SECTION 6.0

ALTERNATIVES

CHAPTER 6.0

PROJECT ALTERNATIVES

6.1 INTRODUCTION

This chapter describes a range of reasonable alternatives that could feasibly attain the basic objectives of the Proposed Project, and evaluates the comparative merits, from an environmental standpoint, of the alternatives, as required by the CEQA Guidelines Section 15126.6. Such an evaluation must focus on alternatives the Lead Agency determines could feasibly attain most of the basic objectives of the Proposed Project but would avoid or substantially lessen any of the significant effects of the project, as well as the "no project" alternative. This section evaluates and discusses the no project alternative and alternatives considered by the City of Hollister that could most feasibly meet the objectives of proposed wastewater treatment and effluent disposal system, and potentially eliminate or reduce environmental impacts. This evaluation describes the significant environmental impacts of each project alternative as well as the significant environmental impacts of the Proposed Project that would be avoided by implementing a particular project alternative. The same environmental categories as presented for the Proposed Project in Chapter 4.0 of this EIR are addressed for the project alternatives; however, as allowed under Section 15126.6 (d) of the CEQA Guidelines, the alternatives are evaluated in less detail in this chapter.

6.2 PROJECT ALTERNATIVES

The range of alternatives are presented in three sections, 1) the no project alternative, 2) treatment of wastewater, 3) and disposal of wastewater. Separate environmental impacts are associated with each section. However, the selection of a wastewater treatment alternative is closely related to the selection of an effluent disposal system. The Long-Term Wastewater Management Program for the DWTP and IWTP (LTWMP) evaluates and discusses project alternatives and their feasibility (**Appendix D**). Of the alternatives identified in the LTWMP, three treatment alternatives and two disposal alternatives were evaluated, as summarized below:

1. **No Project Alternative**
2. **Domestic Wastewater Treatment Plant Alternatives**
   - Extended Aeration System
   - Oxidation Ditch
   - Sequencing Batch Reactor

3. **Effluent Disposal Alternatives**
   - Surface Water Discharge
   - Construction of New Percolation Ponds

6.2.1 NO-PROJECT ALTERNATIVE

The purpose of evaluating this alternative is to compare the impacts of the Proposed Project with the impacts that would occur from continued use of the existing DWTP facility, including the existing percolation and storage ponds. The existing DWTP is inadequate to meet the short and long-term needs of the City of Hollister. Regulatory requirements, along with growth projections and associated increases in wastewater quantities, will require the City to implement system improvements. The no-project alternative assumes that no improvements would be made to increase the quantity or quality of effluent treated.

IMPACTS OF THE NO PROJECT ALTERNATIVE

LAND USE

The Proposed Project includes the development of new facilities at the existing DWTP site. In addition, during Phase II, the Proposed Project would include the development of an approximately 670-acre seasonal storage reservoir that would be located on the DWTP site or at an undetermined off-site location. As a result, the development of the storage reservoir could result in a change of land use. Under the No Project Alternative, this potential impact would be avoided, because the continued use of the existing DWTP for treatment and disposal of wastewater effluent to existing percolation ponds and storage basins would not require the conversion of any existing land uses. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

GEOLOGY AND SOILS

Continued use of the existing DWTP for treatment and disposal would eliminate the need for construction and excavation activities from new DWTP facilities and pipelines that would occur under the Proposed Project. Therefore, vegetative cover would remain and no new surface soils would be exposed to natural elements. Current structural hazards to DWTP facilities would continue to exist from ground rupture and liquefaction from seismic events and expansive soils, however these hazards are not considered to be significant. Since the No Project Alternative would not utilize sprayfields identified under the Proposed Project, possible impacts to soils from elevated TDS levels and erosion, and impacts to mineral resource zones would be entirely avoided. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

