APPENDIX C
EXISTING FACILITIES AND PROJECTED GROWTH

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1 Existing Development

1.1 SERVICE AREA

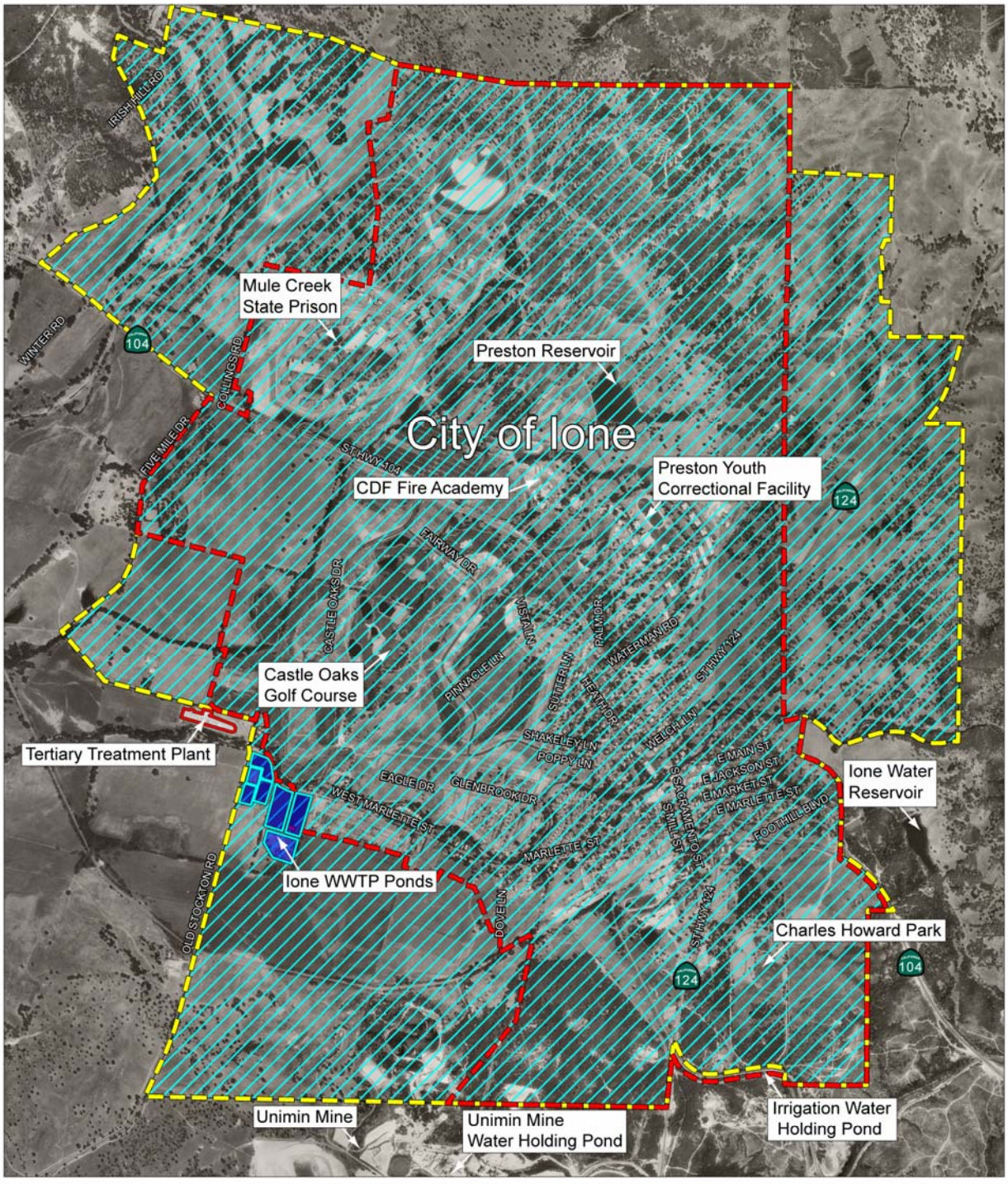
The City of Ione's wastewater service area is divided by Sutter Creek with approximately 450 acres on either side of the Creek, as shown in Figure 1-1. The served community consists of a resident population of approximately 3,567 and a small number of commercial customers. The main section of "Old" Ione is located generally east of the wastewater treatment plant (WWTP) and south of Sutter Creek. The wastewater service area consists primarily of residential uses, as well as the main commercial area of the City, including retail shops, restaurants, and City Hall. No wet industries or commercial enterprises producing industrial-type wastes are currently connected to the system.

The Amador Water Agency (AWA) Ione Treatment Plant also contributes a substantial amount of filter backwash water to the Ione sewer system, accounting for approximately 15 to 20 percent of the City of Ione's municipal wastewater flow. This AWA backwash water flow was measured at 62,000 gallons per day in 2007. However, the volume of flow has recently decreased to approximately 30,000 gallons per day due to improvements in raw water quality by the AWA and by the reduction in consumption of potable water at the Mule Creek State Prison.

The Mule Creek State Prison, the Preston Youth Facility, and the California Department of Fire (CDF) Forest Academy are institutions located within the city limits of Ione. These three facilities are run by the State of California, and are served primarily by Mule Creek State Prison's wastewater collection, treatment, and disposal system, which is separate from the City of Ione's system. The Mule Creek State Prison has a population of approximately 3,840 inmates, and the Preston Youth Facility has a population of approximately 300 wards. The CDF Forest Academy has a seasonal enrollment that fluctuates between a low of approximately 10 people in the summer months to a high of approximately 150 people in the winter and spring (CDF 2008). The majority of the CDF Forest Academy students and faculty reside onsite, with the remainder residing in Ione or in neighboring communities.

The populations of the Mule Creek State Prison and the Preston Youth Facility are not included in the estimates for growth in this EIR as they are not expected to contribute significant flows to the City's wastewater collection and treatment system. The CDF Forest Academy has approached the City of Ione with a request to transfer its wastewater treatment needs from the Mule Creek State Prison treatment facility to the City of Ione in the future. Though it is uncertain at this time if the

Figure 1-1: City of Ione Wastewater Service Area



SOURCE: USGS EROS Data Center 2005, Amador County Department of Information Technology 2008, and RMT Inc. 2009

LEGEND

- Wastewater Service Area
- Ione WWTP Pond
- Tertiary Treatment Plant Area
- City Boundary
- State Route 104
- Sphere of Influence Boundary

N, W, E, S

0 0.25 0.50 0.75 1 Miles

City will take over the responsibility for treating and disposing of the CDF's wastewater, the population of the CDF Forest Academy has been added to the wastewater flow estimates contained in this EIR in case CDF's request is fulfilled by the City in the future. The CDF Forest Academy would be considered an industrial wastewater source.

