Given the fluctuations characteristic of the Town's tourism pattern, the majority of the proposed residential units and commercial uses are likely to be occupied seasonally rather than on a year-round basis and therefore would not use water over the course of an entire year. Table IV.N-9 represents the water generation rates analyzed for average day and peak day flows. Additionally, it should be noted that at the time of the Project WSA was prepared, MCWD was not proposing to service the Outfitters' Cabin (1,700 sq ft) located at the far eastern boundary of the Project site, near the base of Sherwin Range. However, it has since been determined that MCWD can provide water services to the Outfitters' Cabin through a separate agreement. MCWD determined that the nominal volume of water needed, approximately 0.3 afy, to supply the restroom and ancillary needs for the Outfitters' Cabin is available and would be provided through a separate agreement for MCWD customers located outside of the MCWD service area.[35]

Based on the methodology described above, as indicated in Table IV.N-9, the Project's estimated average water demand is approximately 204,152 gpd (229 afy) and the peak water demand is 316,133 gpd (354 afy).[36] According to the existing water supply available to the MCWD (refer to Table IV.N-3 above) there is sufficient water supply at average and peak times in both normal and multiple dry years for the Project. Thus, Project impacts to water use within the Town would be considered ***less than significant*** and no mitigation measures are required.

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[35] *Sisson, Gary, General Manager, Mammoth Community Water District, written correspondence CAJA staff, February 2, 2007. This letter is included in Appendix L of this Draft EIR.*

[36] *The Project WSA did not calculate peak water use. The generation rates as shown in Table IV.N-6 are based on estimates provided by MCWD.*

Table IV.N-9
Project Estimated Water Demands

Unit Type	Size	Average Daily Generation Rate*	Total Average Gallons Per Day (GPD)	Peak Daily Generation Rate*	Total Peak GPD
RESIDENTIAL	**Dwelling Units (du) / Hotel Rooms**				
Homes (Condominiums)	850 du	170 gpd/unit	144,500	295 gpd/unit	250,750
Hotel Rooms/Suites & Private Residence Club (PRC)/suite units	400[(1)] rooms	100 gpd/unit	40,000	105 gpd/unit	42,000
NON-RESIDENTIAL	**Square Feet (sf)**				
Old Mammoth Commercial					
Market/General Store	3,500	12.8 gpd/1,000 sf	45	100 gpd/1,000 sf	350
Natural Resources & Historic Interpretive Center	900	50 gpd/1,000 sf	45	100 gpd/1,000 sf	90
Hotel					
Spa/Wellness Center	12,900	435 gpd/1,000 sf	5,612	514 gpd/1,000 sf	6,631
Retail	10,000	150 gpd/1,000 sf	1,500	280 gpd/1,000 sf	2,800
Restaurant/Bar/Lounge	10,000	580 gpd/1,000 sf	5,800	685 gpd/1,000 sf	6,850
Conference/Meeting Space	25,000	70 gpd/1,000 sf	3,125	90 gpd/1,000 sf	2,250
Golf Pro Shop	3,000	15 gpd/1,000 sf	45	100 gpd/1,000 sf	300
Resident's Club	8,000	435 gpd/1,000 sf	3,480	514 gpd/1,000 sf	4,112
Outfitters' Cabin[(2)]	1,700	n/a	n/a	n/a	n/a
		Total Water Demands	**204,152**		**316,133**

[(1)]Hotel would accommodate 250 guest rooms/suites (125 dwelling units) and 150 Private Residence Club (PRC) suite rooms (75 dwelling units); total 400 rooms/suites. Under Town Code a hotel room/suite or private residence room equals ½ of a unit, thus the 400 Hotel rooms/suites equates to 200 dwelling units.
[(2)]The Outfitters' Cabin is outside of the MCWD service area, however, it has since been determined that MCWD can provide water services to the Outfitters' Cabin through a separate agreement.
** Calculated from 36 months of usage.*
1 acre foot = 325,851 gallons
Source: 2006 Revised Snowcreek Master Plan WSA (Snowcreek VIII Project) and July 2006 Generation Rates from MCWD.

Because the Project would not result in any significant impacts related to water service, no mitigation measures are required. However, to further reduce the Project's demand on water services, the following measures are recommended:

Mitigation Measure UTIL-5a Water Supply

The applicant should ensure that the landscape irrigation system be designed, installed and tested to provide uniform irrigation coverage. Sprinkler head patterns shall be adjusted to minimize over spray onto walkways and streets.