HYDROLOGY AND WATER QUALITY

Continued use of the existing DWTP for treatment and disposal would result in impacts from failure to address three primary water issues. The plant would continue to dispose of an effluent that does not meet Groundwater Management Plan objective for the San Benito County Portion of the Gilroy-Hollister Groundwater Basin nitrate limits, would continue to contribute to high groundwater levels, and continue to contribute high TDS levels to the San Juan Groundwater Sub-Basin of the Gilroy-Hollister Groundwater Basin. Continued disposal of effluent with high TDS levels to the existing percolation basins could lead to increased salinity in the San Benito River. The continued use of percolation ponds would eliminate the potential for erosion, sedimentation, and water infiltration impacts that could be associated with the reuse of recycled water for sprayfields identified under the Proposed Project. However, with mitigation identified in this EIR, these impacts would be less than significant for the Proposed Project. *A greater level of impacts would occur under this alternative as compared to the Proposed Project.*

BIOLOGICAL RESOURCES

Under the No Project Alternative, no changes to existing land uses would occur. The No Project Alternative would not require construction of pipelines and sprayfields in sensitive habitats such as the riparian zone of the San Benito River, and would not result in potential construction-related disturbance to listed plant and animal species. Potential impacts to federal and state listed plant and animal species, as well as sensitive natural communities, native wildlife habitats, riparian habitats, and wetlands would be avoided. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

CULTURAL RESOURCES

Under the No Project Alternative, no changes to existing land uses would occur. Potential impacts to buried archeological resources from construction activities would be avoided under this alternative. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

HAZARDOUS MATERIALS AND PUBLIC HEALTH AND SAFETY

Continued use of the existing DWTP would eliminate the construction needs of the Proposed Project and the use or storage of any required new hazardous materials, and eliminate the possibility of encountering contaminated soil and/or groundwater during new construction at the site. Excavation activities would not be required for disposal sprayfields and pipelines, and the possibility of encountering underground utilities or pipelines would be avoided. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

UTILITIES AND SERVICE SYSTEMS

Development of the Proposed Project would accommodate growth within the City, which would have a secondary impact of increasing the demand on the City's water supply. Under the No Project Alternative,

additional growth would not be accommodated because the capacity of the DWTP would not be expanded. Therefore, the potential for increased demand on the City's water supply would be entirely avoided.

Development of the Proposed Project also has the potential to disrupt the City's wastewater treatment and disposal service as the result of construction activities at the DWTP and the need to utilize additional percolation at the IWTP. This impact would not occur under the No Project Alternative; however, a more significant impact would be caused, as necessary improvements to the DWTP would also not occur. As a result, the DWTP would not be able to meet effluent quality objectives. *A greater level of impacts would occur under this alternative as compared to the Proposed Project.*

AIR QUALITY

Continued use of the existing DWTP would continue to generate current amounts of mobile source and stationary source criteria air pollutants from employee and associated vehicle trips. Odor would continue to be emitted for the plant, especially those emissions comprised of malodorous compounds, which are typical of activities associated with the treatment of municipal wastewater. However, air quality emissions associated with the construction of the seasonal storage reservoir, pipelines and sprayfields would not occur. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

TRAFFIC

Under the No Project Alternative, construction activities would be avoided. Therefore, negative impacts from construction related traffic delays, blocking of driveways and interference of emergency response vehicles would be avoided. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

6.2.2 WASTEWATER TREATMENT ALTERNATIVES

FEASIBLE ALTERNATIVES

In selecting the proposed MBR facility, the City reviewed a range of alternatives to meet wastewater treatment objectives. After initial screening of wastewater treatment plant processes, two requirements arose that limited the selection of treatment plant alternatives. First, the Hollister City Council and the SBCWD along with other stakeholders have identified a long-term goal of recycling effluent water from the treatment plant. Because of this, filtration and disinfection to meet Title 22 recycled water requirements are were seen as necessary components of the project. Second, through correspondence with the RWQCB it became clear that any effluent strategy that continued to rely on percolation would result in strict effluent limitations on nitrates. With this in mind, only processes including nitrification and denitrification were considered for further investigation. Treatment alternatives were evaluated using the following criteria:

- Wastewater effluent management
- Wastewater strength
- Process reliability
- Operational requirements
- Treatment flexibility
- Available space
- Solid waste disposal
- Nuisance odor
- Visual aesthetics
- Capital and operating costs
- Discharge standards
- Ease or difficulty of permitting

Of the factors identified above, the method of wastewater effluent management and the restrictions imposed therein has the greatest effect on the type of treatment required. Wastewater treatment plants in California must generally be permitted by the RWQCB. Waste discharge requirements (WDR) and operating criteria are imposed on wastewater treatment plants during the permitting process. The design of a wastewater treatment process is typically directed at meeting specific discharge requirements, which are met by assembling different unit processes. Three alternative treatment processes that could be capable of meeting permit requirements for the City of Hollister are Extended Aeration System (EAS), Oxidation Ditch, and Sequencing Batch Reactor (SBR). These alternative processes were identified and evaluated in the LTWMP (**Appendix D**), and are described below. Because the potential environmental impacts of each process would be similar, the analysis of these alternatives are presented together.