1.2 EXISTING WASTEWATER FACILITIES

1.2.1 Overview

The City of Ione operates two wastewater treatment and disposal facilities, both of which are located in the southwest corner of the City near the intersection of Old Stockton Road, West Marlette Street, and Five Mile Drive. The first of these two facilities is the City of Ione Wastewater Treatment Plant, also known as the secondary WWTP. This facility is located in the southeast corner of this intersection, and directly to the south of Sutter Creek. This WWTP is a secondary treatment plant that serves the wastewater treatment and disposal needs of the City of Ione, as well as the backwash from the AWA water treatment plant.

The second facility is known as the Castle Oaks Water Reclamation Plant (COWRP), otherwise known as the City's tertiary WWTP. The tertiary WWTP is currently only used for the tertiary treatment of wastewater from ARSA and supplies irrigation flows to the Castle Oaks Golf Course. Both facilities are shown in Figure 1-2.

1.2.2 Secondary WWTP

The secondary WWTP consists of a total of seven open ponds and ancillary monitoring and regulating equipment. Four of the ponds (Ponds 1-4) are aerated wastewater treatment ponds. The untreated domestic wastewater from the City of Ione, as well as the backwash water from AWA, arrives at Pond 1 for treatment. The wastewater gradually moves from Pond 1 to Pond 2 to Pond 3 to Pond 4 during the treatment process. By the time this wastewater completes its cycle at Pond 4, it is considered secondary treated wastewater, and is in compliance with regulations for effluent evaporation and percolation. Pond 4 was originally constructed as a percolation pond; however, after many years with no sludge removal or other maintenance, its value as a percolation pond is believed to be significantly diminished.

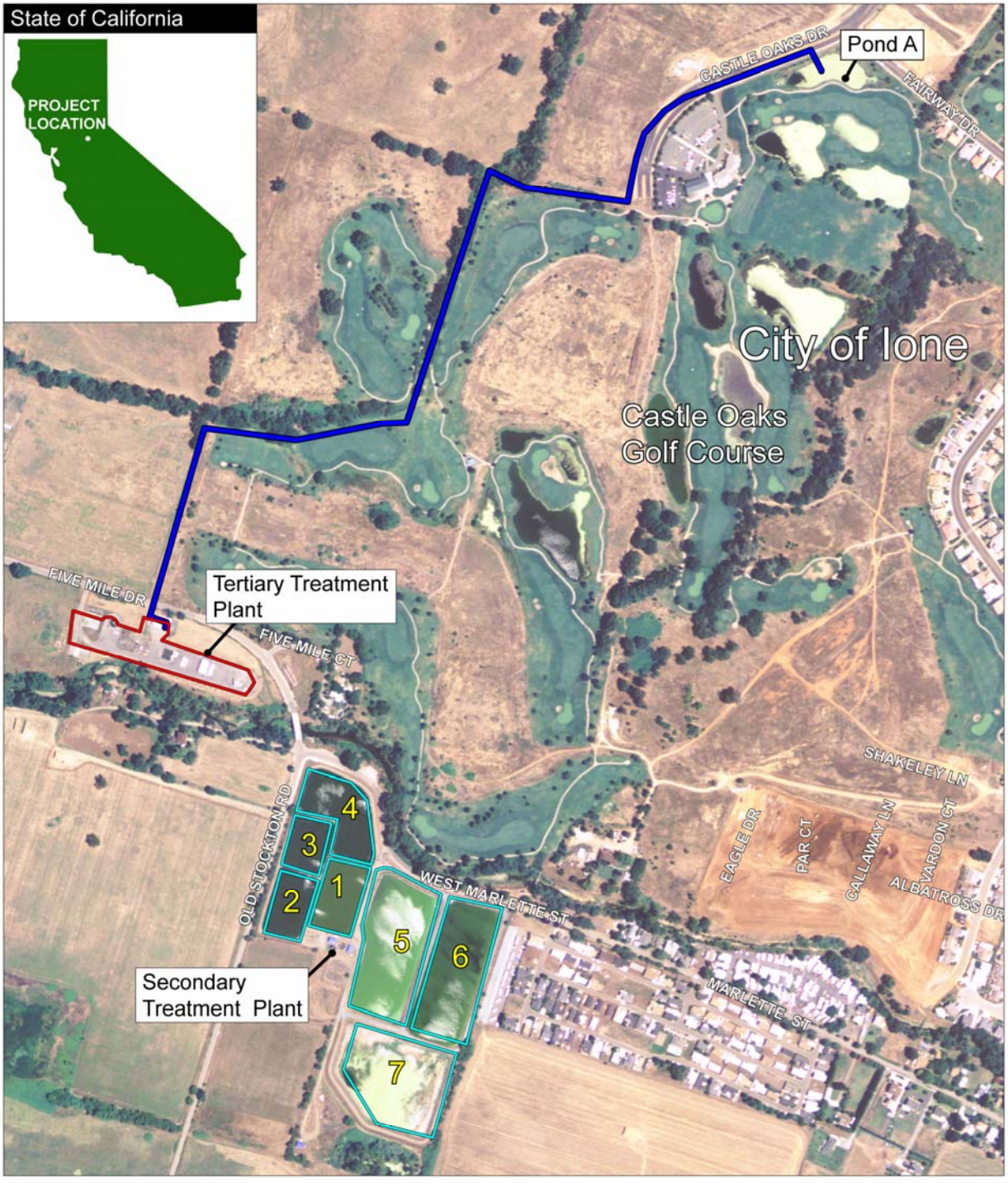
The three remaining ponds at the secondary WWTP (Ponds 5-7) are percolation ponds using a combination of evaporation and percolation to provide final treatment and disposal of secondary-treated wastewater. Pond 5 is the destination of wastewater from the City of Ione and backwash water from AWA that has already undergone secondary treatment in Ponds 1-4. Pond 6 is used to dispose of the secondary-treated ARSA wastewater that does not go directly to the City of Ione tertiary WWTP, described below. Pond 6 is typically only utilized for ARSA wastewater during the wet months of the year when the Castle Oaks Golf Course does not require irrigation; during the dry months, the ARSA wastewater is instead sent to the tertiary WWTP for tertiary treatment and disposed as irrigation water for the golf course. The final pond, Pond 7, was intended to accommodate excess wastewater from Ponds 5 and 6 during wet months in order to maintain minimum freeboard height[1] in Ponds 5 and 6. However, since the City's secondary WWTP is currently at or near capacity, Pond 6, and sometimes Pond 7, may contain Ione domestic wastewater on occasion throughout the year, not just during the wet months.

