4.4 PUBLIC UTILITIES

4.4.1 WATER SUPPLY/DEMAND

Setting

The majority of the project site is located within one of three irrigation districts. Approximately 2,900 acres are located within the Byron-Bethany Irrigation District (BBID); approximately 200 acres are located in the Westside Irrigation District; and approximately three acres are in the Plain View Irrigation District (Figure 4.4-1). The remaining land (approximately 1,600 acres) are not located within any irrigation district. Most of these lands (approximately 1,262 acres) are located north of Byron Road and are supplied by water pumped from the inlet channel (along Wicklund Road) for the Westside Irrigation District under riparian rights held by individual land owners.

BBID maintains pre-1914 appropriative water rights to divert water from the Sacramento/San Joaquin Delta for beneficial use within its district. Raw water is withdrawn from the intake channel to the California Aqueduct and pumped into three distribution canals in the southern district to serve agricultural customers. Water is distributed across the southern district in canals located at 70-, 120-, and 155-foot elevations.

Irrigation in the project site normally occurs between April and October each year, depending on climatic conditions. An average of 34,070 acre-feet per year has been used within BBID between 1976 and 1991. BBID diverted an average of 9,413 acre-feet per year for agricultural use within the project site, representing 24 percent of the total water use within BBID, between 1976 and 1991 (The SWA Group, 1994a).

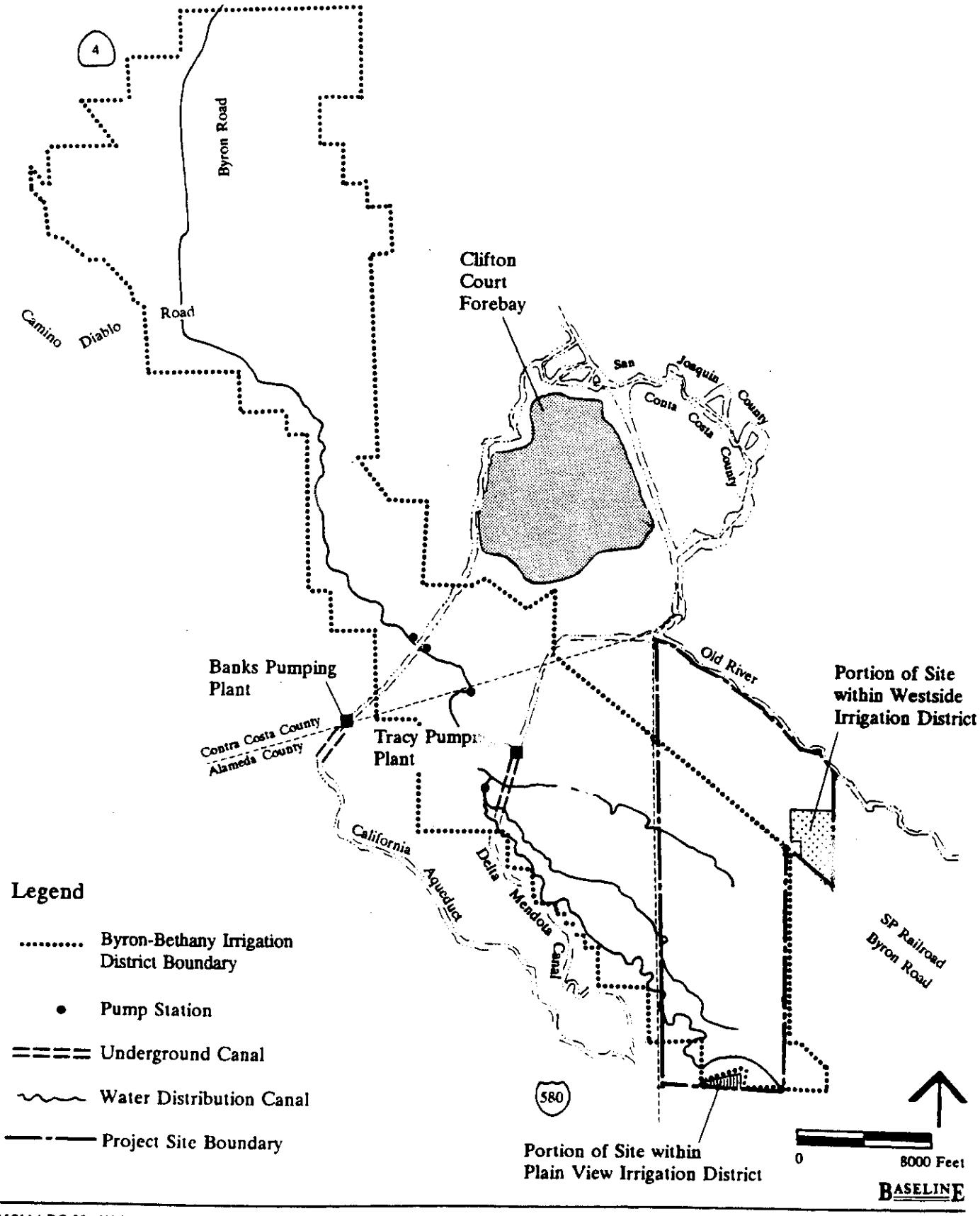
The California Department of Water Resources (DWR) has collected water samples from the intake channel to the California Aqueduct, which is the diversion point for BBID's water. In general, the results indicate that the water is potable and would meet drinking water standards following conventional water treatment (BASELINE, 1993).

Impacts and Mitigation Measures

An assessment of the potential impacts of the project on water supply begins with a comparison of existing potable water supplies with the demand created by the project. An examination of the adequacy of institutional framework or agreements to deliver potable water to the site is also a part of the impact analysis. While discrepancies between supply and demand are not in themselves technically significant environmental impacts (defined by CEQA as a "substantial adverse change in the physical environment"), the imbalance could affect proposals to obtain an adequate water supply on-site which could have a direct impact on the environment. Potential significant environmental

IRRIGATION SERVICE DISTRICTS

Figure 4.4-1



impacts could occur to water resources, including groundwater and surface water. Use of groundwater resources is not proposed.

For water treatment, a significant environmental impact would be the inability to meet Federal and State drinking water standards or to provide sufficient treatment capacity needed to serve the project. Disposal of water treatment process sludge that does not meet Federal and State regulations could result in significant public health impacts and water quality impacts. A significant impact could also result from uncontrolled releases of hazardous materials associated with water conveyance or treatment.

MASTER PLAN

The Draft Master Plan proposes to contract with BBID, using BBID's pre-1914 appropriative rights to provide most of the water needed for the project. The remainder of the water would be withdrawn from Old River using the riparian rights associated with land located between Byron Road and Old River. A water exchange agreement between BBID and the DWR has been executed to allow BBID to withdraw water during winter months, when BBID has not historically withdrawn water.

New pumping facilities, including a pump station and pipeline, water treatment facilities, and water storage and distribution system, would be constructed to serve the project. Phased construction is proposed for these facilities. The new raw water pump station building would be built initially with a minimum of two pumps at one of three possible locations near the existing BBID intake facility located on the intake channel of the California Aqueduct. Additional pumps would be added as demand increases. Initially, one conveyance pipeline for transporting the water from the intake to the treatment plant would be built; a second pipeline would be added for the second half of development. The different components of the water treatment plant would be constructed in two to six phases. Water from the treatment plant would be pumped into a new water distribution system that would be installed and expanded to serve newly developed areas.

The entire project site is not within the boundaries of BBID, which is the primary supplier of water for the project (Figure 4.4-1). Land currently not within BBID, including land with riparian water rights, would need to be annexed to BBID before BBID-owned water may be used. However, land with riparian water rights would not need to be annexed to BBID if water diverted under riparian rights, not BBID-owned water, were used. Water diverted under riparian rights may be conveyed through BBID's raw water pump station and pipeline without BBID annexation. With possibly the exception of the land with riparian water rights, development outside of BBID boundaries would require an alternative source of water to satisfy project water demand. The portions of the project site currently not in BBID is all the land north of Byron Road, the parcels in the southwestern corner of the site, and those land within the Plain View Irrigation District **(Figure 4.4-1)**.

Those areas of the project site outside of BBID boundaries and without riparian water rights must be annexed into BBID to allow the District to provide water for those areas. Portions of the project site would be annexed sequentially, as needed, prior to development. The administrative procedures

for annexation would begin with discussion, review, and agreement between the BBID Board of Directors and the applicant. Once an annexation agreement between BBID and the applicant were finalized, either BBID or the applicant would formally apply to the appropriate Local Agency Formation Commission (LAFCO) to process the annexation request. LAFCO functions to regulate changes in the structure of local government agencies, including cities and special districts; such changes may include annexations, withdrawals, incorporation, formations, and consolidations, or dissolutions.

BBID is a multi-jurisdictional special district that provides water to portions of San Joaquin, Contra Costa, and Alameda counties. Under normal circumstances, the Contra Costa County LAFCO would administer an annexation request because BBID's main office is in Byron, located in Contra Costa County. However, since the proposed project would simultaneously annex and detach territories involving three districts, BBID, Westside Irrigation District, and Plain View Irrigation District, and the majority of these districts is in San Joaquin County, the application would be processed by the San Joaquin LAFCO.

In San Joaquin County, the sphere of influence boundary of a district is conterminous with the district boundary. In processing the annexation, the sphere of influence boundary would be changed first, followed by the annexation action (Scott, 1992). The San Joaquin County LAFCO has approved a change in BBID's sphere of influence to include the entire project site on 17 December 1993; annexation to BBID is still required. Subsequent annexation procedures include the following steps:

- BBID files an application for annexation in the form of a resolution or a petition.

- As of 1 January 1994, if the application includes written consent of all the landowners within the affected area, LAFCO can complete the annexation/deannexation (Scott, 1993). If the application does not include written consent of all the landowners, LAFCO holds a public hearing to consider the annexation application.

- Upon approval by LAFCO, BBID would hold a public hearing unless authorized by LAFCO to proceed without further hearings. BBID may: 1) resolve to approve the annexation proposal if less than 25 percent of the landowners or registered voters protest; 2) hold an election if 25 to 50 percent of the landowners or voters protest; or, 3) terminate the proceedings.

- Upon approval of annexation by BBID, BBID would submit the required fees to the State Board of Equalization, the Executive Officer of LAFCO would certify completion of the annexation process, and a statement of boundary changes would be issued.

Objections of land owners affected by the reorganization could prevent future annexation/deannexation. Since annexation would occur over the entire buildout period, assurance that de-annexation and annexation applications would be successful is needed. The assurance would

be provided if all land owners affected by the reorganization were to express their consent. If reorganization were to occur in the near future, the applications are likely to be successful since there was no opposition to the change in sphere of influence petition (Scott, 1993).

Deannexation from Westside Irrigation District would need to be completed incrementally in order for the San Joaquin County LAFCO to maintain jurisdiction over the process. If the process were to become an annexation process involving only BBID, then Contra Costa County LAFCO would have jurisdiction, unless they relinquish jurisdiction. Another concern is the availability of irrigation water to those parcels deannexed from Westside Irrigation District. Since BBID would not be able to serve those parcels, an interagency agreement between BBID and Westside Irrigation District would be needed to ensure irrigation water service until the land is developed.

Impact M4.4.1-1

Inadequate raw water storage facilities may result in interruption of water service, especially if restrictions on water diversion were imposed by State or Federal agencies.

Historically, BBID has not withdrawn water from the Sacramento/San Joaquin Delta during the entire year because of the lack of demand during the winter months. The past annual water usage at the project site occurred during the period from March 15 to October 15 of each year for the past 15 years (Trimark Communities, 1991a). Since the pre-1914 water rights for BBID are based on past use, BBID would not be able to provide water to the project in the winter. BBID withdraws water from the intake channel of the California Aqueduct, which is operated by DWR. The two agencies have signed a water exchange agreement that would allow BBID to withdraw a maximum of 4,000 acre feet of water between November 1 through March 31 each year, provided BBID does not divert an equal amount of water between April 1 and October 31. Provisions in the agreement are summarized below.

- Agreement expires 31 December 2035; renewal subject to negotiation.
- Exchange water to be used in project only, unless with DWR written consent.
- Amount of exchange water to be agreed upon the preceding year.
- Agreement void if Winter Water Rights granted.
- Obligation to provide water suspended if emergency prevents diversion of water.
- Federal or State restrictions to DWR diversions will likewise restrict BBID diversion under agreement.

The Delta has received close scrutiny from Federal and State agencies relative to fresh water outflow, water quality, and fishery habitat. Water diversions from the Delta reduce the fresh water outflow and generally results in lower water quality and impaired fishery habitat. Existing water rights authorizing diversion from the Delta may be affected by pending Federal and/or State regulatory actions.

On 15 December, 1993, four federal agencies, EPA, Fish and Wildlife Service, National Marine Fisheries Service, and the Bureau of Reclamation, issued proposed water quality standards for the

Delta. These include a salinity standard and survival indices for certain fish species. On the State level, the SWRCB has recently ~~renewed~~ **resumed** its ~~efforts to develop water quality standards for the~~ **triennial review of the Water Quality Control Plan for the** Delta. Hearings have been scheduled through the summer of 1994 to collect testimony. A draft Water Quality **Control** Plan is tentatively scheduled for release in December 1994, with possible adoption of the **Water Quality Control** Plan in the spring of 1995. **Following the adoption of the Water Quality Control Plan, the SWRCB will commence a water rights proceeding which may involve a reallocation of water rights within California to comply with the Water Quality Control Plan, resulting in a new Water Rights Decision.** It is unknown how the efforts of the Federal and State agencies on developing water quality standards for the Delta **or potential reevaluation of existing water rights** will evolve. However, diversion of fresh water from the Delta will ~~almost certainly~~ **likely** be curtailed for the large Federal and State diversion projects. The water rights of other **non-Federal or State project** users ~~of Delta water would~~ **in the Central Valley and the rest of California may** be reconsidered by the SWRCB in order to spread the burden of protecting the Delta.

Mitigation Measure M4.4.1-1

(a) A new Implementation should be added under Objective 1 in Potable Water Supply and Distribution (Appendix C), as follows:

"b) ~~A contingency plan to supply water for the project in case of potential restrictions on water diversion, imposed on BBID and/or DWR under the exchange agreement, shall be provided to the County for review prior to the submittal of the first Development Permit. Actions may include mandatory water conservation and moratorium on new building construction~~ ***Specific Plan II and each subsequent specific plan shall reevaluate the adequacy of the confirmed water supply for the remainder of the project in light of any potential or adopted restrictions on water diversion by BBID or DWR. The specific plans shall not be approved unless it can be demonstrated that the confirmed water supply is sufficient to serve the project through buildout. If potential or proposed restrictions on diversion would cause the confirmed water supply to be insufficient to serve the project as proposed in the Draft Master Plan, then the specific plans shall identify additional water conservation/reuse measures to be incorporated into the project to ensure that the demand would not exceed the confirmed supply.***"

(b) A new Policy should be added under Objective 8 in Potable Water Supply and Distribution (Appendix C), as follows:

"b) Adequate raw water storage will be provided to ensure a continued supply to the project in case of restriction to water diversion and emergencies that would prevent diversion."