Mitigation Measure UTIL-5b Water Supply

The applicant should install either a "smart sprinkler" system to provide irrigation for the landscaped areas or, at a minimum, set automatic irrigation timers to water landscaping during early morning or late evening hours to reduce water losses from evaporation. Irrigation run times for all zones shall be adjusted seasonally, reducing water times and frequency in the cooler months (fall, winter, spring). Sprinkler timer run times shall be adjusted to avoid water runoff, especially when irrigating sloped property.

Mitigation Measure UTIL-5c Water Supply

The applicant should select and use drought-tolerant, low-water consuming plant varieties to reduce irrigation water consumption.

Mitigation Measure UTIL-5d Water Supply

The applicant should install low flush water toilets and urinals and shall limit the number of showerheads to one high efficiency fixture per stall, in new construction. Low-flow faucet aerators should be installed on all sink faucets.

Mitigation Measure UTIL-5e Water Supply

The applicant shall be subject to the provisions of a recycled water ordinance adopted by the Town pursuant to Article 10.9, beginning with Section 65601 of the Government Code, and titled Water Recycling in Landscaping Act (Act) at such time as the Town is notified by the Mammoth Community Water District of the future availability of recycled water, at costs reasonably competitive with the costs of untreated groundwater. In addition, the Snowcreek Master Plan shall include a provision that, for all projects constructed or approved prior to the notice, the applicant shall use their best efforts to use recycled water consistent with the Town, the Act, and water district policy.

In addition to using recycled water, untreated well water may be used for irrigation of the golf course expansion (Areas E2, E4, and F) area. At this time, mitigation requirements for the use of recycled water or untreated well water have not been determined. However, if recycled water or untreated well water is used for irrigation, options shall be explored to limit recycled water or untreated well water from entering the tributary area that flows toward Mammoth Creek. Mitigation measures for the use of reclaimed water or untreated well water are specifically described in Section IV.G, Hydrology in Mitigation Measure HYD-1, but could include increasing the capacity of on-site retention for the Golf course areas irrigated with recycled water or well water to include capacity for a storm of 100 year intensity and grading southeasterly limits of the golf course expansion area in some locations to block tributary drainage from the south and direct it east toward Sherwin Creek Road.

Mitigation Measure UTIL-5f Water Supply

The applicant should install Energy Star dishwashers, clothes washers, and refrigerators.

Impact UTIL-6 Water Infrastructure:

The Project includes installation of water infrastructure within the Project site to convey water from the existing MCWD water lines to usage points within the Project. However, design plans for this internal Project water supply distribution system are not complete at this time. Figure IV.N-1, shown previously, illustrates the existing water infrastructure that serves the Project area. According to MCWD, areas of potential deficiency have been identified in water lines in the Project area depending on where the Project would connect with existing water lines. The applicant would be responsible for all costs associated with the installation of water infrastructure on the Project site and the connection fees paid to MCWD for the Project would help to pay for the necessary upgrades to the MCWD's water pipelines described above. In consideration of the above, Project impacts related to wastewater infrastructure would be ***less than significant*** and no mitigation measures are required.

CUMULATIVE IMPACTS

Impact UTIL-7 Cumulative Water Supply

Implementation of the Project in combination with the related projects in Table II-1 would further increase demands on water supply and conveyance infrastructure. With respect to the Town's overall water supply condition, the water supply requirements for any project that is consistent with the Town's General Plan Update Draft EIR have been taken into account in the planned growth of the water system in the 2005 UWMP. According to the Town, all of the related projects are generally consistent with their respective land use designations. The MCWD has developed an expected total water demand for the Town of 4,898 afy at Town buildout utilizing the unit counts projected in the Town of Mammoth Lakes General Plan Update DEIR (October 2005), including the related projects as presented in Table II-1 and Table IV.N-2. As discussed previously and illustrated in Table IV.N-6, there would be insufficient supplies of water during dry years at Town buildout without the Project. Consequently, as shown in Table IV.N-10, there would also be insufficient water for the Project plus the related projects during dry water years. Deficiencies of over 1,000 af would occur in a single dry year, which is considered the lowest historical runoff for the watershed. Thus, impacts of the Project together with the related projects on overall MCWD water supply during single and multiple dry year scenarios would be ***significant.***