Ancillary facilities exist at the secondary WWTP. A series of structures exist to the immediate south of Ponds 1-4. These structures include the following:

- Aerobic digester (currently not in operation)

[1] Minimum freeboard height is defined as the minimum distance from the water line to the top of the pond's retaining walls that is required to insure that the pond does not exceed its capacity.

Figure 1-2: Existing City of Ione Wastewater Treatment and Disposal Facilities



- Primary clarifier (currently not in operation)
- Blower building and maintenance shed (blowers are currently not in operation)
- Operations building
- Sludge drying beds (currently not in use)

The South Valley Pump Station is located at the southern end of the property, and serves as the access point for the South Valley Sewer Trunk Line to the project site. The South Valley Sewer Trunk Line is a 15-inch diameter pipeline that conveys raw effluent from the southern portion of the City of Ione to the secondary WWTP. This pipeline enters the South Valley Lift Station located at the south edge of the treatment plant, and the lift station pumps the wastewater to the treatment headworks at Pond 1.

Two stormwater retention basins also exist to the southwest of Pond 7. These two basins were constructed in 2006 and are intended to provide a catch basin for stormwater in heavy storm events. The two basins are not intended to provide a catch basin in the event of spillage from one of the treatment or percolation ponds. The bottom of these two retention basins sometimes intersects the groundwater table, and thus standing water is sometimes present in one or both of these basins.

In addition, various access roads, yard piping, manholes, and monitoring wells exist on the site, and are required for the operation and maintenance of the facility. Figure 1-3 shows the existing facilities at the secondary WWTP.

1.2.3 Tertiary WWTP

The COWRP, otherwise known as the City's tertiary WWTP, is located in the northwest corner of the intersection of Old Stockton Road and Five Mile Drive, and is situated directly north of Sutter Creek. The tertiary WWTP is currently only used for the tertiary treatment of wastewater from ARSA. There is currently no connection between the City of Ione's secondary and tertiary plants that would allow for tertiary treatment of the City of Ione's effluent.

The tertiary WWTP includes the following facilities, which are also shown on Figure 1-4:

- Tertiary Flocculation/Headworks (sized for a peak hydraulic capacity of 1.9 MGD with average flows of 1.2 MGD)
- Tertiary Sand Filters (four filter cells with a total loading capacity of 2.5 MGD)
- Chlorine Mix Tank and Contact Basin (total capacity of 200,000 gallons and a detention time of 120 minutes at a design flow of 1.2 MGD)
- Effluent Pump Station (consists of two vertical turbine pumps that deliver reclaimed water to Pond A at the Castle Oaks Golf Course, and two plant water pumps that supply plant water and filter backwash water)
- Solids Handling Facility (drying and storage area for solids produced during the tertiary treatment process)
- Electrical Service (400 amp service)
- Control and Chemical Building
- Chemical Storage (contains storage tanks for sodium hypochlorite and polymer)
- Sewerage Lift Station and Forcemain, Maintenance Building, and Storage Area (these facilities are located on the site of the tertiary WWTP, but are not part of the function of the facility)