(c) A new Implementation should be added under Objective 8 in Potable Water Supply and Distribution (Appendix C), as follows:

"c) Assumptions and calculations for determining adequate raw water storage volume, and plans for providing the storage shall be submitted to the County for review and approval prior to the submittal of the first Development Permit."

Impact M4.4.1-2

Changing part of BBID's service area from agricultural water use to municipal/industrial water use would create institutional issues requiring resolution. Indirectly, impacts to agricultural operations could include disruption of irrigation water supply and agricultural drainage service.

BBID provides irrigation water and maintains an agricultural drainage system for most of the project site south of Byron Road, and for a parcel located adjacent to the southeastern corner of the project site. Service to the parcel southeast of the project site must be maintained indefinitely. Since development of the project would progress incrementally, service to the remaining lands within BBID must be maintained until the lands are taken out of agricultural use and developed.

BBID has signed an agreement to provide water to the project. The agreement would become effective upon signing by an authorized person representing the Mountain House Community Service District (CSD) **after formation** and remain in effect in perpetuity. Provisions in the agreement are summarized below.

- BBID will provide up to 9,413 acre-feet of water per year to the project.
- CSD will insure that irrigation and drainage to all lands within BBID will be maintained to existing levels.
- BBID will attempt to obtain permission from DWR to build the new pump station and conveyance facilities.
- CSD will build new pump station and pipelines and transfer ownership to BBID.
- CSD will have the right to convey non-BBID water to the new water treatment facilities.
- CSD will not use reclaimed water for irrigation within BBID without written consent.
- BBID will set fees for water service.
- CSD indemnifies BBID for non-existence or diminished water supplies caused by actions of the U.S. or California government.

Mitigation Measure M4.4.1-2

(a) The second paragraph of Implementation a) under Objective 1 in Potable Water Supply and Distribution should be revised as follows:

"~~If any land area included in a~~ ***Prior to the submission of a*** *Development Permit* ***including land that*** *may require use of water associated with riparian water rights, an ~~executed~~ agreement between BBID and the CSD shall be ~~provided prior to the issuance of the first construction permit for any land included in the Development Permit~~* ***executed, or the Development Permit shall demonstrate that an existing agreement is still in force.*** *This agreement shall indicate that the parties have agreed to the terms under which BBID will wheel riparian water through their pumping and conveyance facilities to the Mountain House community as provided for in the BBID Water Services Agreement."*

(b) Policy a) under Objectives 4 and 5 in Potable Water Supply and Distribution (Appendix C) should be revised, as follows:

"a) Continued irrigation water and drainage service shall be provided to the land within the BBID service area located east of the project site and Patterson Pass Road throughout project buildout."

(c) Implementation Measure a) under Objectives 4 and 5 in Potable Water Supply and Distribution (Appendix C) should be revised, as follows:

"a) The appropriate specific plans shall identify how water and drainage services to the land east of the project and Patterson Pass Road within the BBID service area would be affected. They shall identify the infrastructure needed to maintain these services and when construction of these facilities would need to be completed (schedule may be expressed in terms of when certain parcels are developed)."

(d) Implementation Measure b) under Objectives 4 and 5 in Potable Water Supply and Distribution (Appendix C) should be revised, as follows:

"b) To ensure an uninterrupted source of irrigation water to undeveloped land, Development Permits, as applicable, shall include a detailed assessment of how irrigation water and drainage services to land within the project site that has not been or is not immediately planned for development would be affected. The assessment shall include consideration of interruption of irrigation patterns, temporary interruptions in service due to installation of underground utilities, and access to farm fields by workers, equipment and trucks. A plan for constructing/modifying facilities to maintain irrigation water and drainage services and a schedule for constructing these facilities shall be included."

Impact M4.4.1-3

The projected available supply of water to the project site from BBID (9,413 acre-feet per year) and from riparian water rights (possibly 2,600 acre-feet per year) is less than the project demand (12,874 acre-feet per year based on County Standards) and could result in an inadequate water supply for the project.

Water Demand. The applicant has calculated water demand for the project, with and without water conservation. The calculations were based on water demands for the City of Stockton and peaking factors specified in the San Joaquin County Improvement Standards (San Joaquin County Department of Public Works, 1991). The Improvement Standards specify minimum requirements for determining adequate water supply capacity. The water demand calculated by using City of Stockton data and based on the County Improvement Standards is presented in the Table 4.4-1.

TABLE 4.4-1

WATER DEMAND FOR PROJECT SITE

	Annual Water Demand (AF/year)	Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Maximum Hourly Demand (mgd)
Based on draft County Improvement Standards	12,874	11.5	25.3	43.7
Based on applicant's assumptions with water conservation	9,812	8.8	19.4	33.4
Based on applicant's assumptions without water conservation	11,419	10.2	22.4	38.8

Source: BASELINE, using unit factors contained in the Draft Master Plan.

The water demand calculated for the project, using the different bases, are significantly different. The average daily water demand calculated from the Improvement Standards at buildout is 11.5 million gallons per day (mgd) (Table 4.4-1), corresponding to an annual demand of 12,874 acre-feet per year. The average daily water demands projected in the Draft Master Plan was 8.8 mgd and 10.2

mgd, with and without water conservation, respectively (9,812 acre-feet per year and 11,419 acre-feet per year) (Table 4.4-1).

The Draft Master Plan proposes to incorporate requirements for low-flow shower heads, low-flush toilets, water conserving appliances, and lower-water-use landscaping into community design and building standards. A 14 percent reduction in potable water demand is expected by implementation of these features. A public information program to promote water conservation would also be implemented.

Water Supply. The applicant proposes to use up to 9,413 acre-feet of water per year from BBID, and up to 2,600 acre-feet per year from riparian water rights associated with land between Byron Road and Old River.

BBID has supplied an average of 8,246 acre-feet per year for use within the project site. Based on water balance calculations, the amount of water diverted by BBID is 12.4 percent more than that used within the district. This difference is attributed to evaporation and seepage from the distribution canals. The amount of water that BBID has been diverting for the project has been 9,413 acre-feet/year. BBID has agreed to divert up to this amount of water for use on the project site.

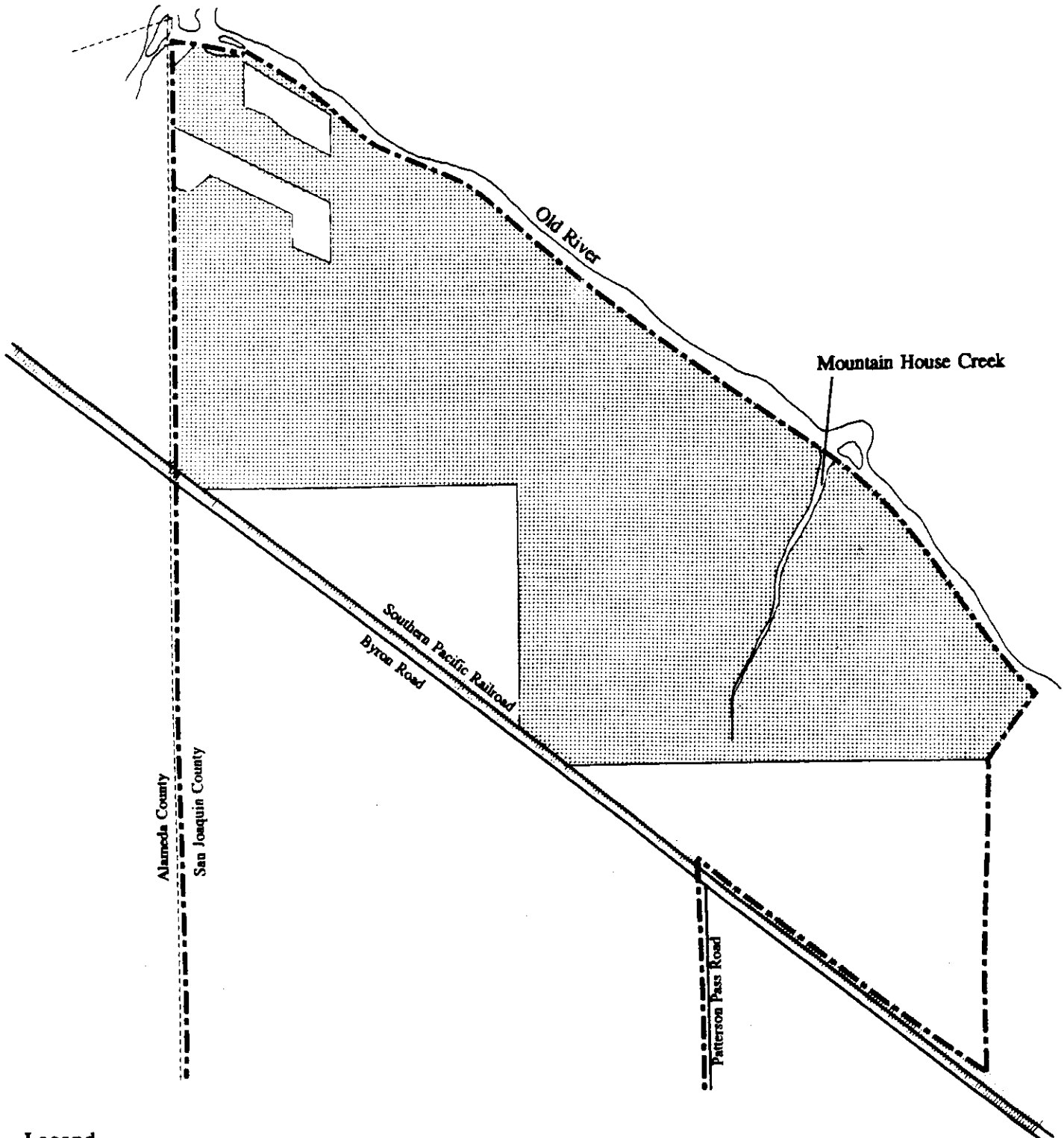
The Draft Master Plan identifies 1,262 acres of the land between Byron Road and Old River with riparian water rights (Figure 4.4-2). Riparian water rights are associated with lands immediately adjacent to a natural body of water. These rights allow the owner of the land to withdraw water from the water body for use on that land. If land with riparian water rights is subdivided, the rights may be retained for the entire acreage, even if some parcels are no longer adjacent to the water body, provided that the ~~new deeds~~ **documents of conveyance** state that riparian water rights are retained (Zolezzi, 1992). If riparian water rights were to be retained for the eligible parcels within the project site, the proposed Community Service District (or other public agency) may be able to take an assignment of these rights from the future property owners; BBID would then withdraw water from the Delta using these rights, and the Community Service District would treat and distribute the same volume of water to those same parcels. Although riparian water rights are not limited to specific volumes of water, the amount of water that may be withdrawn using these rights may be limited to the historic use on these acres to prevent infringement of the rights of other water diverters. The exact historic water use on these lands is unknown; however, given the crops planted on these lands, annual irrigation rate is estimated to be between three and four acre-feet of water per acre.

Using the applicant's water conservation demand calculations as a basis, overall unit water demand for the project **upon development** is 2.05 acre-feet per year per acre (9,812 acre-feet per year divided by 4,784 acres). If 2.05 acre-feet per year per acre were used on the 1,262 acres of land with riparian rights, the project may be entitled to approximately 2,600 acre-feet per year under riparian rights.[1]

[1] The Draft Master Plan states that 2,600 acre-feet of water is available for project use since this figure is based on an urban water demand factor of 2.05 acre-feet per acre, which is less than 3 to 4 acre-feet per acre used historically for agricultural crops. The net amount of water withdrawn for these lands upon development would be less than that historically withdrawn for agriculture and therefore would not infringe upon the rights of other water users in the Delta.

LAND WITH RIPARIAN WATER RIGHTS

Figure 4.4-2



BASELINE

Source: Neumiller & Beardslee, 1994.

R10114-BO.03 6/6/94

The San Joaquin County Counsel has completed a preliminary review of the amount of land within the project that has riparian water rights. The Counsel has determined that approximately 1,050 acres of land between Byron Road and Old River have riparian water rights. Another approximate 185 acres may have riparian rights but the Counsel has not yet confirmed that these lands have actually retained their rights. The Counsel concurs with the applicant's assessment of the feasibility of retaining the rights for the project upon development and that the volume of water available to the those lands would be equivalent to historic usage on the lands.

As discussed above, BBID's water rights may be diminished by future Federal and/or State regulatory actions. In anticipation of this possibility, and in response to the trend of decreasing water resources, a prudent approach would be to reduce potable water demand to the maximum extent possible. **The land north of Byron Road within the project site is sufficient for the disposal of the wastewater generated through Specific Plan I. The Draft Master Plan proposes two alternative permanent disposal areas. If these areas were not to become available in the future due to institutional or land availability constraints, the wastewater disposal option of restricted irrigation on agricultural lands, as proposed in the Draft Master Plan, could be limited.**

Mitigation Measure M4.4.1-3

(a) Implementation b) under Objective 2 in Potable Water Supply and Distribution (Appendix C) should be replaced with the following:

"b) ~~A Plan to set forth a program to determine the effectiveness and adequacy of water conservation measures shall be submitted for County review and approval prior to the submittal of the first Development Permit. The program shall be implemented by the Community Service District and shall periodically (at least once every five years) evaluate the percentage of water savings actually achieved relative to the calculations in the Master Plan, and specify actions that would be implemented if water demand exceeds that projected in the Draft Master Plan.~~ **Specific plans subsequent to Specific Plan I shall include a comparison of the actual water demand for the project with that calculated in the Draft Master Plan (assuming a 14 percent savings) to assess the effectiveness and adequacy of the water conservation measures. If the water savings specified in the Draft Master Plan were not achieved for a previous specific plan, the next specific plan shall specify additional actions that would be implemented to achieve the water conservation projections contained in the Draft Master Plan.** *Actions could include public information campaign, additional water conservation fixtures to be included in subsequent development, mandatory water rationing and on-site reclamation.* **Approval of the specific plan(s) shall be contingent on the adequacy of the proposed actions to increase water conservation effectiveness, if appropriate."**

(b) A new Policy should be added under Objective 1 in Potable Water Supply and Distribution (Appendix C), as follows:

*"b) Riparian water rights associated with land between Byron Road and Old River shall be reserved for project use. Until the parcels with riparian water rights are developed, the water diverted under riparian rights ~~shall~~ **must** be reserved for agricultural irrigation."*

~~*(c) A new Implementations under Objective 1 in Potable Water Supply and Distribution (Appendix C) should be added, as follows:*~~

~~*"c) The legal basis for retaining riparian water rights for project use shall be submitted to County Counsel for review prior to Master Plan approval."*~~

Impact M4.4.1-4

Drinking water may not be available to the project if the water treatment plant were not permitted and constructed prior to occupancy within the project.