Table IV.N-10
Existing Water Supply
Comparison of Current Supply and Demand With Project Plus Related Projects[(1)]

Current Supply			Multiple Dry Water Years			
	Average/ Normal Water Year	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
Supply Total	6,760	3,410	5,190	4,908	4,508	4,492
Cumulative Demand Total	4,898	4,898	4,898	4,898	4,898	4,898
Difference	**1,862**	**-1,488**	**292**	**10**	**-390**	**-406**

(1) Units of measure are acre-feet (af) per year. An af equals approximately 325,821 gallons.
Source: MCWD SB 610 WSA for the 2006 Revised Snowcreek Master Plan (Snowcreek VIII Project).

As stated previously, MCWD is working to develop new groundwater sources, use recycled water, and implement water restrictions as a means to increase supplies to resolve any potential water supply deficiencies during drought periods. However, even with full implementation of these various water supply projects, it is expected that insufficient water would be available to meet projected demand during a single dry year (refer to Table IV.N-11 below). Therefore, because these future water sources do not exist at present the Project's contribution to overall water supply demand within the Town would be cumulatively considerable, and cumulative water supply impacts would be ***significant***. Implementation of the following mitigation measure would help to reduce the significant cumulative water supply impacts, however cumulative water supply impacts would remain ***significant***.

Mitigation Measure UTIL-7

The Town shall not approve new development applications that would result in a water demand in excess of available supplies as determined by the Mammoth Community Water District. The Town shall work with Mammoth Community Water District to ensure that development projects include phased demand increases so that the development of necessary additional water supply sources is established prior to respective development demand occurring.[37]

[37] *This mitigation measure shall be made a policy of the 2007 General Plan. FPEIR General Plan Update May 2007, page 4-286.*

Table IV.N-11
2025 Future Water Sources
Comparison of Supply and Demand With Project Plus Related Projects[1]

2025 Supply			Multiple Dry Water Years			
	Average/ Normal Water Year	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
Supply Totals	8,120	4,770	6,550	6,268	5,868	5,852
Cumulative Demand Totals	4,898	4,898	4,898	4,898	4,898	4,898
Difference	**3,222**	**-128**	**1,652**	**1,370**	**970**	**954**

Units of Measure: acre-feet (af) per year.
Note: The supply totals on this table assume 1,000 af of future groundwater well water and 360 af of recycled water would be utilized in normal water years.
Source: 2006 WSA Revised Snowcreek Master Plan (Snowcreek VIII Project).

Impact UTIL-8 Cumulative Water Infrastructure

Mammoth Community Water District (MCWD) has identified deficiencies in the water lines that serve the Project area that, depending on where the Project connects with existing water lines, could be exacerbated by the Project and the related projects. The pipeline replacement work is currently scheduled to occur between 2010 and 2013, and MCWD has stated that the work must be done prior to full occupation of the Project area. MCWD has developed future demand projections for the General Plan Update Draft EIR that resulted in plans for some infrastructure improvements. The potential need for the related projects to require upgraded water lines to accommodate their water demands requires site-specific evaluation and there is little, if any, cumulative relationship between the development of the Project and the related projects. In addition, the connection fees paid by individual applicants would help to pay for the necessary upgrades to the water lines described above. In consideration of the above, cumulative impacts related to water infrastructure would be ***less than significant*** and no mitigation measures are required.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Project impacts to water services would be ***less than significant*** and although implementation of the recommended mitigation listed above would reduce the Project's contribution to overall cumulative impacts, the cumulative impacts would remain ***significant and unavoidable***.

At this time, the specifics of system-wide improvements needed to provide adequate water supplies to meet cumulative water demand during single and multiple dry year scenarios are unknown since the Final EIR for the Mammoth Creek Project that will specify water amounts available to MCWD has not been certified. In addition, new or expanded groundwater production wells in the Mammoth Basin would require environmental review and hydrogeologic analysis to ensure that additional volumes of water can be safely extracted. Well development in the Dry Creek Basin would also require environmental review and hydrogeologic analysis. Until these analyses are complete and specific projects have been approved to supplement MCWD's existing water supply, cumulative impacts associated with the Project and related projects would remain ***significant and unavoidable.***