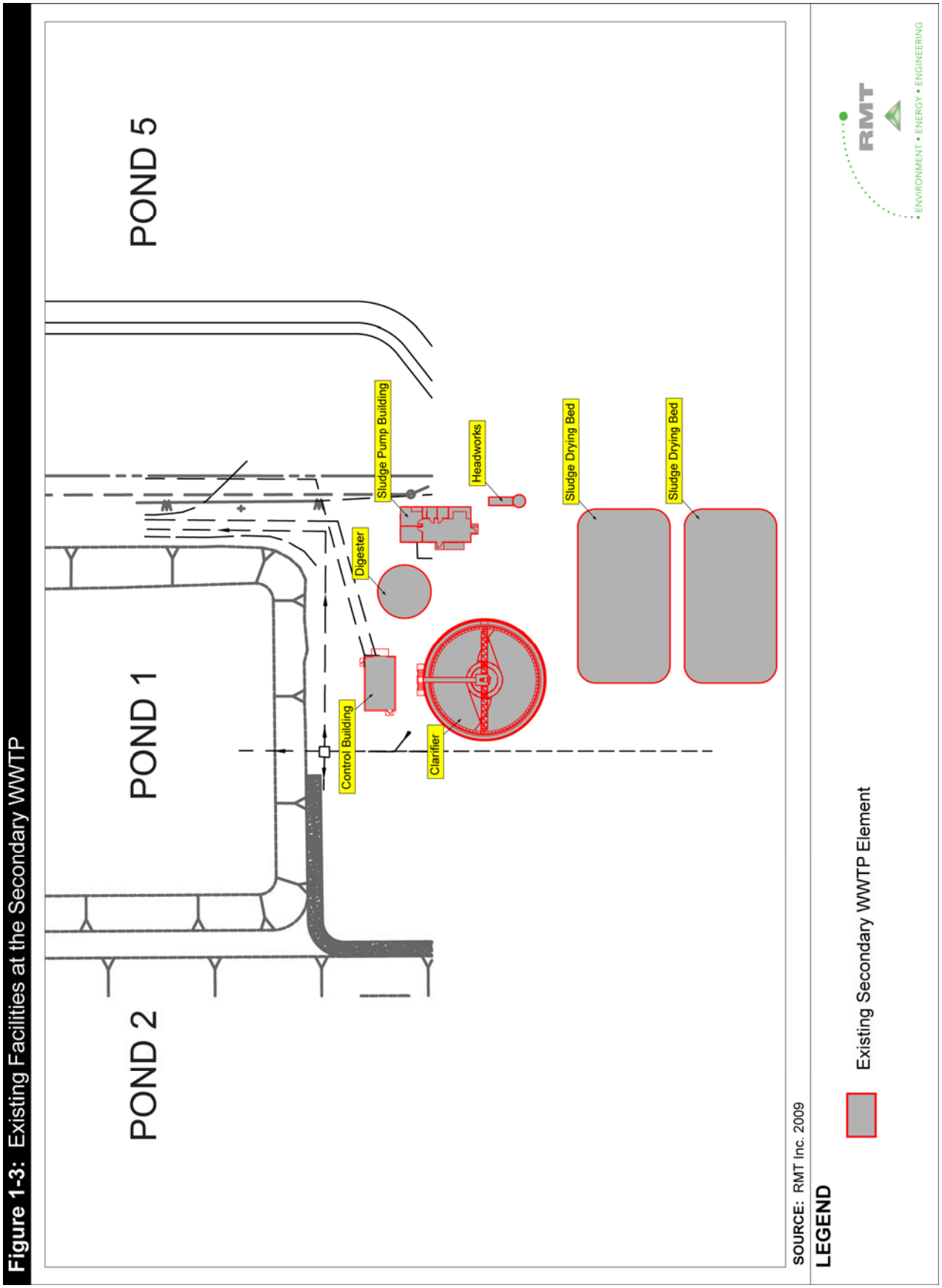


Figure 1-3: Existing Facilities at the Secondary WWTP

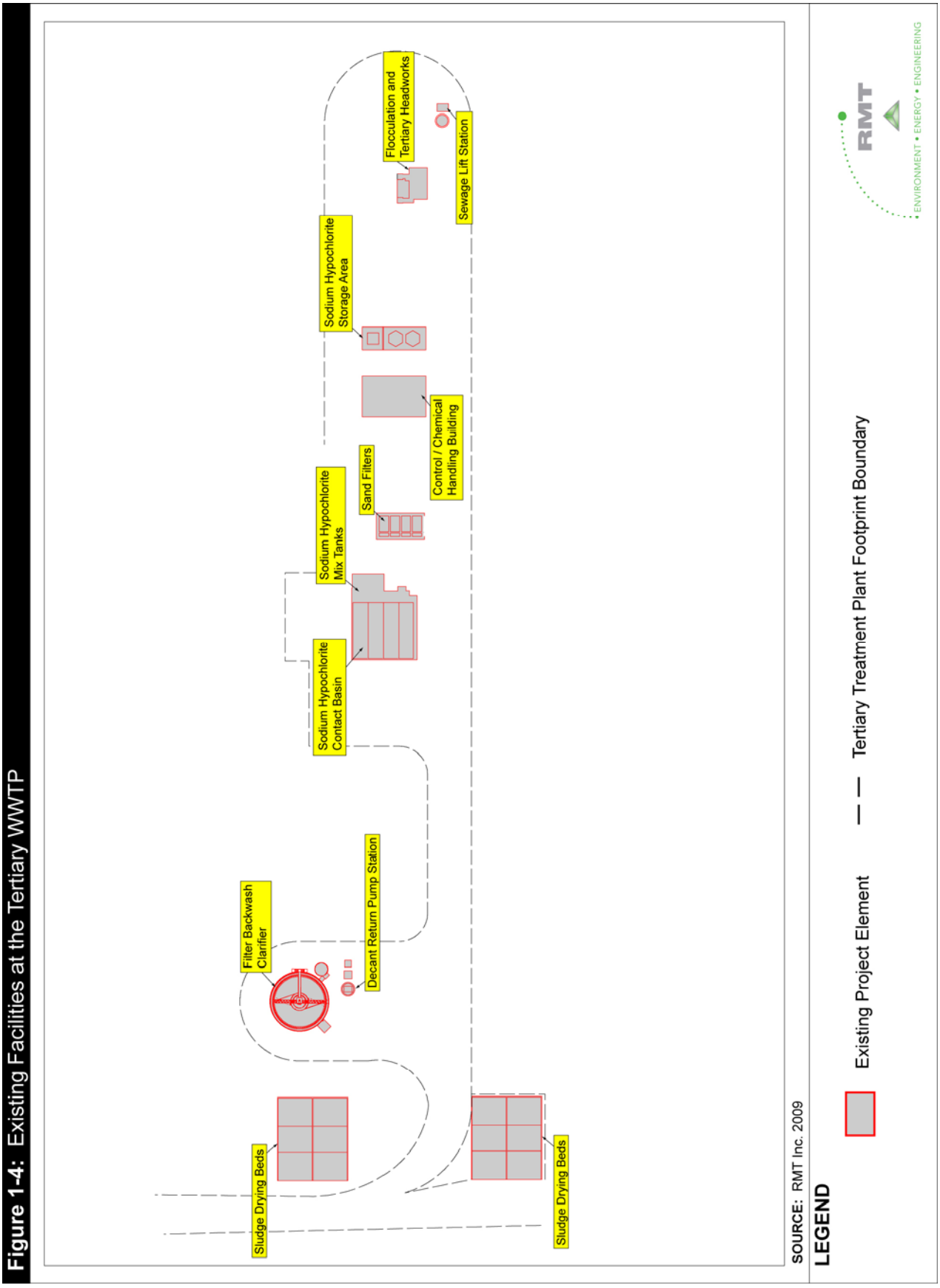


Figure 1-4: Existing Facilities at the Tertiary WWTP

ARSA's wastewater is sent from the City of Sutter Creek's secondary WWTP in the north through a series of pipelines and reservoirs owned by the State of California and leased by ARSA. ARSA's secondary effluent travels south first to Henderson Reservoir and then on to the Preston Reservoir, where it mixes with secondary-treated wastewater from the Mule Creek State Prison, with some addition of surface water diverted from Sutter Creek by the AWA. From the Preston Reservoir, the secondary-treated wastewater either travels to the City of Ione tertiary WWTP for tertiary treatment and land disposal on the Castle Oaks Golf Course, or is sent directly to Ponds 6 and 7 at the City of Ione secondary WWTP for evaporation and percolation. Since the golf course only requires irrigation in the dry months of the year, the tertiary currently WWTP only operates for a portion of the year, usually from April to November.

1.3 SOURCE OF WASTEWATER FLOWS

Unique influent and effluent flow patterns characterize the Ione system, and are described in detail below. To a large degree, the City of Ione's secondary and tertiary wastewater treatment plants operate independently of one another, and the two facilities have different sources of influent flows. A flow diagram showing the existing sources and treatment and disposal processes for wastewater in the region of the City of Ione is shown in Figure 1-5.

1.3.1 Secondary WWTP Existing Influent Flows

The existing influent flows for the secondary WWTP come from two distinct sources. The first, which is referred to as the Ione domestic flow, is composed of those sources of wastewater that are generated by the residential and commercial customers served by the WWTP. The second source is the AWA water treatment plant, located on the eastern edge of the City, which discharges significant amounts (up to 15% to 20% of the total existing Ione WWTP influent flow depending on what time of year the percentage is measured) of filter backwash flows to the Ione sanitary sewer collection system and the secondary WWTP. These two sources together create the combined influent flow reported as total influent flow in Table 1-1. Table 1-2 compares key flow criteria for these two influent sources.