The Draft Master Plan proposes a water treatment plant with an ultimate capacity to treat 19.4 mgd, the maximum daily demand. The plant would include raw water storage reservoirs, ozone contactors (primary disinfection), flocculator/clarifiers, filters, chlorinators and chlorine contact chamber (secondary disinfection), treated water storage reservoirs, and sludge drying beds. These facilities would be built on an 18.5-acre parcel of land near the western boundary of the site, just north of Byron Road.

The water treatment plant must be permitted by the California Department of Health Services, Office of Drinking Water prior to project construction. Initial monitoring of the source water, consisting of one year of quarterly sampling, would likely be required for a specific list of inorganic and organic compounds and physical characteristics. Based on these data, the treatment plant must be designed to treat the source water to attain the drinking water standards. The design must be approved by the Office of Drinking Water. Once the treatment plant is operational, routine monitoring of the source water and/or treated water delivered to customers is required to monitor compliance with the drinking water standards.

Mitigation Measure M4.4.1-4

Implementation a) under Objective 7 in Potable Water Supply and Distribution should be revised as follows:

"a) Review Process. A Development Permit shall be required for the water treatment plant and shall be approved prior to the approval of the first tentative map. ***The Development Permit shall provide a schedule for ensuring that the water treatment plant is fully operational prior to approval of the first final subdivision map, in accordance with the requirements of applicable state agencies."***

Impact M4.4.1-5

Water treatment sludge disposal could adversely impact local water quality or unnecessarily occupy scarce landfill space.

One of the primary functions of water treatment is to remove solids from the raw water. The sludge would consist of water, solids removed from the raw water, and coagulants such as alum and polymer that are added during the treatment process to improve solids removal. Sludge from the plant would be placed on drying beds prior to off-site disposal. The Draft Master Plan projects that the maximum daily sludge production rate would be 5,500 pounds per day at project buildout which would require 3.3 acres of sludge drying bed. The disposal alternatives considered would be landfilling, land spreading, and dedicated land disposal.

Sludge disposal options could include industrial reuse in addition to those proposed in the Draft Master Plan. Disposal at a Class III (municipal garbage) landfill may be possible if the sludge were dried to a minimum of 50 percent water content and contingent on available landfill space. However, landfill space has become a scarce resource; the California Integrated Waste Management Board is implementing regulations that are intended to minimize the amounts of waste disposed of at landfills by requiring implementation of all feasible options. Alternatives to landfill disposal of water treatment sludge are encouraged.

Land spreading of sludge would be to use the sludge on agricultural lands as a soil amendment. Dedicated land disposal would be to place the sludge on a land parcel specifically for disposal purposes and not to enhance crop growth. It would be necessary for the land to be controlled by

the Community Service District, either by ownership or long-term contract for both of these options. Industrial reuse would be to use the sludge as a raw material in a manufacturing process, or to recover aluminum oxide from the sludge, which may be added to enhance solid settling, for reuse.

The disposal of dried sludge may require a waste discharge permit from the Central Valley Regional Water Quality Control Board, depending on the alternative chosen. Inadequate drying and inappropriate disposal of sludge from the water treatment process could result in contamination of surface water and groundwater. Inadequate containment of the sludge during drying could result in runoff into nearby streams and storm drains. Disposal of inadequately dried sludge could enhance leaching of contaminants into the local groundwater.

Mitigation Measure M4.4.1-5

(a) Policy a) under Objective 10 in Potable Water Supply and Distribution (Appendix C) should be revised, as follows:

"a) Water treatment plant sludge shall be disposed of through industrial reuse, land spreading, and/or dedicated land disposal inside and in the vicinity of the Mountain House community to the maximum extent feasible in accordance with applicable regulations. Landfill disposal of sludge would be chosen only if the other alternatives were determined to be infeasible.

(b) The following new Policies should be added under Objective 10 in Potable Water Supply and Distribution (Appendix C):

"c) Industrial reuse of water treatment sludge shall be practiced to the maximum extent possible. The Community Service District shall consider other disposal options only if industrial reuse were infeasible.

"d) Adequate sludge treatment and drying facilities shall be provided at the plant through project build out."

(c) Implementation Measure a) under Objective 10 in Potable Water Supply and Distribution (Appendix C) should be revised as follows:

"a) Sludge Disposal Program. ~~*The Development Permit for the water treatment plant shall specify the water treatment sludge disposal method(s) that will be used throughout the development of Specific Plan I. Approval of subsequent specific plans shall be contingent on the identification of an acceptable means of water treatment sludge reuse/application/disposal. If landfill disposal were proposed, an agreement with a landfill that would accept the sludge must be provided with the Development Permit or subsequent Specific Plan. If land spreading or dedicated land disposal were proposed, then guarantees of adequate acres for sludge disposal must be provided in the Development Permit or subsequent specific plans.*~~ ***The initial Development Permit for the water treatment plant shall specify the water treatment sludge reuse/disposal method(s) that will be used throughout the development of Specific Plan I. Approval of subsequent specific plans shall be contingent on the identification of means of water treatment sludge reuse/application/disposal consistent with applicable local,***

state, and federal policies and regulations, and which minimizes landfill disposal. If landfill disposal were proposed, an agreement or "will serve" letter with a landfill that would accept the sludge for at least the next five years shall be provided with the initial Development Permit for the water treatment plant or subsequent specific plan. If land spreading or dedicated land disposal were proposed, then guarantees of adequate acres for sludge disposal for at least the next five years must be provided. Provisions for sludge disposal shall be updated annually so that there are always firm provisions for disposal for at least five years into the future."

(d) A new Implementation Measure should be added under Objective 10 in Potable Water Supply and Distribution (Appendix C), as follows:

"e) A detailed assessment of water sludge treatment and drying needs shall be provided in the Development Permit for the water treatment plant. The assessment shall provide the supporting calculations for determining sludge production rates, estimates on percent moisture content in raw sludge and dried sludge, application rates and design parameters for sludge drying beds, projected surface area requirements for the drying bed, and land required for sludge disposal (if appropriate)."

Impact M4.4.1-6

An uncontrolled release of hazardous materials associated with water treatment practices could potentially occur and impact water resources and public health.

Chlorine, a hazardous material, would be used for disinfection of the water. Accidental release of chlorine gas could have severe health impacts on downwind occupants; release of liquid chlorine (hypochlorite) could cause massive destruction to aquatic organisms if it were to reach nearby wetlands or Old River. In addition, emergency power for the raw water pump station and for the water treatment plant may require diesel storage tanks for use by generators. Accidental spills or long-term leakage of fuel may have acute and chronic effects on aquatic organisms, and may contaminate the water supply for the project and downstream users.

Mitigation Measure M4.4.1-6

(a) Objective 5 in Waste Management (Appendix C) should be revised, as follows:

"To insure the safe handling and to minimize the use of chemicals and other hazardous materials at the water and wastewater treatment plants."

(b) The following new Implementation should be added under Objectives 1 through 5 in Waste Management (Appendix C), as follows:

"i) Chemical Selection and Facilities. Prior to design of the plants, chemicals associated with water and wastewater treatment operations shall be carefully selected to minimize the hazard. Chemical handling and storage facilities shall be designed to minimize and effectively mitigate the potential for accidental releases, including such features as secondary containment, alarms, remote sensing instruments, and other safety features."

Impact M4.4.1-7

Water treatment plant capacity may be insufficient to meet project demand if any unit process in the plant were under-designed, or if plant expansion did not keep pace with project growth.

The Draft Master Plan proposes to construct the raw water pump station, conveyance pipeline, reservoirs, and treatment processes in increments. Ultimately, the plant would occupy 11 acres of land, including sludge drying beds. The remaining 7.5 acres on the designated land parcel would be used for additional water storage in later phases of the project, if required.

Mitigation Measure M4.4.1-7

*The following new Implementation should be added under Objective ~~7~~ **8** in Potable Water Supply and Distribution (Appendix C):*

*"**e**d) Calculations, including assumptions and process loading parameters, to support the determination of the amount of land necessary for raw water storage, different water treatment processes, treated water storage, sludge disposal, and support facilities shall be included in the Development Permit application for the water treatment plant."*

SPECIFIC PLAN I

No impacts were identified associated with Specific Plan I. Average daily water demand projected for Specific Plan I is 2.25 mgd (2,521 acre-feet per year) assuming water savings of 14 percent due to water conservation measures. Treated water storage would be approximately 6.4 mgd, to be located at the water treatment plant.

The location of the new raw water pump station by the California Aqueduct and route of the conveyance pipeline has not been finalized. **The location of the new pump station would require the approval of DWR and BBID; the alignment of the new conveyance pipeline between the pump station and the proposed water treatment plant would require the approval of BBID.** The capacities of the raw water pump station, pipeline, and treatment plant would be 5 mgd, approximately one-fourth of the capacity needed for project buildout. Flocculators/clarifiers, filters, sludge drying beds, and treated water storage reservoirs would be built in two phases. Raw water reservoirs, filter washwater recovery ponds, and ozone contactors would be built at one time.

Specific Plan I proposes to annex the 18.5-acre parcel that would be used for the water treatment plant to BBID. The parcels associated with the Old River Industrial Park would be de-annexed from Westside Irrigation District and annexed to BBID. These proceedings are proposed by the applicant to be completed prior to the submittal of the first Development Permit.

Specific Plan I proposes to keep the 120-foot elevation water canal in full operation without modification. The eastern segment of the 70-foot elevation canal would be abandoned in increments as land is developed. The eastern segment of the 155-foot elevation canal that passes through Mountain House Business Park would be replaced with a 10-inch diameter pipe and booster pump station. Agricultural drainage service is not expected to be interrupted.

Based on the description in Specific Plan I, it appears that irrigation water to the land between Central Mountain House and Byron Road may be interrupted when the 70-foot elevation canal is incrementally abandoned. This would be addressed in detail prior to submittal of applicable Development Permits that would cause the abandonment of the 70-foot elevation channel as required in the Draft Master Plan.

Specific Plan I estimates that sludge disposal would not be needed for at least five years because the sludge drying beds would have excess capacity during the initial few years. A Sludge Management Plan would be submitted to the County for review and approval prior to the submittal of the first

Development Permit. No significant impacts have been identified for Specific Plan I implementation above and beyond those identified for the Draft Master Plan.

4.4.2 WASTEWATER

Setting

Existing wastewater discharges in the project site include approximately 70 septic tank and leach field systems, dairy waste ponds, and agricultural drainage. The project site is not currently served by any public wastewater system. The septic tank leach field systems are associated with the private residences located along Grant Line Road and along and north of Byron Road. Two dairies operate along Patterson Pass Road within or adjacent to the project site with a total of approximately 1,400 head of cattle. Each dairy operates an animal waste holding pond where animal waste is deposited for solids settling. The liquids from the ponds are then used for irrigating adjacent lands. The solids are periodically removed and used as fertilizer.

BBID ~~owns~~ **runs** and maintains surface drainage and agricultural tile drainage systems which collect rainwater runoff, excess irrigation water, shallow groundwater, and agricultural leach water within the project site (Figure 4.4-3). Mountain House Creek is the primary surface drainage channel in the project area and BBID maintains a surface drainage (buried pipeline) along Patterson Pass Road. All surface drainage is discharged to Old River. BBID also maintains an agricultural tile drain system through the project site that receives the discharge from individual tile drains underlying private agricultural fields. The wastewater in the agricultural tile drain system is eventually discharged into the intake channel of the Delta-Mendota Canal (Figure 4.4-3).

The water quality of the existing wastewater discharges from the project site is limited to agricultural drainage data. In general, agricultural drainage quality exceeds the drinking water standards for electrical conductivity, chloride, and total dissolved solids. The only surface water quality data in the vicinity of the project site were collected at the Tracy Pumping Plant, located at the head of the Delta-Mendota Canal. The water quality meets the drinking water standards for chloride, sulfate, and total dissolved solids on most occasions (BASELINE, 1992b).

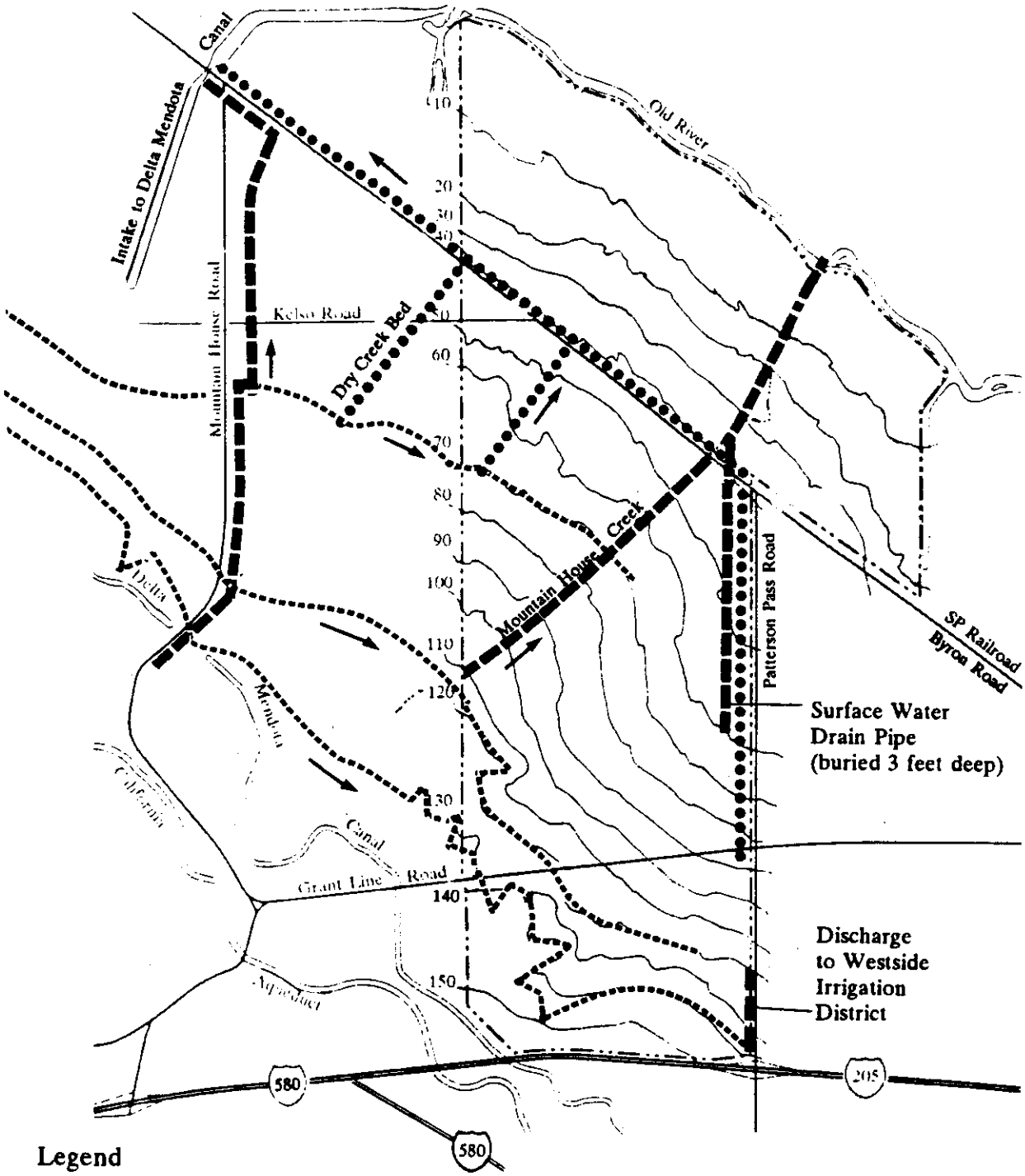
Impacts and Mitigation Measures

The potential environmental impacts of the proposed wastewater management system would be associated with the discharge of inadequately treated wastewater, inappropriate wastewater and sludge disposal practices, and release of hazardous materials associated with water facilities. A key measure in determining a significant impact for wastewater is whether the system meets Federal and State requirements. Not meeting these requirements could cause significant impacts to surface water and groundwater resources and to public health.