EXTENDED AERATION SYSTEM

An EAS is a hybrid between a lagoon type system and a conventional activated sludge facility. EAS systems are biological treatment processes that provide biological oxygen demand (BOD) removal and nitrification through lined aeration basins. Biological treatment of wastewater is accomplished from aeration. The EAS is slightly more complex than the currently used Dual-Powered Multi-Cellular (DPMC) process and can produce a higher quality effluent.

If selected, an EAS would be built at and occupy a majority of Pond 1B (**Figure 2-3**, identified as the Influent Lift Station and Soil Filter at current DWTP), which is currently used for storage. Pond 1A (**Figure 2-3**) would be used as a solids stabilization basin. The EAS system would be capable of treating both current and future projected flows up to 5 MGD. The EAS would produce water suitable for disposal in percolation ponds, and the effluent would be of higher quality than that which is currently produced. However, additional filtration and disinfection would still be needed to produce disinfected tertiary treated water meeting Title 22 requirements. In addition, add-on processes for nitrogen removal might be required to ensure reliable treatment performance. Effluent disposal options include discharge

to percolation beds, surface discharge to the San Benito River, and recycled water use. For more details on the EAS alternative, please refer to Section 6.3.1 of the LTWMP (**Appendix D**).

OXIDATION DITCH

The oxidation ditch system is based on a conventional activated sludge process modified for nitrogen removal and augmented with a tertiary treatment process. An oxidation ditch is a variation of the activated sludge process, which reliably produces a higher quality effluent than that currently produced. Compared to the EAS, the oxidation ditch is more mechanically intensive, requiring additional pumps and controls, but is also more reliable in producing high quality effluent. However, process upsets have the potential to inhibit proper clarification (solids removal) of the treated effluent.

If selected, the oxidation ditch system would be built at and occupy approximately half of Pond 1B (**Figure 2-3**, identified as the Influent Lift Station and Soil Filter at current DWTP), which is currently used for storage. Pond 1A (**Figure 2-3**) would be used as a solids stabilization basin. The oxidation ditch system would be capable of treating both current and future projected flows up to 5 MGD. The oxidation ditch would produce water suitable for disposal in percolation ponds. However, additional filtration and disinfection would still be needed to produce disinfected tertiary treated water meeting Title 22 requirements. Effluent disposal options include discharge to percolation beds, surface discharge to the San Benito River, and recycled water use. For more details on the oxidation ditch alternative, please refer to Section 6.3.2 of the LTWMP (**Appendix D**).

SEQUENCING BATCH REACTOR

The SBR is a variation of the activated sludge process, which is capable of producing high quality effluent. The principal difference between SBRs and oxidation ditches is that stabilization and solids separation are sequentially accomplished in a single reactor operating in batch mode as opposed to an individual aeration basin and clarifier, which are designed for continuous flow. The aeration phase of the system promotes soluble BOD removal and nitrification.

The SBR system would be built at and occupy approximately a third of Pond 1B **Figure 2-3**, identified as the Influent Lift Station and Soil Filter at current DWTP), which is currently used for storage. Pond 1A (**Figure 2-3**) would be used as a solids stabilization basin. The SBR system would be capable of treating both current and future projected flows up to 5 MGD. For direct discharge to the percolation ponds, no disinfection would be required of the effluent. For discharge of recycled water, tertiary filtration would be required as an added process prior to disinfection by sodium hypochlorite to meet Title 22 requirements. Restricted reuse would include use for domestic, edible food crops, or animal water supply, use on lands where the public may be present during irrigation, application to saturated soils, and application to groundwater recharge and wellhead protection areas.