Table 1-1: Existing Influent Flow to the Secondary WWTP, MGD[a]

ADWF[b]	Annual Average	Max. Day	Max. Month	Peak Hour[c]
0.41	0.47	0.75	0.54	3.9

a Based on reported influent flows from Discharge Monitoring Reports submitted to the RWQCB.

b Average daily wastewater flow, based on data from June through October 2003 reported influent flows. Recent flows have decreased from historical values due to a decrease in infiltration in the wastewater collection system.

c Peak hour factor based on evaluation of historical plant data and applying a safety factor of 25%, a peaking factor of 3.9 was applied to ADWF.

SOURCE: Memorandum from LEE & RO, May 4, 2007

Table 1-2: Existing Influent Flow Components for the Secondary WWTP, MGD[a]

Ione Domestic ADWF[b]	Ione Domestic Annual Average[c]	AWA Backwash[b]
0.34	0.40	0.06

a Based on reported influent flows from Discharge Monitoring Reports submitted to the RWQCB by the City and Monthly Reports submitted to the Department of Health and Safety (DHS) by the AWA.

b Based on data from January through December 2007 reported flows.

c. This value does not match the 0.41 MGD ADWF in Table 1-1 due to rounding.

SOURCE: Memorandum from LEE & RO, May 4, 2007

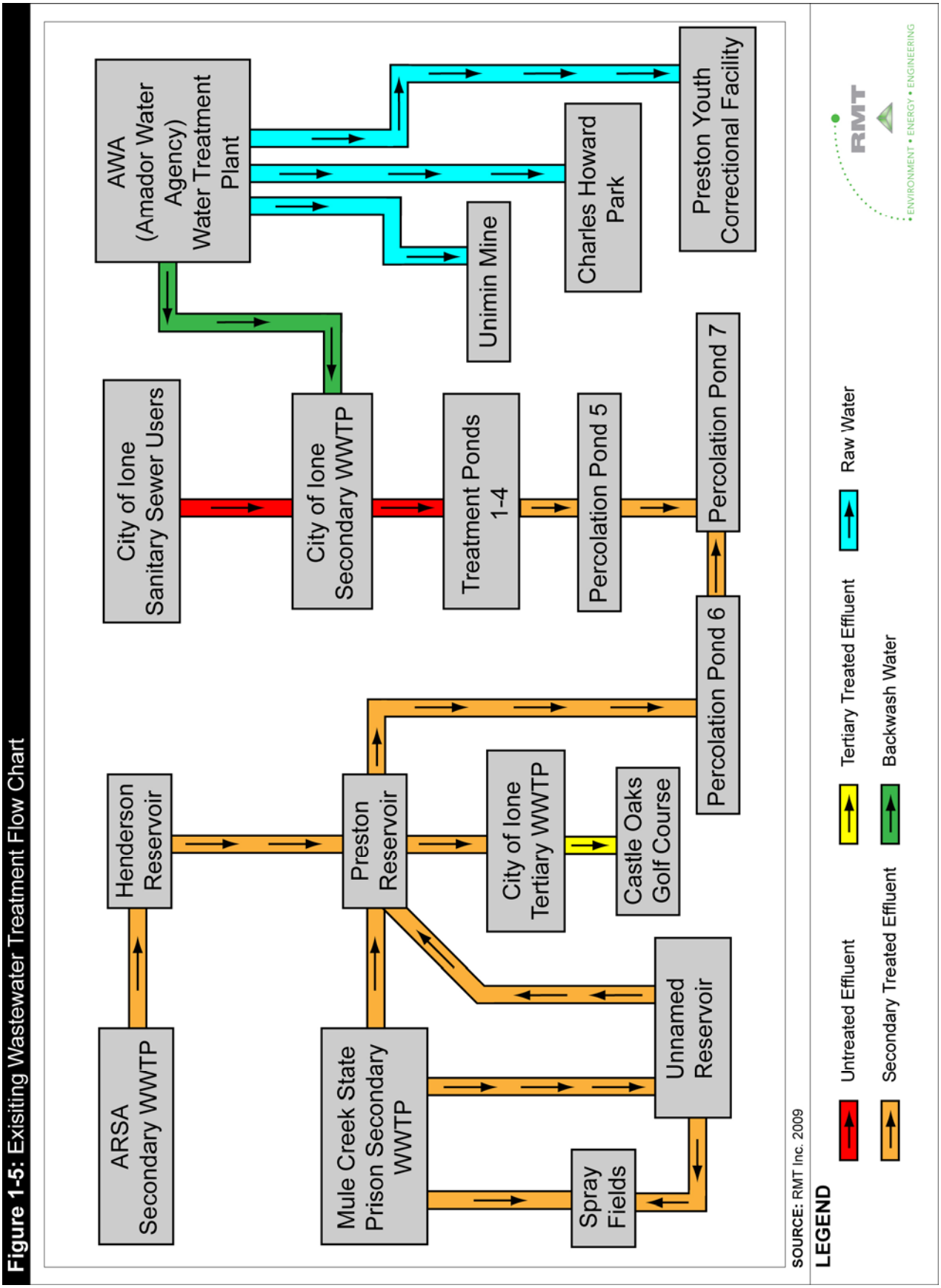


Figure 1-5: Exisiting Wastewater Treatment Flow Chart

1.3.2 Tertiary WWTP Existing Influent Flows

The existing influent flows for the tertiary WWTP come solely from ARSA and the Mule Creek State Prison. ARSA wastewater is generated in the communities of Sutter Creek, Amador City, and portions of Martell, and is treated to a secondary level at the Sutter Creek WWTP before being sent southwest to the City of Ione. After secondary treatment, ARSA's wastewater is sent through a series of pipelines and reservoirs, all owned by the State of California. The ARSA wastewater is first sent via pipeline to Henderson Reservoir, and then on Preston Reservoir. It is at Preston Reservoir that ARSA's wastewater mixes with the secondary treated wastewater from the Mule Creek State Prison. This mixed flow is then sent through a final segment of pipeline to the Ione tertiary WWTP for treatment, or diverted to Ponds 6 and 7 for disposal.

History of the Agreement with ARSA

A July 31, 1990 agreement between the City of Ione and ARSA addresses secondary effluent generated at the Sutter Creek WWTP. The existing agreement between the City of Ione and ARSA for disposal of treated secondary effluent came about as a result of the loss of agricultural land available to ARSA for disposal. This loss of disposal area resulted from the conversion of the Preston Youth Facility Farmlands to residential development in the 1990s.

Originally, the Preston Youth Facility provided fields at their farm to ARSA for disposal of the Sutter Creek secondary effluent. A subsequent agreement between the City of Ione and ARSA allowed spray fields to be developed. This area eventually became the Castle Oaks Golf Course and Subdivision (Castle Oaks).