This section contains an analysis of wastewater generation, disposal, and treatment. Wastewater generation rates, for the new community only, will define the capacity of wastewater treatment plant and disposal system. The method of wastewater disposal will define the degree of treatment required and the types of unit processes that will be needed at the treatment plant.

BBID CANALS AND DRAINAGE SYSTEMS

Figure 4.4-3



BASELINE

MASTER PLAN

The applicant's projection of wastewater quantities for the project has been performed in accordance with the San Joaquin County Improvement Standards with the exception of the residential wastewater contribution as directed by the County Public Works Department (Lopez, 1990). The wastewater flow calculations were based on the proposed population and commercial, industrial, and school acreages. Projected average dry weather flow rates without water conservation would be 6.6 million gallons per day (mgd), and 5.7 mgd with water conservation. The applicant estimates that a 14 percent reduction in wastewater flow rates could be achieved by using water conservation measures such as low-flow toilets and shower heads.

The Draft Master Plan proposes to build and expand the wastewater treatment plant to accommodate flow rates of 0.473 mgd increments, with an ultimate design capacity of 5.7 mgd (total of 12 increments). The capacity of the plant would be sufficient to serve only the project development.

The location of the wastewater treatment plant would be on the eastern perimeter of the project site, north of Byron Road. Industrial land uses are planned for the area to the west and south of the plant; a regional park borders the north edge of the plant; and the inlet channel for the Westside Irrigation District, Wicklund Cut, runs along the eastern boundary. Agricultural and open space uses would remain east of the inlet channel.

The treatment method for the first three increments (sewage capacity of up to 1.4 mgd) would consist of initial screening, grit removal, biological treatment using facultative lagoons, and disinfection (Stage One). Further expansion of the plant would add a primary clarification process and employ an activated sludge process for biological treatment with the elimination of the facultative lagoons (Stage Two). When the plant reached a capacity of 2.8 mgd (approximately one-half of the buildout capacity) additional treatment processes may be added if wastewater reclamation were to be used within the project site, where human contact with the wastewater would be possible (Stage Three).

The applicant proposes to dispose of all wastewater by reclamation at one of three sites (Figure 3.11). Reclamation of all treated wastewater within the project or discharge to Old River have not been proposed. During at least the initial phases of development, treated wastewater would be transported to the chosen irrigation site where alfalfa and sudan grass would be grown. The Draft Master Plan does not proposed to use reclaimed water within the project site (in areas of potential human exposure) initially; the possibility of on-site reclamation would be considered during the second half of project development. Storage of the treated wastewater would be provided to supply irrigation water when needed, to contain the wastewater when irrigation would not be needed (including the winter months), and to isolate potentially inadequately treated wastewater.

The Draft Master Plan proposes two potential permanent reclamation areas, and one interim reclamation area. Fabian Tract, the preferred permanent reclamation area, is located north of Old

River and northeast of the project site ~~in the Primary Zone of the Delta~~[2] The alternative permanent site is located in Alameda County, adjacent to the western site boundary. The permanent site may be used either during Specific Plan I or not until after Specific Plan I buildout; during Specific Plan I, an interim area north of Byron Road may be used for treated wastewater disposal (Figure 3.11).

Senate Bill 1866 created the Sacramento-San Joaquin Delta-Protection Act which created the Delta Protection Commission. The Commission is developing a long-term resource management plan to protect and maintain the delta environment, including agriculture, wildlife habitat, and recreational activities. Hearings on the draft resources management plan are being conducted and a final plan is expected to be adopted during the fall of 1994. Policy P-3 under the Utilities and Infrastructure section of the draft plan states that wastewater treatment, storage, and disposal from sources located outside the Primary Delta Zone should not occur within the Primary Delta Zone, whenever possible. The project site is not located in the Primary Delta Zone; however, Fabian Tract is in the Primary Zone. The final resources management plan may preclude the use of Fabian Tract for storage and/or disposal of wastewater from the project.

The land required for reclamation would be dependent on the chosen site. If the permanent site were located on Fabian Tract, the Draft Master Plan estimates 1,590 acres would be needed for irrigation with 200 acres of storage ponds (maximum water depth of 15 feet). If the reclamation site were in Alameda County, adjacent to the west side of the project site, 1,360 acres of irrigated land and 480 acres of storage ponds (maximum water depth of 6.4 feet) would be needed. At the interim on-site area north of Byron Road, approximately 290 acres would be needed for irrigation with 120 acres of storage ponds for Specific Plan I. The acreages vary among the different locations because of engineering considerations of site-specific terrain and groundwater levels.

Impact M4.4.2-1

Inadequately treated reclaimed wastewater could impact local surface and groundwaters and public health. Insufficient reclamation sites could result in illegal and inappropriate discharge of treated wastewater.

A reclaimed wastewater irrigation system would be regulated by the Central Valley Regional Water Quality Control Board (CVRWQCB) and the California Department of Health Services, Office of Drinking Water (DHS). Requirements for using reclaimed wastewater for irrigation have been developed by the DHS and are included in Title 22 of the California Code of Regulations (CCR Title 22). The regulations include water quality standards, system reliability criteria, and optimal storage capacity. Requirements for bacterial and chemical quality of reclaimed water depend on the intended use.

A permit, referred to as Waste Discharge Requirements (WDR), must be obtained from the CVRWQCB for the operation of the wastewater treatment and reclamation. The DHS may work

~~[2] The primary zone is defined in the Sacramento-San Joaquin Delta Protection Act.~~

with the CVRWQCB in preparing the WDR. An engineering report, containing a design of the treatment and reclamation facilities, must be submitted to both agencies, and a Report of Waste Discharge must be submitted to the CVRWQCB to formally initiate the permitting process.

Thirty acres of land have been allocated for the wastewater treatment plant, to accommodate all treatment processes through project buildout. The Draft Master Plan proposes to expand the wastewater treatment plant by increments of 0.473 mgd. Twelve increments would be constructed by project buildout. Design and construction of each additional increment would be completed before the wastewater generation rate of the community exceeded the then existing capacity. The Draft Master Plan proposes to allow lead time for the design and construction of plant expansion, but does not provide a mechanism for ensuring that expansion precedes need.

With the exception of Specific Plan I, agricultural land needed for wastewater reclamation during subsequent specific plans would be secured prior to subsequent specific plan approvals. ~~Since neither of the two potential permanent reclamation sites has been secured by the applicant, the disposal option of restricted irrigating on agricultural land, as proposed in the Draft Master Plan, may not be achievable.~~ **The land north of Byron Road within the project site is sufficient for the disposal of the wastewater generated through Specific Plan I. The Draft Master Plan proposes two alternative permanent disposal areas. If these areas were not to become available in the future due to institutional or land availability constraints, the wastewater disposal option of restricted irrigation on agricultural lands, as proposed in the Draft Master Plan, could be limited.** Alternative wastewater disposal methods may need to be considered, including on-site reclamation, discharge to Old River, and transporting wastewater to other lands for restricted use irrigation.

The Draft Master Plan does not propose to dispose of reclaimed water by irrigation within the project site. The Draft Master Plan indicates that after ~~Specific Plan II buildout~~ **the wastewater flow rate reaches 2.8 mgd, one-half of the flow rate estimated for project buildout**, the option of providing additional processes at the wastewater treatment plant to produce reclaimed water that would be suitable for on-site reclamation (safe for human contact) would be considered. On-site reclamation would require the construction of advanced wastewater treatment processes to produce higher quality water required for use where human contact is possible; a reclaimed ~~waste~~water distribution system, **separate from the potable water system,** would need to be installed to transport the water from the plant to the points of use. Although using reclaimed ~~waste~~water on-site would require less off-site land for disposal and reduce **project** potable water demand, thereby increasing the community's self sufficiency, the Draft Master Plan proposes total off-site wastewater disposal because on-site reclamation would ~~not be cost effective~~ **cost more than off-site reclamation**.

The Draft Master Plan designates about 240 acres of neighborhood and community parks, and about 440 acres of other open space (including golf course, regional park, landscape easements, and buffers) which could be used for irrigation with reclaimed water. **If the neighborhood parks, community parks, and the golf course were irrigated with reclaimed water (totaling approximately 540 acres) at a rate of 2.7 acre-feet per acre per year, then approximately 23 percent of the total wastewater flow rate at project buildout could be disposed of on-site. Road buffers and medians and other landscaping at public and commercial areas could also be irrigated with reclaimed water.** Another on-site reclamation opportunity would be gray water systems for commercial/industrial uses. **Examples of commercial/industrial uses of reclaimed water include vehicle and bus washing operations, dust control on construction projects, cooling towers for manufacturing plants, and toilet flushing in public or commercial facilities.**

Numerous wastewater treatment plants in California have been upgraded to produce reclaimed water suitable for unrestricted use (safe for human contact). One of the main factors that prevents the widespread use of reclaimed water in areas near these treatment plants is the lack of a distribution system to bring the reclaimed water to different points of use. Installation of a reclaimed water distribution system after an area has been developed is disruptive because the pipeline alignment would have to be excavated; retrofitting a developed area represents a significantly higher expense than if the system were installed as the area is

Initially developed when other buried utilities are also installed. If a reclaimed water distribution system were to be constructed within the project site as each new area were developed, widespread on-site use of reclaimed water could be implemented as soon as the wastewater treatment plant were upgraded to provide tertiary treatment. The Draft Master Plan proposes to upgrade the wastewater treatment at the beginning of Specific Plan [illegible]he upgrade could include the tertiary treatment needed to produce unrestricted use of reclaimed water.

On-site wastewater disposal has fewer potential environmental impacts than the off-site alternatives identified in the Draft Master Plan. Land within the project site will already be taken out of agricultural use and existing habitat would be disturbed upon development. On-site reclamation would not further exacerbate land use and wildlife habitat impacts for the project. Restricted reclamation at Fabian Tract would prevent the growth of the food crops currently grown on the land. Storage of millions of gallons of treated wastewater on Fabian Tract represents a flood hazard and could allow the discharge of the reclaimed water to adjacent waterways via the buried agricultural drains. Construction of a pipeline to deliver the treated wastewater to Fabian Tract may impair existing levees along Old River. The alternative permanent reclamation site, land in Alameda County adjacent to the project site, is potential kit fox habitat. Reclamation on these lands may not render the area suitable for kit fox or for Swainson's Hawk mitigation lands. Minimizing off-site disposal would lessen the corresponding impacts.

Exporting the treated wastewater to irrigate sites other than those identified in the Draft Master Plan may also be an alternative. **Irrigation on other sites would require a separate environmental review.** The potential environmental impacts associated with wastewater export would depend on the area to which the wastewater were exported and the type of crops receiving the wastewater. If the wastewater were to be used for irrigating non-food crops in areas of no human contact, secondary treatment would suffice. The impacts associated with disposal anywhere would be similar to those identified for the alternate permanent site in Alameda County. If food crops were to be irrigated with tertiary treated water, the treatment would have to meet the requirements of the CVRWQCB and DHS. Depending on the location of disposal, biological resources may be affected.

Potential discharge of treated wastewater to Old River would require an National Pollutant Discharge Elimination System (NPDES) permit from the CVRWQCB. The NPDES permit is distinct from the wastewater reclamation permit described previously. The CVRWQCB Water Quality Control Plan (Basin Plan) strongly encourages land disposal of treated wastewater over surface water discharge. A surface water discharge would not be allowed if there were other technically and economically feasible disposal options. Any wastewater discharges to Old River would require adherence to pollutant limits and possibly discharge restrictions, as described below.

Discharge of treated wastewater to Old River may impact other Delta water users. Old River flows directly into the intake for the Delta-Mendota Canal and the Clifton Court Forebay (intake for the

California Aqueduct). These water projects export large volumes of water to central and southern California for municipal and agricultural uses. The Bureau of Reclamation, operator of the Delta-Mendota Canal, has previously expressed objection to the potential wastewater discharge to Old River (Capener, 1990) In addition, the South Delta Water Agency provides irrigation water in the vicinity of the project and is concerned that the potential wastewater discharge may increase the salinity of the water, lowering the water quality of the irrigation water available to its customers (Whitridge, 1994).

If an NPDES permit were to be issued for discharge to Old River, it would likely contain effluent limits on conventional pollutants (e.g., solids, oxygen demand, pathogens) as well as toxic pollutants (e.g., metals, organics, pesticides). Conventional pollutant effluent limits would include at a minimum the following items (Mosbacher, 1994):

- Biochemical Oxygen Demand - 10 or 20 milligrams per liter (mg/L)
- Total Suspended Solids - 10 or 20 mg/L
- Coliforms - 2.2 Most Probable Number

There would also likely be limits on the incremental increase in the temperature and change in the pH of the receiving water caused by the discharge.

Effluent limits on toxic pollutants would depend primarily on two factors: 1) water quality standards that is expected to be adopted by the SWRCB in the form of State wide plans or issued by the U.S. Environmental Protection Agency (EPA) in the form of the National Toxics Rule for California[3]; and 2) water circulation patterns in the south Delta. Both the SWRCB and EPA may be establishing water quality standards for surface waterways in California that would include a minimum of 126 priority pollutants. These standards represent maximum concentrations allowable in waterways to ensure the reasonable protection of beneficial uses of the waters and the prevention of nuisance.

Water circulation pattern in the south Delta is likely to change in the near future, but the details have not been determined at this time. The main uncertainty involves proposed modifications to water management practices that have been proposed in the South Delta Water Management Plan (DWR and USBR, 1990). The original EIR for the Plan is being updated and a Draft EIR on the updated Plan may be released by late summer 1994 (Chung, 1994). The preferred alternative identified in the original EIR would include construction and operation of a series of tide gates, and enlargement of certain channels and Clifton Court Forebay, which are designed to increase water surface elevations and improve water quality in selected channels within the south Delta, and to add flexibility to the operation of the State Water Project. One of the proposed tide gates would be located on Old River adjacent to the project. These proposals could drastically alter the flow patterns

[3] It is unknown which agency will be finalizing water quality standards first. The EPA has indicated that they may be proposing National Toxics Rule (containing water quality standards) applicable to California in November 1994; the SWRCB may also initiate the State rule making process to adopt water quality standards. Regardless of which agency establishes the standards, it would be applicable to all surface water discharges allowed under an NPDES permit.

within the south Delta and largely determine the potential impact of wastewater discharged from the project.

The Draft Master Plan projects the wastewater generation rate at project buildout would be 5.7 mgd. To provide a preliminary assessment of the effects of discharge to Old River, hydraulic modelling of the water quality effects of wastewater discharge to Old River at the eastern boundary of the project was performed for the original Final EIR (BASELINE, 1992a).[4]

The CVRWQCB would require the applicant to demonstrate that land disposal of wastewater would not be feasible before considering an NPDES Permit for discharge to Old River. If an NPDES permit were considered, the applicant would have to demonstrate that the discharge would not violate water quality standards for toxics (once they have been established) and not otherwise affect the beneficial uses of Old River. Factors affecting beneficial uses may include potential increase in salinity in Old River, changes in pH and temperature in Old River, potential interference with the passage of aquatic life in the river, and potential aquatic toxicity caused by the wastewater discharge.

The required treatment processes necessary for discharge to Old River would be determined by the effluent quality necessary to not violate water quality standards or impair beneficial uses. Tertiary treatment (or advanced wastewater treatment) beyond conventional biological treatment (for the removal of organics that would exert an oxygen demand on the receiving water) may be required. There may also be restrictions on when discharge to Old River would be allowed, contingent on water circulation patterns in the south Delta.

Reclaimed wastewater generally has higher salt and trace metal concentrations than water from an inland surface water source. Long-term irrigation with reclaimed water may cause salts and trace metals to accumulate in the soil and render the land unsuitable for crop cultivation. The Draft Master Plan contains a Salt and Metals Plan which describes suitable reclaimed water quality for use

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[4] A wastewater discharge rate of 6.5 mgd was assumed to occur from November to April. The model was used to predict the effects during a dry winter (1963-1964) and a wet winter (1974-75), both under current flow conditions and under the preferred alternative identified in the original EIR on the South Delta Water Management Plan (DWR, 1990). The dry winter preferred alternative scenario assumes the operation of a tide gate on Old River adjacent to the project.

The maximum component of wastewater discharged from the project that may reach the intake of the Delta-Mendota Canal and California Aqueduct was 0.65 and 0.09 percent, respectively, under all the scenarios considered. The highest percentage of wastewater in Old River one mile from the discharge point would be approximately seven percent. These scenarios correspond to a dry winter with the operation of the proposed tide gates. The model was also used to predict the incremental increase in total dissolved solid (a measure of salinity) concentration at various locations caused by wastewater discharge from the project. It was assumed that the background total dissolved concentration in Old River was 150 mg/L which corresponds to a flow condition where there is a net southward movement of water in the Delta from the Sacramento River toward the intakes for Delta-Mendota Canal and the California Aqueduct. The largest incremental increase in total dissolved solids concentration that may affect the intake water for the Delta Mendota Canal and the current intake for the California Aqueduct was predicted to be approximately 2.3 mg/L and 0.4 mg/l, respectively, under all the scenarios analyzed. Similarly, the largest total dissolved solids increase in Old River one mile from the discharge would be approximately 11 mg/L under the different scenarios.

on crops and monitoring of the soil and reclaimed water quality. Selection of long-term crops would be made based on the salt concentrations in the reclaimed water. Trace metals are not expected to be a problem, since non-residential discharges to the wastewater system would be regulated under a pretreatment program. However, pre-disposal trace metal removal at the treatment plant would be provided if any of the concentrations exceeded crop tolerance levels.

The Salt and Metals Plan, part of the Reclamation Plan proposed, would need to contain a schedule for the long-term monitoring of reclaimed water, soils irrigated with reclaimed water, and wastewater discharged from agricultural drains. Results should be used to set irrigation rates, crop selection, and soil amendment programs. It should also describe thresholds that would represent unacceptable conditions and the corresponding actions needed to remedy the conditions.

Old River water is currently being used for irrigation on Fabian Tract, the preferred permanent wastewater reclamation site. The fields under cultivation have buried agricultural drainage systems that were intended to maintain groundwater levels below the crop root zones. The drains serve a secondary purpose of carrying away excess irrigation water, which has seeped through the shallow soils. Using excess irrigation water is the primary means for leaching salts and metals from the root zone, to prevent excess salt buildup. According to the Draft Master Plan, the function of at least 15 percent of the water applied to agricultural fields is for leaching. Higher percentage of leaching water may be necessary to maintain adequate salt and trace metal concentrations in the soil to sustain crop growth. Since the drains discharge to a nearby surface water way, such as Old River or Grantline Canal, the use of reclaimed water may cause an increase in the amount of salts and trace metals discharged into nearby surface waters.[5]

Two hundred acres of wastewater storage ponds would be needed at project buildout if Fabian Tract were used as the reclamation site. Maximum water depth in the ponds would be 15 feet. Soils on Fabian Tract have moderately low to moderate permeabilities (The SWA Group, 1993a); if the existing land surface were used as the pond bottoms, the volume of wastewater seeping into the ground would be significant. Assuming a permeability of 10^{-6} cm/s (corresponding to a low permeability material similar to clay), a water depth of 15 feet, and an unsaturated zone of five feet, the volume of water discharged from the bottom of the ponds into the groundwater would be 0.63 mgd, or eleven percent of the wastewater volume at project buildout. Depending on the proximity of agricultural drains to the storage ponds, the wastewater may be added to drainage water and discharged to a nearby surface waterway.

Mitigation Measure M4.4.2-1

(a) Objective 1 in Wastewater Treatment Plant (Appendix C) should be revised, as follows:

[5] The Draft Master Plan states that excess irrigation water that produces surface runoff would be collected and reapplied to the fields. The Draft Master Plan does not propose to capture the excess irrigation water that percolates through the soil and enters the subsurface drainage system.

"To ensure that wastewater treatment processes be selected, designed, constructed, and operated to provide adequate treatment capacity and water quality for the method(s) of disposal throughout project buildout."

(b) Policy a) under Objectives 1 and 2 in Wastewater Treatment Plan should be revised, as follows:

"a) Initial treatment processes shall be selected to meet effluent quality required for restricted use reclamation such as irrigation of agricultural lands."

(c) Two new policies should be added under Objectives 1 and 2 in Wastewater Treatment Plant (Appendix C), as follows:

"c) Additional wastewater treatment processes shall be provided if unrestricted use reclamation, including irrigation on-site, industrial/commercial reuse, or surface water discharge were implemented.

"d) Expansion of the wastewater treatment plant shall be constructed and completed before the existing capacity has been exceeded."

(d) Implementation b) under Objectives 1 and 2 in Wastewater Treatment Plant should be revised, as follows:

"b) Ultimate Treatment. The ***facultative lagoons shall be replaced by activated sludge treatment, or other similarly effective process(es), to provide*** *secondary treatment* ~~*process to be used*~~ *after Specific Plan 1* ***buildout is complete*** ~~*shall be activated sludge*~~*. Additional treatment processes shall be added to produce the required effluent quality necessary for disposal options other than restricted use reclamation, if implemented."*

(e) Implementation c) under Objectives 1 and 2 in Wastewater Treatment Plant should be revised, as follows:

"c) Level of Treatment. Initially, all process designs shall be sufficient to treat effluent for surface irrigation of crops and/or landscape irrigation with limited public access. Processes shall be upgraded or replaced to produce higher quality effluent suitable for other disposal methods; such other disposal methods may include irrigation with potential human contact, if on-site reclamation and discharge to Old River were implemented."

(f) Implementation f) under Objectives 1 and 2 in Wastewater Treatment Plant (Appendix C) should be revised, as follows:

"f) Development Permit. A Development Permit shall be required for the wastewater treatment plant ***and shall be approved prior to the approval of the first tentative map.*** *The permit application shall include a schedule for design, construction, and permitting for the plant to ensure that the wastewater treatment and reclamation*

facilities would be operational prior to the approval of the first ~~Tentative~~ ***final subdivision*** *map. A separate Development Permit shall be required for each ~~major~~ change in ~~wastewater treatment or~~ disposal method* ***or area*** *~~(e.g., change from facultative lagoon to activated sludge, addition of tertiary treatment)~~, or with each specific plan after Specific Plan I, whichever is sooner.* ***Each Development Permit for the wastewater treatment plant shall describe the mechanism by which the construction of additional facilities for incremental expansion in treatment capacity shall be completed before the existing capacity is exceeded.***"

(g) The following new Implementations should be added under Objectives 1 and 2 in Wastewater Treatment Plant (Appendix C):

~~"g) Each Development Permit for the wastewater treatment plant shall describe the mechanism by which the construction of additional facilities for incremental expansion in treatment capacity shall be completed before the existing capacity is exceeded.~~

"~~h~~ ***g)*** *~~The initial Development Permit for the wastewater treatment plant shall describe a wastewater flow rate monitoring program and specify the actions that would be taken if wastewater flow rates exceeded projections made in the Draft Master Plan. Wastewater flow rate entering the treatment plant shall be compared to the volume estimates used to design the plant. Flow rate monitoring shall be performed by the Community Service District on a routine basis (with time between monitorings not to exceed five years). If flow rates were higher than those predicted, assuming a 14 percent reduction due to water conservation measures, mitigation measures shall be implemented, including additional conservation measures in subsequent new construction.~~* ***Specific plans subsequent to Specific Plan I shall include a comparison of the actual wastewater generation rates for the project with those calculated in the Draft Master Plan. If wastewater flow rates were higher than those predicted in the Draft Master Plan, assuming implementation of water conservation measures, then the next specific plan shall specify actions that would be implemented in the next specific plan to reduce the wastewater generation rates. Approval of the specific plan(s) shall be contingent on the adequacy of the proposed actions to reduce wastewater generation rates to those calculated in the Draft Master Plan, if appropriate.***"

(h) Objective 1 in Wastewater Reuse Program (Appendix C) should be revised, as follows:

"All wastewater from the project shall be reclaimed to the maximum extent possible by assuring that the best beneficial use of the wastewater is implemented throughout the life of the project."

(i) Policy c) under Objective 1 in Wastewater Reuse Program (Appendix C) should be revised, as follows:

*"c) Water reclamation facilities shall be designed and operated to ~~ensure no~~ **minimize** physical adverse effects on crop production, public health, groundwater, or surface waterways from agricultural irrigation with reclaimed water. ~~Irrigation with reclaimed water shall not result in~~ **Physical adverse impacts include** salt and trace metal buildup in soil that prevents the growth of crops, or ~~in adverse~~ impacts to surrounding surface waterways due to discharge from agricultural drainage systems underlying the reclamation site."*

(j) Implementation a) under Objective 1 in Wastewater Reuse Program (Appendix C) should be replaced with the following:

"a) A Reclamation Plan shall be approved by the County prior to the submittal of the Development Permit for the wastewater treatment plant. The Reclamation Plan shall include an engineering report and a schedule for ensuring that the design, construction, and permitting of the reclamation facilities would be completed prior to the approval of the first Tentative Map. The Reclamation Plan shall be updated and approved prior to the approval of specific plans subsequent to Specific Plan I."

(k) Implementation b) under Objective 1 in Wastewater Reuse Program (Appendix C) should be revised, as follows:

"b) Specific Plan Requirement. With the exception of Specific Plan I, no specific plan shall be approved unless guarantee has been provided to the County that sufficient land to meet the required storage and disposal acreage is under the control of the plan applicant or the community, and the consent of all ~~*involved jurisdictions*~~ ***agencies which have the legal responsibility to approve and/or issue permits*** *has been obtained. Alternatively, if sufficient off-site land cannot be secured, then on-site reclamation shall be practiced to the maximum extent possible. Other disposal options, including discharge to Old River and piping the effluent to non-contiguous lands for irrigation, shall be considered, if necessary.* ~~*If disposal methods other than restricted use reclamation on the proposed sites were proposed, no specific plan shall be approved unless detailed environmental review of the method(s) has been performed, all necessary permits and land acreage have been secured, and detailed plans for constructing new and upgraded facilities have been developed.*~~ ***If future specific plans propose an interim or permanent wastewater reclamation at a site other than the sites identified in the Master Plan, all the policies in the proposed Master Plan, and all the adopted mitigation measures, shall be applicable to the proposed alternative reclamation site(s). Any alternative wastewater reclamation site shall also be subject to the permitting requirements of the Central Valley Regional Water Quality Control Board and the Department of Health Services. Prior to the approval of any specific plan utilizing an alternative wastewater reclamation site not specifically identified in the Master Plan/Specific Plan I EIR, site-specific environmental review shall be performed (including but not limited with respect to human contact, biological impact, crop types, etc.) and additional mitigation measures will be adopted to mitigate any site-specific environmental impacts not previously addressed."***

(l) Implementation h) under Objective 1 in Wastewater Reuse Program (Appendix C) should be replaced, as follows:

"h) Monitoring. A detailed Salt and Trace Metal Management Plan shall be submitted as part of the reclamation plan to ensure that irrigation with reclaimed water is a viable long-term disposal option and to ensure minimization of salts and trace metals that are discharged to surface waters via the agricultural drains."

(m) The following new Implementation Measures should be added under Objective 1 in Wastewater Reuse Program (Appendix C), as follows:

"j) The location and design specifications for the wastewater storage ponds shall be provided in the Reclamation Plan. The location of agricultural drains within a one-half mile radius of the storage ponds and the sources and characteristics of soil that would be used to construct the ponds shall be identified. The design specifications shall address levee and pond bottom permeability, levee stability, and flood protection.

"k) An estimate shall be made of the wastewater volume that may seep from the ponds, and an assessment of potential flow paths from pond seepage shall be determined for the interim and potential permanent reclamation sites. The result of the assessment shall be

submitted to the CVRWQCB for determination of whether agricultural drain discharge from land irrigated with reclaimed water would be regulated as a point-source discharge under the NPDES program. The determination by the CVRWQCB shall be provided in the reclamation plan. If it appears likely that the CVRWQCB would regulate the agricultural drain discharge, then assurance that the discharge would be allowed must be documented prior to approval of the reclamation plan."