As part of the agreement to allow development of Castle Oaks, the developer constructed a tertiary treatment plant on Five Mile Road, just north of Sutter Creek in Ione. This treatment plant was turned over to the City of Ione to be operated solely for the treatment of ARSA effluent that previously went to the Preston fields for disposal. The agreement allows for effluent from the tertiary plant to be provided to Castle Oaks Golf Course where it supplies water for approved irrigation uses. This irrigation water supplied by the tertiary WWTP has been treated and purified until it meets the State of California's Title 22 requirements for unrestricted wastewater reuse. Title 22 water is intended to be used only for non-potable uses, such as irrigating golf courses and parks, filling decorative fountains, fire fighting, and irrigating crops that will be peeled or boiled before being consumed.

The City of Ione's agreement with ARSA requires the City to provide disposal for any additional ARSA flows not treated at the tertiary plant and reused at the golf course. Flows in excess of what could be treated at the tertiary plant and reused on the Golf Course are currently diverted to the secondary WWTP directly to Pond 6 for evaporation/percolation disposal. Thus, the impact of ARSA flows on the secondary WWTP, while significant, are limited to disposal capacity and associated solids handling and disposal requirements.

Current ARSA Agreement

The current agreement allows for ARSA to send up to 650 acre-feet of treated effluent to the City for disposal per year. This value will be reduced in 2012 to equal the disposal capacity of the Castle Oaks Golf Course, eliminating the need for the City to provide percolation pond capacity for ARSA. In the summer months, the City fulfills its obligation through tertiary treatment of the secondary effluent and conveyance of the resulting Title 22 water to the Castle Oaks Golf Course for reuse. In the winter months, the time of year when higher surface runoff occurs due to precipitation and the golf course is not in need of irrigation, ARSA effluent is diverted to the City's secondary WWTP Pond 6 for evaporation and percolation.

The total ARSA flows that the City of Ione is obligated to accept are 650 acre-feet per year. In a normal year the golf course is expected to use approximately 500 to 600 acre-feet of reclaimed water. In an extremely wet year (100-year event), the volume of reclaimed water that the golf course can be expected to use could drop to between 400 and 500 acre-feet. Subsequent to 2012, ARSA's contribution to the Ione tertiary WWTP will be reduced to approximately 500 to 600 acre-feet per year, or 400 to 500 acre-feet in an extremely wet year.

A recent amendment to the agreement with ARSA allows the City of Ione to provide a five-year notice to ARSA to cease sending secondary treated wastewater to the Ione tertiary WWTP. However, in order to provide this five-year notice, the City of Ione must fulfill a set of criteria that includes obtaining all necessary permits for the Master Plan. The City of Ione has not yet stated whether it intends to exercise this five-year notice option in the future.

1.4 EXISTING TREATMENT AND DISPOSAL CAPACITY

1.4.1 Existing Treatment Capacity at the Secondary WWTP

The three active treatment ponds were originally constructed in 1955 without supplemental aeration. Clay liners were installed in the bottoms of the three treatment ponds in the late 1950s. A clarifier and an aeration system were added and the ponds reconfigured to create treatment capacity in 1977. The three aerated ponds (Ponds 1 through 3), totaling 4.1 acres, provide operational capacity to accept a primary effluent organic loading of approximately 615 pounds Biochemical Oxygen Demand (BOD) per day. The actual BOD loading at Ione's WWTP averaged 162 mg/L from June 2003 through May 2004. The dry weather capacity of these three treatment ponds is 0.55 million gallons per day (MGD) (LEE & RO, 2007).

Ione's existing secondary WWTP disposal system is composed of four treatment ponds and three percolation/evaporation ponds. The size and holding capacities of the three active treatment ponds are shown in Table 1-3. Pond 4, though technically considered one of the treatment ponds as it contains aerators, is not listed in Table 1-3 since active treatment does not occur in this pond. The wastewater entering Pond 4 has already been treated to a secondary level of treatment. Pond 4 is included in Tables 1-4 and 1-5 under disposal capacity, though its effectiveness as a percolation pond is significantly diminished by its lack of sludge removal and other maintenance needs.

The secondary WWTP treats the City of Ione's municipal wastewater, as well as the backwash water from the AWA water treatment plant, and has the theoretical capacity to treat up to 1.2 MGD. However, based on biological loading criteria, the plant has the effective capacity to treat only approximately 0.55 MGD of normal strength domestic wastewater. This lower number is used as the actual capacity of the current plant when discussing the sizing or biological treatment processes.

Table 1-3: Existing Treatment Pond Characteristics

Pond Number	Volume, MG	Surface Area (when full), acres
1	3.0	1.7
2	2.2	1.5
3	1.6	1.1
TOTAL	6.5	4.3

SOURCE: Memorandum by LEE & RO, May 4, 2007

1.4.2 Existing Disposal Capacity at the Secondary WWTP

As stated previously, the existing Ione secondary WWTP disposal system is composed of a combination of treatment ponds and percolation/evaporation ponds, with minimal percolation in the dual-use Pond 4. The size and storage capacities of the percolation/evaporation ponds (including Pond 4) are shown in Table 1-4, while the percolation and evaporation rates for these ponds are shown in Table 1-5. The total percolation and evaporation disposal capacity of Ponds 4-7 is approximately 0.85 MGD.

The original July 31, 1990 agreement between ARSA and the City does not specify how the City is to provide for disposal capacity in wet weather. Up until a recent series of amendments to the original agreement with ARSA, it has been assumed by the City that Pond 6, constructed in 1996, would be the sole pond disposal facility dedicated to ARSA flows. The City was originally obligated to accept up to 750 acre-feet of ARSA effluent annually (900 acre-feet in a wet year) through 2008, and possibly through 2013.

Recent amendments to this agreement have decreased the City of Ione's disposal obligation to 650 acre-feet per year. This capacity will further be reduced in 2012 when the disposal obligation will be decreased to equal the water demand from the Castle Oaks Golf Course. The most recent amendment also allows the City of Ione to terminate its obligation to treat and dispose of ARSA's wastewater with a 5-year notice to ARSA. As mentioned above, the City of Ione needs to meet a set of requirements before this notice can be sent to ARSA, including obtaining all necessary permits for the implementation of the Master Plan.