(n) A new Policy should be added to Objective 3 in Wastewater Reuse Program as follows:

"f) The project shall be constructed such that on-site wastewater reclamation could be practiced to the maximum extent possible upon the completion of an advanced wastewater treatment plant with minimal retrofitting of developed areas."

(o) A new Implementations should be added to Objective 3 in Wastewater Reuse Program.

"g) <u>On-Site Reclamation.</u> A reclaimed water distribution system shall be installed throughout the project upon initial development. The system shall provide for transmission of treated wastewater from the treatment plant to all public landscaped areas, parks, industrial and commercial areas, and other areas where reclaimed water could reasonably be used in the future. Major reclaimed water pipelines shall be sized to serve "downstream" areas upon development."

(p) A new Implementation should be added under Objective 3 in Potable Water Supply and Distribution, as follows.

"d) <u>On-Site Reclamation.</u> Upon operation of the advanced wastewater treatment plant to produce reclaimed water suitable for human contact, on-site reclamation with reclaimed water shall be used to replace potable water to the maximum extent possible. The Community Services District, and/or other public municipal agencies, shall use reclaimed water for irrigation of public areas and operations (e.g., equipment/vehicle/bus washing). The Community Services District shall ensure that industrial and commercial operations that use water for washing or processing be required to use reclaimed water to the maximum extent possible.

Impact M4.4.2-2

Illegal discharge of waste and wastewater to the intake channel of the Delta-Mendota Canal via agricultural drains may occur if the drains were not abandoned upon development.

The purpose of agricultural drains is to carry away excess irrigation water and to keep potential shallow groundwater below the crop root zone. In an urban environment, these drains represent potential conduits for improperly disposed waste or wastewater to be discharged. The major drains under the project site are operated by BBID and discharge into the intake channel of the Delta-Mendota Canal **authorized by a NPDES permit from the CVRWQCB**. Individual drain systems

maintained by farmers discharge into the BBID drains. All agricultural tile drains should be removed and/or permanently abandoned upon development. **Abandonment of BBID drains will be subject to the rules and regulations of BBID.**

Mitigation Measure M4.4.2-2

(a) A new Policy should be added to Objectives 4 and 5 in Potable Water Supply and Distribution (Appendix C), as follows:

"Obsolete agricultural irrigation and drainage facilities shall be removed or properly abandoned upon development of an area."

(b) Implementation c) under Objectives 4 and 5 in Potable Water Supply and Distribution (Appendix C) should be revised, as follows:

"c) Farm Drainage Requirements. All Development Permit submittals shall include a report on the impact on existing farm drainage facilities. The report shall include a map of all existing farms drains that flow through the area covered by the permit or map, an assessment of the impact on the drainage system, and a determination of the planned dispossession of the system. The potential for drains to act as conduits for waste or wastewater to be discharged to nearby surface waterways shall be eliminated. Drains are to be identified on the maps as to type, location, and function. Portions of a system that would be abandoned shall be removed unless they could be incorporated into the storm drainage system."

Impact M4.4.2-3

An inadequate wastewater sludge treatment and disposal system could adversely impact water resources and public health. Scarce municipal landfill space may be occupied by sludge if alternative disposal/reuse options were not aggressively pursued.

The Draft Master Plan predicts that wastewater sludge disposal would not be needed during the first part of the project while biological treatment would be provided by facultative lagoons. Solids that settle in the lagoons would continue to decompose in the anaerobic environment at the bottom. The extended sludge retention time in the lagoons, and hence extended treatment time, would substantially reduce the sludge volume. Sludge treatment and disposal would become necessary when facultative lagoons would be replaced by activated sludge treatment. This would occur in Specific Plan II. At project buildout, the Draft Master Plan projects that 11,300 pounds per day of treated sludge would require disposal if only secondary treatment were provided. If the sludge were dried to 50 percent water content, the volume of sludge would be 13 cubic yards per day. An additional 5,500 pounds per day, or 7 cubic yards per day at 50 percent moisture of sludge would be produced at build out if tertiary treatment were also provided to produce reclaimed wastewater that may be used to irrigate areas within developed areas.

Sludge treatment and drying processes would be built at the same time that activated sludge biological treatment units would be built to replace the facultative lagoons. The proposed sludge treatment processes would consist of dissolved air floatation thickening (to decrease the water content of the waste activated sludge), anaerobic digestors (to further decompose organic materials in the sludge), and sludge drying beds (to decrease the water content of the treated sludge).

The Draft Master Plan identifies several options for sludge disposal. These include disposal at a Class II or III landfill, agricultural land spreading (soil amendment), dedicated land disposal, and composting. Sludge disposal options would not be further evaluated until treated and dried sludge becomes available (i.e., after the plant is expanded beyond 1.4 mgd). Sludge characterization would be the first step in determining viable disposal options. Until other options were identified and arranged, the sludge would be transported to a landfill for disposal.

The sludge from the project should not be a hazardous waste by Federal or State criteria, with the implementation of effective nonresidential pretreatment, public education, and hazardous waste collection programs. Even for nonhazardous sludge, the regulatory framework regarding sludge disposal is complex because it is regulated by multiple Federal, State, and local agencies. Federal regulations in Part 503, Title 40 of the Code of Federal Regulations specify performance-based standards, including maximum contaminant concentrations in sludge, for different disposal options. Disposal of sludge to land is regulated by the California Regional Water Quality Control Boards, whose mandate is to protect surface and groundwater resources. The California Integrated Waste Management Board implements regulations that are designed to minimize the amounts of waste, including sludge, disposed of at landfills by implementation of all feasible options. All of the regulations applicable to sludge disposal are intended to minimize the adverse impact of sludge disposal on the environment and to protect human health and safety from potential exposure to the sludge.

Beneficial reuse of sewage sludge is strongly encouraged by both Federal and State regulations. In the past, sewage sludge has generally been considered a waste that required either landfill disposal or dedicated land disposal (depositing sludge on designated land which is not used for other

purposes). Since landfill space has become scarce and traditional sludge disposal practices have caused contamination of water resources, it is advantageous to consider sludge as a resource rather than a waste. Sludge contains significant nutrients and microorganisms that could be directly used as an agricultural soil amendment, or could be composted for soil amendment application by individuals.

The evaluation of sludge disposal options should consider both economic and environmental benefits and impacts. Landfilling of sludge should be chosen only if all other alternatives have been rejected based a thorough benefit/impact analysis. In addition, the evaluation process should be initiated as early as possible, to allow lead time for arranging for potential soil amendment sites or compost markets, if appropriate. The primary factor that limits potential beneficial sludge use options is based on the metals content of the sludge. An aggressive pretreatment program to regulate non-residential discharges to the sewer would be crucial to maximize sludge disposal options.

Mitigation Measure M4.4.2-3

(a) The following Policies should be added under Objective 1 in Sludge Disposal (Appendix C), as follows:

"b) Beneficial reuse of sewage sludge shall be implemented to the maximum extent possible to minimize sludge disposal at a landfill or at a dedicated site.

"c) Sludge quality from the project shall not limit sludge reuse options. This shall be accomplished via effective pre-treatment, public education, recycling programs, and additional treatment, if necessary."

(b) Implementation b) under Objective 1 in Sludge Disposal (Appendix C) should be revised, as follows:

"b) Interim Disposal. If the sludge meets acceptance criteria of a specific landfill, the sludge shall be initially disposed of ~~in the Foothill or another acceptable~~ ***at an appropriately permitted*** *landfill. Sludge shall meet nonhazardous classification and shall be dried to a minimum of 50 percent solids prior to disposal at a landfill. The duration of landfill disposal shall not exceed two years from the startup of the activated sludge treatment process, unless the sludge disposal program described in Implementation e) concludes that landfill disposal of wastewater sludge is the only viable option."*

(c) Implementation e) under Objective 1 in Sludge Disposal (Appendix C) should be revised, as follows:

"e) Initial Wastewater Sludge Disposal Plan. Within one year after the startup of the ~~activated sludge~~ ***permanent secondary*** *treatment process, the Community Service District shall submit an Initial Wastewater Sludge Disposal Plan to the County and other appropriate agencies for review and approval. The Plan shall document the sludge characterization findings, a*

detailed impact/benefit analysis of sludge disposal options, and a proposed sludge disposal method for the duration of the current specific plan."

(d) The following new Implementations should be added under Objective 1 in Sludge Disposal (Appendix C), as follows:

"f) Sludge disposal options shall be evaluated as early as possible, not later than one year after the startup of the ~~activated sludge~~ ***permanent secondary*** *treatment process, to allow for early identification of disposal options. Evaluation shall include sludge characterization, survey of potential sites where sludge may be used as a soil amendment, and assessment of viability of the compost market.*

"g) In all specific plans where wastewater treatment sludge requires disposal, the specific plans shall ~~contain~~ ***identify*** *the proposed method(s) of sludge disposal for the duration of the plans.* ***The CSD may subsequently adopt other sludge disposal options provided the new method(s) will achieve an equivalent or higher degree of environmental and public health protection, as determined by the County, and meets all applicable regulatory requirements. The County shall be notified of the proposed change in disposal method at least six months prior to implementation of the new disposal method.***

"h) ~~If temporary or permanent sludge disposal at a landfill is proposed in any specific plan or the initial Wastewater Sludge Disposal Plan, a commitment with a landfill shall be included in the respective plan."~~ ***If landfill disposal of the wastewater sludge were proposed, an agreement or "will serve" letter with a landfill that would accept the sludge for at least the next five years shall be provided with the Initial Wastewater Sludge Disposal Plan or subsequent specific plan. If land spreading or dedicated land disposal were proposed, then guarantees of adequate acres for sludge disposal for at least the next five years must be provided. Provisions for sludge disposal shall be updated annually so that there are always firm provisions for disposal for at least five years into the future."***

Impact M4.4.2-4

An uncontrolled release of hazardous materials could occur during wastewater treatment operations and could impact water resources and public health.

The Draft Master Plan proposes to use chlorine, a hazardous material, either in the form of hypochlorite or chlorine gas for wastewater disinfection. Other hazardous materials that may be present at the treatment plant include petroleum products (fuel and lubricants) for support vehicles and emergency generators and solvents for cleaning mechanical equipment. Airborne releases of hazardous materials could cause significant health effects among occupants down wind of the treatment plant. Spills may enter into the storm drainage system and be discharged to Mountain House Creek or Old River; spill may also seep into soils and become a source of groundwater contamination. Releases of hazardous materials may occur during use, storage, and transport.

The use of hazardous materials should be minimized. This can be accomplished by substituting hazardous materials with alternatives, choosing materials that pose the least hazard, and minimizing the volume of hazardous materials used. Facilities needed for the handling, storage, and use of hazardous materials should be designed to minimize potential releases, include secondary containment, remote monitoring, alarms, and appropriate ventilation. Procedures should be established to handle and use the materials in a safe manner, and employee training should be provided.

Mitigation Measure M4.4.2-4

Refer to Mitigation Measure M4.4.1-6.

Impact M4.4.2-5

Failure of the levees around wastewater treatment and storage ponds could cause flooding in the surrounding areas.

The wastewater storage pond capacity identified in the Draft Master Plan would be approximately one billion gallons at project buildout. Depending on the location of the final reclamation site, the depth of water in the ponds could range between 6 to 15 feet. In addition, up to 60 acres of facultative lagoons would be used for secondary treatment in Specific Plan I. Failure of the pond levees could cause localized flooding and could cause human injuries and property damage. **Inundation of ponds constructed in flood plain areas during flooding events could cause loss of pond storage capacity.**

Mitigation Measure M4.4.2-5

(a) A new Policy should be added under Objective 1 in Wastewater Reuse Program (Appendix C), as follows:

"d) The wastewater treatment and storage pond levees shall be capable of withstanding a maximum credible earthquake; ~~*and*~~ ***ponds located within the 100-year floodplain shall*** *prevent inundation due to levee failure along Old River or other nearby waterways,* ***be capable of withstanding the effects of flooding, and shall not impair the structural integrity of existing flood control levees.***"

(b) A ***Three*** *new Implementation****s*** *should be added under Objective 1 in Wastewater Reuse Program, as follows:*

"j) The detailed design of the wastewater treatment and storage pond levees shall be included in the Reclamation Plan and initial Development Permit for the Wastewater Treatment Plant, and in all subsequent reclamation plans where additional ponds are proposed. ***The pond levees within the 100-year floodplain shall meet, as a minimum, the requirements of Section 65.10 Mapping of Areas Protected By Levee Systems, 44 CFR Ch. 1 and the design standards specified herein.***

"k) The wastewater treatment and storage ponds located within the 100-year floodplain shall be set back from existing flood control levees to not interfere with inspection, maintenance, or repair of the flood control levees, if applicable.

"l) The wastewater treatment and storage pond levees shall be set back an appropriate distance from existing flood control levees to ensure that there will be no loss of integrity of the flood control levees."

SPECIFIC PLAN I

The wastewater treatment plant capacity at the end of Specific Plan I would be 1.42 mgd. This capacity is projected to be sufficient to serve the first three neighborhoods as well as the two

industrial/commercial areas, or about 31 percent of the wastewater generation at project buildout, assuming residential water conservation measures would result in a 14 percent reduction in wastewater generation. The capacity of the wastewater treatment facilities is smaller than that calculated based on the land uses included in Draft Specific Plan I. The calculated wastewater generation based on the land uses is 1.76 mgd, assuming water conservation measures are implemented. The reason for undersizing the wastewater treatment plant is that all of the land designated for industrial/commercial uses in Specific Plan I is not expected to build out before the next Specific Plan area begins construction, and therefore it would not be necessary to provide wastewater treatment capacity for these unused lands during Specific Plan I. Treatment capacity for the unused industrial/commercial portions of Specific Plan I would be provided in the subsequent specific plan. The plant would be constructed in three increments to meet the increasing treatment demands throughout Specific Plan I.

The treatment units would consist of an influent headwork with screens and aerated grit tanks, chlorinators and contact chambers, facultative lagoons to provide secondary (biological) treatment, treated wastewater storage ponds, and pumping facilities. The headwork and chlorination facilities would be located on the 30-acre site designated for the future wastewater treatment plant within the Old River Industrial Park portion of Specific Plan I. The facultative lagoons would be built in 20-acre increments, resulting in 60 acres of ponds by the end of Specific Plan I. The lagoons would be located immediately north of the Old River Industrial Park and east of Mountain House Creek, outside of the Specific Plan I area (Figure 4.4-4).

The location of the treated wastewater storage ponds and irrigation fields needed for Specific Plan I may be located at an interim site (between the facultative lagoons and Old River), at the primary permanent site on Fabian Tract across Old River, or at the secondary permanent site in Alameda County. Selection of an initial site would be specified in the Reclamation Plan required in the Draft Master Plan.

If the interim site located between Byron Road and Old River were used, 120 acres of storage ponds and 290 acres of irrigation fields would be needed to serve Specific Plan I (Figure 4.4-4). As development progressed toward buildout of Specific Plan I, the irrigation area shown in Figure 4.4-4 would be mostly occupied by treated wastewater storage ponds. Additional land would be needed for irrigation when the wastewater generation reaches approximately 0.5 mgd, approximately one-third of the flow rate calculated for Specific Plan I. The Draft Specific Plan I states that transfer of reclamation activities from the interim site to either of the permanent sites may occur any time during Specific Plan I.

Impacts associated with Specific Plan I buildout would be those described under Master Plan. No further impacts have been identified.

4.4.3 STORM DRAINAGE

Setting

The project site is used almost entirely for agriculture and pasture. The only impervious cover on the site includes roads, pavement, and areas covered by structures. Local drainage is largely dictated by an extensive system of ditches and agricultural drains. Mountain House and Dry creeks, traversing the northern portions of the site, drain to the north into Old River.

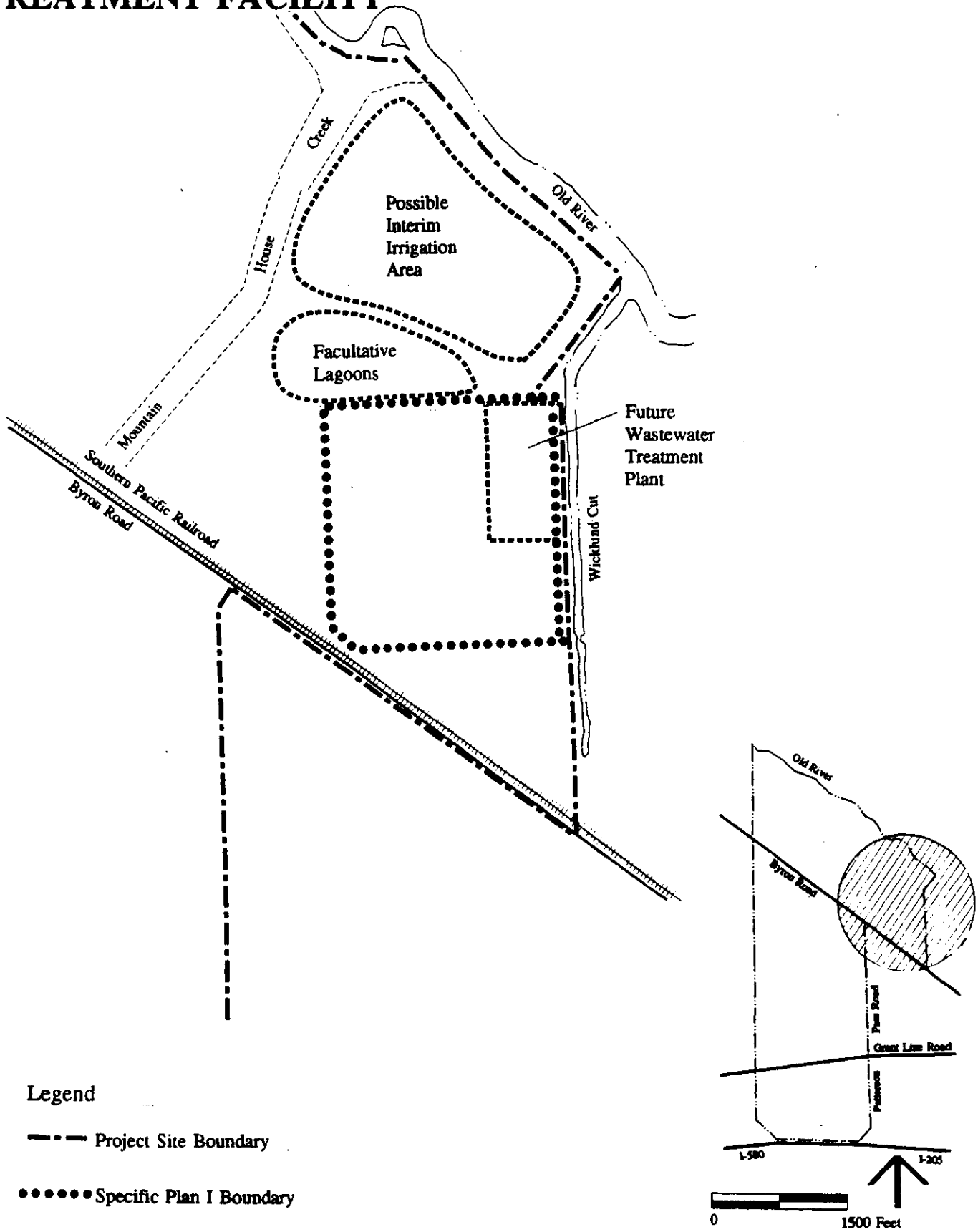
The area within 2,000 feet of Old River is subject to flooding during a 100-year flood event. The level, flow rate, and direction of the water flow in Old River are significantly influenced by pumping operations associated with the Delta-Mendota Canal and California Aqueduct, tides, and runoff.

Impacts and Mitigation Measures

Significant impacts related to storm drainage include: potential flooding due to an inadequate storm water drainage system; water quality degradation due to an inadequate storm drainage system;

SPECIFIC PLAN I WASTEWATER TREATMENT FACILITY

Figure 4.4-4



BASELINE

destruction of riparian habitat to accommodate storm water runoff; and infringement on utility easements.

MASTER PLAN

An extensive storm water runoff drainage system has been proposed to serve the project site. The drainage system would consist of catch basins, underground piping, open drainage channels, and detention basins. Storm water would ultimately be discharged to Old River. The existing agricultural ditches and drains would be abandoned as areas become developed.

Pipes and/or open channels would be used to intercept and convey storm drainage. They would be designed and constructed to transport the 100-year 24-hour storm event and minimize erosion. The primary storm drain collection system includes trunk storm drain pipes (72-inch and larger), major open channels, and detention basins. The design and construction of detention basins would be based on the 100-year, 24-hour storm event.

Mountain House Creek would be used as an open flood protection channel and would discharge into Old River. Two existing dams on Mountain House Creek would be redesigned and reconstructed to preserve existing wetlands and to pass larger flood flows over the dam crest. Wetland check berms would be designed and constructed to trap sediment thus reducing sediment load to Old River. To protect future residents from 100-year flooding, an additional set of levees has been proposed for construction along Old River.

Storm water from urban areas contains numerous contaminants that may adversely affect receiving waterways. Common pollutants in urban runoff include sediments, nutrients, bacteria, oil and grease, trace metals, trace toxic organics, and chlorides or salts. The degradation of organic materials by naturally occurring bacteria in the receiving water can deplete the water of dissolved oxygen necessary for aquatic life.

The Water Quality Act of 1987 amended the Federal Clean Water Act by directing the U.S. Environmental Protection Agency (EPA) to regulate storm water discharges from large urban areas and from areas associated with industrial activities into surface waters. The EPA regulations specify application and permit requirements of such storm water discharges. In California, these regulations are being implemented by the Regional Water Quality Control Boards (RWQCB). The current regulations require all communities that have a population greater than 100,000 people to apply for a National Pollutant Discharge Elimination System (NPDES) Permit for municipal storm water discharges.

Although the project, as proposed, would have a population of under 100,000 people, the storm water drainage system should be designed and built with the consideration that storm water regulations may be extended to communities with lower populations in the future. For storm water discharge from an urban area, the regulations require a municipality to submit a two part application to the appropriate RWQCB. The application includes 1) information on water quality data, 2) a description of the existing storm water collection system, 3) identification of the legal authority to control

discharges, 4) an existing storm water management program, and 5) financial resources devoted to implement the storm water control program. The NPDES permit issued to a municipality includes requirements to effectively prohibit non-storm water discharges from entering the storm sewers and controls to reduce the discharge of pollutants to storm water to the maximum extent practicable.

Construction activities are considered an industrial activity and are regulated under the new storm water regulations. Frequently, large amounts of sediment from construction sites are flushed into creeks, rivers, and other water bodies during rain. Sediment loading into natural water bodies adversely impacts existing fish and wildlife and causes siltation problems. The California State Water Resources Control Board adopted an NPDES General Permit for construction activities in 1992. For the project, a Notice of Intent would have to be submitted to the Central Valley RWQCB at least 30 days prior to the commencement of construction according to the General Permit. The Permit contains a prohibition on discharges of waste water other than storm water and a requirement to prepare and implement a Pollution Prevention Plan. The Pollution Prevention Plan is required to include descriptions of erosion and sedimentation control, structural practices for diverting flow from exposed soils, and measures for minimizing pollutant discharges after construction has been completed.

The Draft Master Plan has developed several objectives, policies, and implementation measures within the individual sections under Public Health and Safety and Storm Drainage and Flood Protection (Appendix C) to mitigate adverse impacts resulting from storm water discharge from the site.

The potential impacts of storm water runoff from construction activity areas are addressed in Objective 5 in Potential Site Hazards under Public Health and Safety and Objective 3 in Primary Storm Drain Collection System under Storm Drainage and Flood Protection (Appendix C). The stated objectives propose to reduce or eliminate the impacts of erosion and sedimentation during construction activities, and are supported by a policy in the Master Plan to control erosion. Implementation of the policies would include conformance with the NPDES General Permit for construction activities.

The discussions of the Primary Storm Drain Collection System and Mountain House Creek Improvements (Appendix C) also include policies requiring that drainage channels within the project be designed to minimize erosion. Implementations for the policies require that the stream channels be designed and constructed to convey runoff at or below flow velocities that could cause erosion. Additional implementations are included under the Primary Storm Drain Collection System that require stream bed protection and/or energy dissipation structures for areas of potentially high erosion hazards.

The Storm Drainage and Flood Protection section of the Draft Master Plan includes a discussion of Best Management Practices (BMPs) for the storm drain system (Appendix C). Objective 1 sets the goal of developing a storm drain system design that reduces the discharge of storm water pollutants. This objective is supported by three policies, including incorporation of appropriate source control

BMPs in each specific plan. The implementation of these policies includes management to minimize directly connected impervious surfaces, management plans for potential pollutants, a sewer maintenance program, enforcement of an illicit connection ordinance, spill prevention and cleanup plan, and incorporation of site-specific and regional BMP treatment processes into drainage system design.

The applicant has proposed to use detention basins (also referred to as ponds) as part of the storm water collection system to reduce peak flows downstream and to catch the runoff from the approximately first one-half inch of rain which generally carries the highest concentration of pollutants. Although the design of the basins has not been determined, an Implementation presented under Primary Storm Drain Collection System of the Draft Master Plan states that the detention basin designs will conform with San Joaquin County Public Works Department standards.

Detention basins are effective in removing particulate pollutants from storm water and in slowing the peak runoff rate in downstream pipes and channels. This system reduces erosion of earthen channels and allows smaller pipes to be installed. Heavy metals, nutrients, and organic matter that absorb onto sediments can also be removed from the runoff, thus reducing contamination of waterways and wildlife habitat. For detention basins to effectively remove particulates, they must be sized to detain runoff long enough for particulates to settle.

The applicant has proposed to place detention basins in school, parks, open space, residential, and light industrial areas. Detention/retention ponds are allowed by utility companies to be located near or within underground utilities or overhead electrical transmission line easements. The ponds would not infringe on easements without the approval of the owner of the easement.

Agricultural activities would continue on the undeveloped portions of the project site during the early phases of project construction. The applicant proposes to maintain separate drainage systems for urban and agricultural runoff as the project proceeds. Existing drains on farmlands that are developed would be abandoned as the land is developed. Farm drains would be rerouted around adjacent new urban areas so that farm drainage is not impeded.

The Draft Master Plan addresses the potential disruption of BBID's facilities in Objective 4 and associated policies under Potable Water Systems. Four implementations are presented for the objective and policies which provide for identification, assessment, and maintenance of BBID facilities.

The applicant proposes to widen and deepen the lower sections of Mountain House Creek to eliminate flooding along the creek and to accommodate the increased flow rates due to development. The Creek has been modified from its natural configuration over the years, largely due to farming activities. Any modifications to natural channels must receive a Streambed Alteration Agreement pursuant to Section 1603 of the Fish and Game Code from the California Department of Fish and Game (CDFG). No net loss of riparian habitat can occur as a result of any stream modification. Following submittal of an application and fee to CDFG, a warden would assess the conditions of the

creek and formulate mitigation measures. After evaluation, a signed agreement regarding the stream modification, including all the mitigation measures, would be formalized between CDFG and the applicant. CDFG would monitor construction to ensure compliance with the agreement. The U.S. Army Corps of Engineers (USACOE) operates under the authority of Section 404 of the Clean Water Act to regulate modifications that affect waters of the United States. These include all navigable waters and wetlands and tributaries to these waters. A permit or exemption from the Corps would be required for modification of Mountain House Creek or wetlands, as well as marina dredging on the project site.

Implementations under Objective 2 of the Mountain House Creek Improvements section of the Draft Master Plan acknowledge the requirements for compliance with a Streambed Alteration Agreement and Section 404 and Section 10 permits administered by USACOE. The Draft Master Plan also specifies that streambed modification and riparian vegetation proposals shall be prepared for each Specific Plan area.

Impact M4.4.3-1

The accumulation of floating debris and petroleum residual in detention ponds could create a nuisance condition (e.g., odors, mosquito infestation, and excessive algae growth) and cause adverse aesthetic effects.

Detention ponds do not provide direct treatment for floating pollutants, such as residual fuel and litter from urban areas. These floating pollutants would build up in the detention basins unless they were manually removed. Detention basins also provide no treatment for dissolved organics and inorganic pollutants.

Detention basins require relatively intensive routine maintenance. Maintenance activities include inspections; landscape maintenance; removal of weeds and woody growth from the surrounding area and spill ways; erosion and bank repairs; and nuisance abatement. Without a good maintenance program, nuisance conditions, such as odor problems, mosquito infestation, floating debris and fuel, and excessive algae growth in the water would be common. Long-term maintenance activities include periodic sediment removal and occasional structural and plumbing repairs.

The design and maintenance of detention basins are addressed in the Draft Master Plan by one Implementation presented in the discussion of the Primary Storm Drain Collection System (Appendix C). This implementation includes the consideration of surface barriers at the basin and preparation of performance criteria for the storm water collection system; this would partially ensure that the capacity of the basins would be maintained.