Table 1-4: Existing Disposal Pond Characteristics

Pond Number	Volume, MG	Surface Area (when full), acres
4	2.4	2.2
5	17.2	4.9
6	9.0	4.2
7	13.0	5.5
TOTALS	41.6	16.8

SOURCE: Memorandum by LEE & RO, May 4, 2007

Table 1-5: Existing Percolation and Evaporation Rates

Pond Number	Evaporation Rate, MG/yr	Percolation Rate, MG/yr
4	2.9	37.9
5	6.4	84.5
6	5.6	72.4
7	7.2	94.8
TOTALS	22.1	289.6

SOURCE: Memorandum by LEE & RO, May 4, 2007

1.4.3 Limitations on the Existing Secondary Wastewater Treatment and Disposal Systems

The existing secondary treatment and disposal system has adequate capacity for limited growth within the City service area, up to an associated wastewater flow of 0.55 MGD. The existing capacity needs the City of Ione are nearing this capacity for treatment and disposal, and near-term growth is expected to exceed this capacity within the next few years.

In addition, the RWQCB Waste Discharge Requirements (WDR) for the operation of this treatment system and the use of the percolation ponds is out of date, with the last WDR approved for the City of Ione in 1995. Typically, WDRs are reviewed and updated every five years. The City was required by the RWQCB to draft of a Report of Waste Discharge (ROWD), which was completed in June 2006. The City received comments from the RWQCB regarding the ROWD, which included concerns about the existing wastewater treatment and disposal system. It is anticipated that the current treatment system utilizing aerated treatment ponds followed by percolation ponds will not meet the water quality objectives of the RWQCB. Should the existing treatment and disposal system not meet with the approval of the RWQCB, then the City may be required to replace the current treatment system, upgrade treatment quality, and improve the operation of the percolation ponds.

1.4.4 Existing Treatment Capacity at the Tertiary WWTP

The existing Ione tertiary WWTP system has a treatment capacity of up to 1.2 MGD with a peak hydraulic capacity of 1.9 MGD, but is not being used to capacity at present. During the wet months of the year, the tertiary facility lies dormant, and the ARSA secondary treated wastewater is sent directly to Ponds 6 and 7 at the secondary WWTP for percolation and evaporation. The tertiary WWTP was constructed with expansion in mind, and was built and sized to accommodate facilities that could treat up to 2.4 MGD.

1.4.5 Existing Disposal Capacity at the Castle Oaks Golf Course

The Castle Oaks Golf Course is typically able to accept between 500 and 600 acre-feet of reclaimed water per year for irrigation purposes. The golf course only accepts reclaimed water during the dry months of the year, which typically run from April through November. In particularly wet years, the volume of reclaimed water that the golf course can be expected to use could drop to between 400 and 500 acre-feet.

2 Projected Wastewater Treatment Capacity Needs

The City of Ione has identified that its existing effluent treatment and disposal capacity will not be sufficient to meet the City's future needs.

2.1 PROJECTED INFLUENT FLOWS FOR THE IONE SECONDARY WWTP

Projected influent flows are based on existing conditions and projected population and land use changes within the City. These influent flows include growth in residential, commercial, and industrial wastewater treatment and disposal needs. The flows used in this evaluation are based on the projections of growth within the City's 2009 General Plan, which will extend the City's planning horizon to the year 2030. Figure 2-1 shows the projected wastewater treatment and disposal capacity needs from today to the 2030 planning horizon.

Residential

The City of Ione currently treats wastewater for approximately 1,525 residences. Approximately another 1,000 residences have already been approved by the City for development. The Master Plan predicts another 2,167 residences will be built by 2030, for a total of approximately 4,692 residential units.

Figure 2-1 assumes an average estimated flow rate of 200 gallons per day per residence. In 2030, the projected 4,692 residential units would produce approximately 0.912 MGD of effluent.

Commercial

The City of Ione currently has approximately 9.5 acres dedicated to commercial uses, including a mix of both retail and office uses. The 2009 General Plan estimates that an additional 68 acres of land will be devoted to commercial uses. The Master Plan assumes that 1,770,000 square feet of commercial development will be built on the total of 77.5 acres zoned for commercial uses by 2030.

Commercial uses are estimated to produce 0.1 gallons of wastewater per day per square foot of commercial development..Using this factor, the 1,770,000 square feet of commercial uses would be projected to produce approximately 0.177 MGD of effluent.

Industrial

No industrial uses currently exist in the City of Ione. The 2009 General Plan estimates that 218 acres will be devoted to industrial use. The Master Plan assumes that 1,460,000 square feet of industrial development will occur on those 218 acres by 2030. An additional 12,000 gpd of wastewater from the CDF Forest Academy has been added to the flow projections to account for the planned dorm housing at the academy. Wastewater treatment and disposal needs of the CDF Forest Academy are currently served by the Mule Creek State Prison, but future dorm facilities are not likely to be served by the prison.

Effluent flow rates for industrial uses vary depending on the intensity of the industrial use. It is assumed that any future industrial uses in the City of Ione will be light industrial uses, with typical flows of 0.1 gallons of wastewater per day per square foot of building space. Using this factor, the estimated 218 acres of light industrial uses would be projected to produce approximately 0.146 MGD of effluent.

The wastewater treatment and disposal needs of the Preston Youth Facility are currently served by the Mule Creek State Prison. It is possible that the State of California will be closing the Preston Youth Facility sometime in the foreseeable future, in which case the site could remain vacant or could be occupied by another use, such as a community college. In any event, it is also possible that these lands (and whatever use occupies them) could be added to the City of Ione's wastewater treatment and disposal system at some future date. However, at this time it is too speculative to determine whether this change in treatment systems would occur, and what use might be on these lands at such time that they are added to the City's sewer system. Therefore, the Preston Youth Facility's wastewater flows are not included in Figure 2-1.