Mitigation Measure M4.4.3-1

The following mitigation measure should be included as an Implementation under Objective 3 in Primary Storm Drain Collection System (Appendix C):

"e) ~~*Prior to Development Permit approval for the first major or minor subdivision within the project site, an Operations and Maintenance Manual for the storm water collection system shall be prepared and submitted to the Building Inspection Division of the Department of Community Development for review and approval. The objective of the Manual shall be to ensure regular maintenance of the basins.*~~ ***Any proposed plans for construction or grading which include a detention basin shall include a proposed schedule and description of necessary routine maintenance activities for such detention basin(s) (including access roads). The maintenance plans may be in the form of a general operations and maintenance manual or may be specific to the detention basin(s) for which construction/grading plans are being submitted."***

SPECIFIC PLAN I

A description of the components of the storm drainage collection system is presented in the Storm Drainage section of the Draft Specific Plan I. Development under Specific Plan I would include design and construction of the primary and secondary storm drain collection systems within each of the three development areas, Central Mountain House, Mountain House Business Park, and Old River Industrial Park. Implementation of Best Management Practices required in the Draft Master Plan for the collection system applies to all of the development areas. Specific Plan I presents policies and implementations for the management of off-site drainage flowing into the areas to be developed under the Plan. General design criteria are proposed for the Primary Storm Drain Collection System that would include the construction of interim or temporary retention basin(s) sized to manage the 10-year 24-hour storm event. The design of the primary storm drain system would not change existing conveyance structures under Byron Road (three 36-inch culverts).

The Draft Specific Plan I proposes improvements to Mountain House Creek for reaches of the Creek that are within the Central Mountain House area. Other improvements to Mountain House Creek proposed in the Draft Master Plan would not be implemented as part of Specific Plan I. Flood hazards downstream of the improved reach of Mountain House Creek would remain the same.

The Draft Specific Plan I proposes the construction of temporary retention basins for flood control in the areas developed under the Plan. The plan specifies that the storm flows crossing under Byron Road would be controlled by the detention basins to a degree adequate to control 100-year flow rates. The design of the basins will be prepared prior to the submittal of the first Development Permit.

Impacts associated with Specific Plan I buildout would be those described under Master Plan. No further impacts have been identified.

4.4.4 GAS AND ELECTRICITY

Setting

Pacific Gas and Electric Company (PG&E) currently supplies electricity and natural gas to the project site. Herdlyn Substation, located near the intersection of Herdlyn Road and Byron Road, approximately two miles northwest of the project boundary, is the primary electrical feed to customers within the project site. The major existing on-site users of electricity and natural gas are the rural residences and two dairies.

Two existing and two proposed electrical transmission line easements traverse the project site (Figure 3.7). The Weber-Herdlyn 60-kilovolt (kV) overhead transmission line (30-foot wide easement) runs across the northern portion of the project site, parallel to Old River. The Rio Oso-Tesla 230-kV overhead transmission line (75-foot easement) runs across the southeast portions of the project site and the site's northeast corner. A 200-foot wide easement is adjacent to the Rio Oso-Tesla line, resulting in a combined easement of 275 feet; the additional easement was for the Rancho-Seco Tesla Project.[6] In addition, the preferred alternative for the Wesley/Tracy 230-kV transmission project traverses the southwestern boundary of the site (Figure 3.7).

Three natural gas pipelines owned by PG&E cross the project site (Figure 3.7). Two pipelines, the 26-inch diameter Stan Pac pipeline (Line No. 2) and newly constructed 36-inch diameter natural gas pipeline, share a 50-foot wide easement that runs across the southern portion of the project site. An 18-inch diameter Chevron crude oil pipeline is located adjacent and parallel to the gas pipelines. An 8-inch diameter natural gas pipeline with a 16.5-foot wide easement also runs from the northwest to the southeast crossing Byron Road and Patterson Pass Road.

Impacts and Mitigation Measures

For the purposes of this DEIR, significant adverse impacts are considered to be those that would not conform with development restrictions for existing natural gas and electrical line easements across the project site or that would result in the use of significant amounts of non-renewable energy resources. Potential health impacts from overhead transmission lines and environmental impacts from fuel pipelines are discussed in Section 4.10 of this DEIR.

MASTER PLAN

PG&E has indicated that it would be able to service the project site. Existing local substation capacity would be able to supply power to approximately the first 25 percent of the community's development. Beyond that, new facilities, including a substation and transmission lines, would be required. A typical substation would require an approximately five-acre site with street access. New transmission and distribution lines would require additional on-site easements.

The total constant electric demand of the project (the amount of energy required to be available at all times) with energy efficiency design implemented has been estimated to be about 100,000 kilowatts (kW), and total natural gas demand to be about 630,000 cubic feet at project buildout. These values include a 25 percent reduction in energy use compared with "typical" designs (Pennino, 1993). The Draft Master Plan specifies that energy efficiency would be incorporated from the initial phase of development through the life of the community. The consumption of energy would be minimized through building design and orientation, landscape design, community programs, and use of PG&E's Energy Planning Services. Through their Energy Planning Service, PG&E assists in

[6] This project has been deferred by PG&E, and there is a low probability that the project would be constructed in the near future; other projects may be proposed for this corridor in the future (Thomas, 1994).

determining energy requirements and potential costs, and provides site- or facility-specific recommendations to increase energy efficiency.

The Herdlyn 60-kV transmission line is proposed to be moved to Byron Road. The eight-inch diameter natural gas pipeline has also been proposed to be relocated near Byron Road and Central Parkway. To relocate a PG&E electrical transmission line or natural gas pipeline, a proposal must be presented to PG&E for approval.

An open space corridor or industrial land use has been specified for the Rio Oso-Tesla 230-kV electrical transmission line along the eastern portion of the project and PG&E's gas pipelines and Chevron's crude oil pipeline along the southwestern portion of the project.

PG&E limits development in easements associated with electrical transmission lines and natural gas pipelines. Some improvements may be allowed in electrical and natural gas line easements pending PG&E review of the detailed proposal. Chevron also limits development above fuel pipelines. Federal and State regulations restrict development in the fuel pipeline easements, similar to those applicable to natural gas pipelines. Access to the easement must be provided so that the pipeline(s) can be maintained or upgraded. The Draft Master Plan proposes to comply with PG&E's land use restrictions and states that specific plans would be submitted to PG&E for review and comment on proposed development in the vicinity of electrical power lines.

Impact M4.4.4-1

The Draft Master Plan does not provide specifications for moving existing utilities and establishing easements.

A proposal to PG&E to relocate the Weber-Herdlyn 60-kV transmission line and eight-inch diameter natural gas pipeline is not included in the Draft Master Plan. The width of any additional easement for these utilities is not specified.

Mitigation Measure M4.4.4-1

The following Implementations should be included under Objective 1 in Electricity ~~or Objective 1 in Natural Gas~~ (Appendix C):

"e) A formal application shall be submitted to PG&E to relocate the Weber-Herdlyn 60-kV electrical transmission line or provide an adequate open space corridor or other appropriate land use approved by PG&E for the easement prior to submittal of the first Development Permit north of Byron Road.

"f) A detailed proposal to relocate the eight-inch natural gas pipeline located north of Byron Road shall be included in the draft specific plan(s) for that area. A preliminary response from PG&E regarding the proposed relocation shall be secured and documented in the applicable final specific plan(s).

"g) An open space corridor or appropriate land use approved by PG&E shall be provided for the Rio Oso-Tesla transmission line easements. PG&E's approval shall be secured prior to the first Development Permit in the applicable specific plans.

"h) Construction plans shall be submitted to PG&E and other easement owners for review prior to construction in applicable specific plan areas. In particular, the construction plans should identify proposed land uses in utility easements, and procedures for movement of heavy machinery over pipelines installed in non-roadway areas which may not be designed to withstand forces exerted by heavy loads."

The Master Plan should include Policies under Objective 1 in Electricity (Appendix C) to read as follows:

"i) Land uses shall be compatible with overhead transmission line corridors, existing or proposed.

"j) Specific plans that propose residential or school development adjacent to an overhead transmission line shall summarize and provide an evaluation of the latest information regarding EMF exposure and incorporate additional measures to mitigate those effects, if appropriate."

Impact M4.4.4-2

The project would have a significant energy demand and would contribute to the depletion of non-renewable resources and the demand for environmentally-detrimental renewable resources such as hydroelectric power.

The objective of the project is to achieve a 25 percent energy saving by efficient community design. The energy demand of the project would create a significant impact on non-renewable energy resources such as fuel oil, coal, and natural gas, and could increase pressure to develop environmentally-destructive renewable resources, such as hydroelectric power.

A significant portion of the total energy demand associated with the project would be related to transportation. Locating commercial centers within convenient walking distance (e.g., one-quarter to one-half mile) from residences would reduce residents' dependence on private automobiles. According to the proposed project, some residences located in Neighborhood L may be located more than one-half mile from the nearest neighborhood commercial center.

The use of solar energy to decrease the demand for electricity and natural gas is a feasible alternative at the project site. The Solar Rights Act of 1978 states that: 1) local planning and building ordinances should not prohibit or unreasonably prohibit the use of solar energy systems, 2) tentative subdivision maps should be reviewed to provide, to the extent feasible, opportunities for future use of natural heating or cooling, and 3) local governments are allowed to adopt an ordinance requiring easements for solar access as a condition of subdivision map approval (California Energy

Commission, 1979). The Solar Shade Control Act of 1978 prohibits the placement of vegetation in locations that would shade a solar collector on another person's property.

The Draft Master Plan contains Policies and Implementations under Objective 1 in Energy Efficiency (Appendix C) to minimize the consumption of nonrenewable energy resources and encourage the development and use of alternative energy sources. A community energy conservation plan would be prepared with the assistance and recommendations of PG&E prior to submittal of the first Development Permit.

Mitigation Measure M4.4.4-2

(a) The following Implementation should be added under Architectural Guidelines in the Design Manual (Appendix 4-A of the Draft Master Plan):

"rr) Residential street layouts that include building and roof orientations that optimize the ability of residences to use solar energy to the maximum extent possible."

(b) The following Implementation should be added under Landscape Concepts and Policies, General Issues, in the Design Manual (Appendix 4-A of the Draft Master Plan):

"m) Street trees shall not be located in areas that would prevent residents' ability to use solar energy, ***unless they are deciduous trees that will not impact solar access during winter months.***"

(c) The Design Manual for the Master Plan should be amended to include a section on energy efficiency that would provide guidelines for energy efficient designs for residential and non-residential development within the entire community.

The guidelines for buildings should meet or exceed the most recent standards established by the California Energy Commission and promote passive solar design. The guidelines for the community should incorporate PG&E's recommendations, encourage efficient street design, and transportation alternatives to reduce automobile use.

(d) ~~*The Land Use map in the Draft Master Plan should be revised to increase the number of areas zoned for commercial use to ensure that residential areas are located no more than one quarter to one half mile from commercial areas.*~~ ***A new Implementation should be added under Commercial Objective 2 in Land Use (Appendix C):***

"c) The neighborhood commercial areas shall be sited so that as many homes as possible are located within a one-quarter mile walk of the closest neighborhood or community shopping area."

SPECIFIC PLAN I

The total electrical demand by Specific Plan I could not be adequately served by the existing neighborhood electrical distribution system in the vicinity of the project site. An electrical power substation would be needed during the development of the Specific Plan I area to serve the needs of the development. Two alternative sites for the substation have been proposed, adjacent to the Rio Oso-Tesla power line within the Old River Industrial Park (preferred alternative) or adjacent to the

Rio Oso-Tesla power line between Grant Line Road and Patterson Pass Road. Existing nearby PG&E natural gas facilities have sufficient capacity to serve the Specific Plan I areas.

~~**Impact S4.4.4-1** (C,O,M)~~

~~**The Draft Specific Plan I proposes inconsistent land uses, such as landscaping, within electrical transmission and natural gas line easements and does not appear to provide adequate corridors for planned utility easements.**~~

~~Electrical transmission lines and natural gas pipelines traverse sections of the three Specific Plan I subareas. Land uses within PG&E easements must be approved by PG&E and be in compliance with land use restrictions specified in the Draft Master Plan. Landscaping in the vicinity of electrical transmission lines should not exceed mature heights greater that 15 feet; trees or deep rooted plants should not be located within 10 feet of a natural gas line.~~

~~Specific Plan I does not identify specific land uses within utility easements, locations and distance of any setback requirements, documentation of PG&E approval for proposed land uses, and does not modify landscaping to conform to easement restrictions.~~

~~**Mitigation Measure S4.4.4-1** (C,O,M)~~

~~*Refer to Mitigation Measure M4.4.4-1 i).*~~

Impact ~~S4.4.4-2~~ S4.4.4-1 (C,O,M)

The Draft Specific Plan I does not include specifications for complying with the Draft Master Plan's objective to minimize the consumption of nonrenewable energy and encourage the development and use of alternative energy sources at the site.

Policies of the Draft Master Plan for energy efficiency include incorporating measures to save energy, such as designing residential streets and homes to promote the use of solar energy, designing buildings and facilities within the community to incorporate cost-effective measures to reduce the need for energy use and maximize the benefits of solar energy, including native landscaping and efficient use of water resources, and planning infrastructure systems to include cost-effective energy efficient designs and technology.

Mitigation Measure ~~S4.4.4-2~~ S4.4.4-1 (C,O,M)

Refer to Mitigation Measure M4.4.4.-2.

4.4.5 TELEPHONE

Setting

Telephone service to the project site is provided by Pacific Bell. Approximately 65 percent of the existing telephone capacity in the project site is being used. Two main feeder plants currently

provide telephone service to the project site. Aboveground distribution lines branch off the feeder plants at three switch locations. The feeder plants, distribution lines, and switch locations are within public utility easements. Two buried fiber optic lines, owned by American Telephone and Telegraph Company and GTE, respectively, are within the public utility easement.

Impacts and Mitigation Measures

To provide telephone service to the project site, new feeder plants and other facilities would be required. The Integrated Technology Planning group within Pacific Bell is responsible for planning telephone service for the project site. Extensive underground conduits would be required to house all telephone wires. Pacific Bell estimates that a total of 21,000 cable pairs would be required at full buildout. A central office within the project site may be required for housing switching equipment. The applicant must secure easements for all necessary telephone conduits and facilities, including a central office, if needed, for Pacific Bell.

The applicant and Pacific Bell would negotiate an agreement that assigns construction and financial responsibilities for new facilities. The developer would be required to pay for relocation and/or underground conversion of existing feeder plants and distribution lines.

MASTER PLAN

The Draft Master Plan contains policies and implementation measures to provide the project with modern telecommunication services for current and anticipated future needs (Appendix C). The telecommunications transport system would consist of a high speed digital fiber optics network with a centrally located hub. The center backbone transmission facilities would be constructed underground following the main routes of other service utilities to connect designated substations to a communications center. Preliminary locations for communications facilities have been proposed in neighborhood centers, the Town Center, and at Mountain House Business Park in the Specific Plan I area.

No significant adverse environmental impact has been identified in association with providing telephone service to the proposed project.

SPECIFIC PLAN I

Backbone transmission facilities would be constructed to connect to neighborhood substations in the three Specific Plan I areas. The backbone facilities would be constructed underground and would follow the main routes of other service utilities. The transport media would be based on fiber optics and standard telephone cables.

There are no significant environmental impacts associated with providing and maintaining telephone services to the site.