Existing Dry Weather I/I

The City of Ione's sewer collection system is old, and thus has a tendency for groundwater to intrude into the collection system. This intrusion is caused by sewers and manholes that are in poor condition, which allows surrounding groundwater to collect in the system. The "dry weather I/I" is a measure of this intrusion. In the City of Ione, the dry weather I/I peaks seasonally at approximately 0.080 MGD. This seasonal peak occurs in the winter and spring. During extended

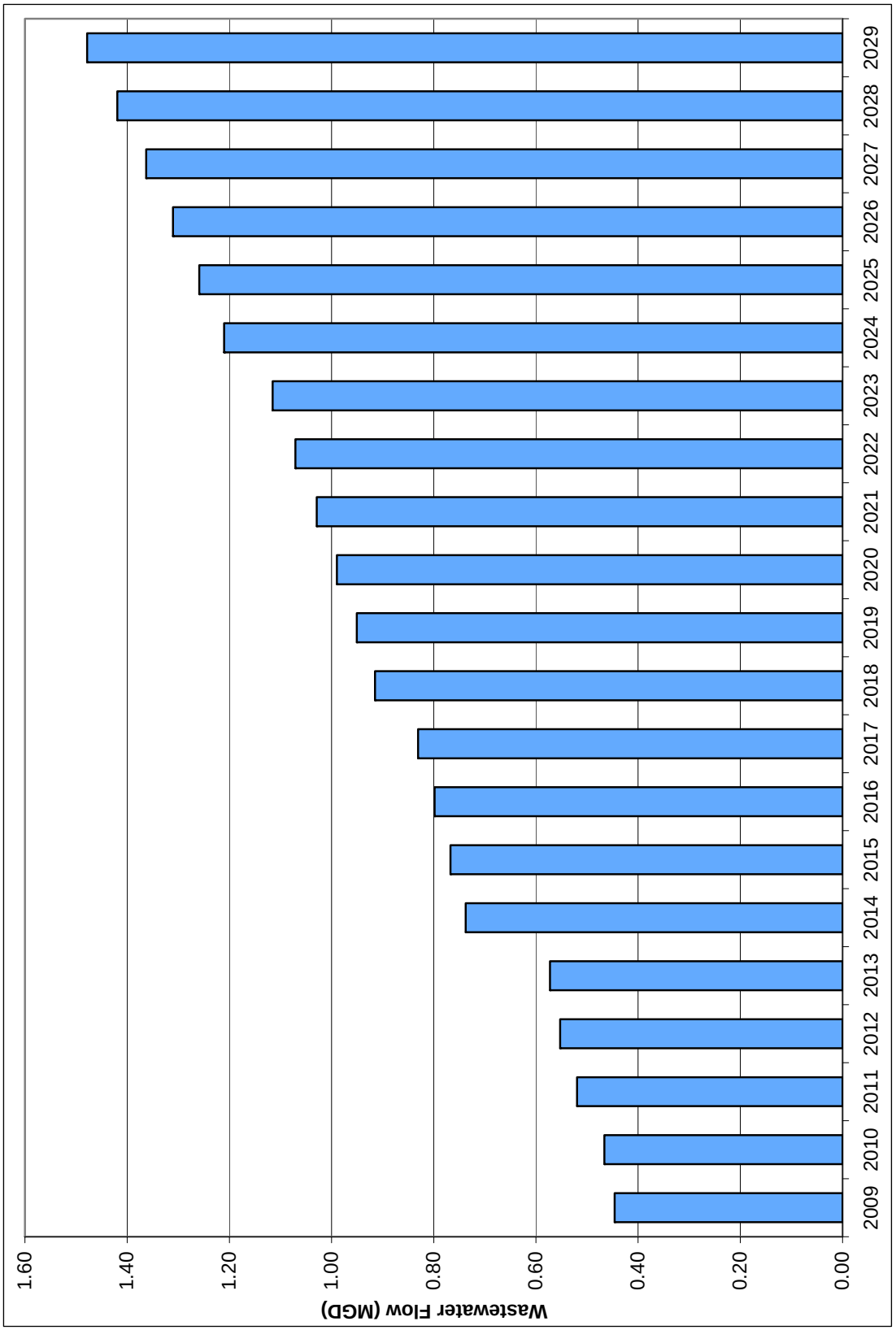


Figure 2-1: Projected Secondary Wastewater Treatment Capacity Demands

SOURCE: LEE & RO, 2008

periods of dry weather, such as the summer and autumn, this flow approaches zero due to the seasonal drop in groundwater elevation.

AWA Backwash

The AWA is in the preliminary stages of reviewing plans to close the water treatment plant near Ione and build a new facility in Martell between the Cities of Jackson and Sutter Creek. The closure of the AWA Ione water treatment plant is anticipated to be complete by 2011, but may be delayed and/or not occur at all. If AWA does move forward and eliminates backwash water from the Ione municipal wastewater flow, it would eliminate between approximately 30,000 to 62,000 gpd of flow into the Ione secondary WWTP. However, since the AWA might not proceed with these plans and the backwash water may continue to be sent to the Ione secondary WWTP indefinitely, the flow rates in Figure 2-1 are conservative and assume that the AWA will continue to send approximately 50,000 gpd (0.050 MGD) of backwash water to the Ione secondary WWTP.

Total Projected Influent Flows for Ione's Secondary WWTP

Figure 2-1 indicates that by the year 2030, the City of Ione would have a capacity demand for approximately 1.48 MGD for the treatment and disposal of the City's municipal wastewater and AWA backwash. Figure 2-1 reflects the termination of ARSA flows to the percolation ponds starting in 2012. The Ione secondary WWTP currently has a treatment capacity of only 0.55 MGD, and so according to Figure 2-1, the demand for secondary treatment would exceed capacity some time in 2011.

2.2 PROJECTED WASTEWATER DISPOSAL DEMAND

The City's municipal wastewater currently receives only secondary treatment, and the only existing disposal option for the City's treated wastewater is the percolation and evaporation ponds at the secondary WWTP. These ponds currently have a disposal capacity of approximately 0.85 MGD. Figure 2-1 indicates that the City will experience a 1.48 MGD demand for wastewater treatment by 2030. Figure 2-1 does not include the seasonal flow of ARSA wastewater to percolation Ponds 6 and 7, which could amount to as much as 0.22 MGD during an extremely wet winter. However, since the ARSA flow will cease being sent to the ponds in 2012, the ARSA wastewater will not materially affect wastewater disposal demand for the City of Ione. Therefore, the City's 2030 projected treatment capacity demand of 1.48 MGD also translates to a treated wastewater disposal demand of 1.48 MGD. According to Figure 2-1, the disposal demand will exceed the percolation and evaporation capacity of the ponds some time around 2016.

2.3 PROJECTED INFLUENT FLOWS FOR THE IONE TERTIARY WWTP

The agreement between ARSA and the City of Ione authorizes both parties to issue a five-year notice to terminate ARSA's secondary wastewater flow to Ione's tertiary WWTP. As stated previously, the City of Ione cannot issue a five-year notice to ARSA until certain conditions are met, including obtaining the necessary approvals for the Master Plan, as well as demonstrating that the City and meet the irrigation needs for the Castle Oaks Golf Course without the contribution of ARSA's secondary effluent. Currently, the City of Ione does not have access to reclaimed water from sources other than the ARSA-treated wastewater at the Ione tertiary WWTP. Therefore, under current conditions, there would be no change to the projected influent flows to the Ione tertiary WWTP.