IMPACTS OF ALTERNATIVE TREATMENT PROCESSES

LAND USE

An alternative treatment process would be constructed at the existing DWTP site, and changes to the land use of the DWTP site would be negligible. Treated effluent could require disposal outside of the DWTP site at percolation ponds, a discharge point on the San Benito River and/or sprayfields. Construction of these sites and pipelines would potentially require the conversion of existing land uses and possibly require conversion of prime agricultural lands. These potential impacts could be somewhat greater or lesser to those identified under the Proposed Project. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

GEOLOGY AND SOILS

Construction and excavation activities required for an alternative treatment process at the existing DWTP site would result in some bare surface soils. These soils would be exposed to natural elements of wind and rain and erosion could potentially occur from wind and surface runoff. Structural hazards to alternative treatment process facilities would exist from ground rupture and liquefaction from seismic events or expansive soils. Disposal of treated effluent to percolation ponds, sprayfields, and recycled water use sites includes possible impacts to soil quality from accumulation of salts from elevated TDS levels, soil erosion from wind and surface runoff, and from conflicts with mineral resource zones. These construction-related impacts would be similar to those identified under the Proposed Project. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

HYDROLOGY AND WATER QUALITY

Construction of an alternative treatment process at the existing DWTP site would be within the historical 100-year flood plain for the San Benito River. Since the layout of the treatment plant would not drastically be altered, the impact on the flood plain would remain negligible. The treated effluent produced would have higher than acceptable TDS levels. As a result, disposal of treated effluent could lead to increased salinity of groundwater. Under the Proposed Project, localized impacts to groundwater would be mitigated by monitoring groundwater quality and assuring adjacent landowners of adequate water supplies, and basin-wide impacts would be mitigated by implementation of the Salt Management Program, which would result in beneficial impacts to the overall salt budget in the groundwater basin. Similar mitigation would be required with an alternative treatment process. Overall, the alternative treatment processes would produce lesser quality effluent, and therefore would lead to greater water quality impacts. *A greater level of impacts would occur under this alternative as compared to the Proposed Project.*

BIOLOGICAL RESOURCES

Construction of an alternative treatment process would have minimal biological impacts because construction would occur at the existing DWTP site. Construction and excavation of disposal sites and pipelines could convert existing land uses and possibly impact the waters of the U.S. and associated

riparian habitat. Alteration of these lands could include the destruction of sensitive natural communities, native wildlife habitats, riparian habitats, and wetlands, leading to the loss or displacement of federal or state listed plant and animal species. These construction-related impacts would be similar to those identified under the Proposed Project. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

CULTURAL RESOURCES

Construction of an alternative treatment process would have involved construction and grading activities that could inadvertently disrupt historical, archaeological, and unique paleontological resources, or disturb human remains. This impact is similar to that of the Proposed Project and is considered to be less than significant. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

HAZARDOUS MATERIALS AND PUBLIC HEALTH AND SAFETY

Construction of an alternative treatment process at the DWTP site would involve the use and storage of hazardous materials such as gasoline and diesel fuel in addition to solvents, hydraulic fluids and oils, and paints. During site grading and excavation phases, contaminated soil and /or groundwater could be encountered. Operation of the alternative treatment process plant could involve the use and bulk storage of hazardous materials. Construction and excavation of disposal sites and pipelines, could involve the use and storage of hazardous materials such as gasoline and diesel fuel in addition to solvents, hydraulic fluids and oils, paints, and more. Excavation could also encounter and expose natural gas pipelines and utilities. If ruptured they could result in an explosion, fire, and loss of life. These construction-related impacts would be similar to those identified under the Proposed Project. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

UTILITIES AND SERVICE SYSTEMS

Development of an alternative treatment process would accommodate growth within the City which would have a secondary impact of increasing the demand on the City's water supply. Based on the results of groundwater modeling, this impact is considered to be less than significant under the Proposed Project and a similar impact would occur with the development of an alternative treatment process. Development of the alternative treatment process also has the potential to disrupt the City's wastewater treatment and disposal system as the result of construction activities at the DWTP and the need to utilize additional percolation at the IWTP. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

AIR QUALITY

Short-term construction activities associated with construction of an alternative treatment process, pipelines, and any percolation ponds for disposal would result in the generation of ROG, NO_x and PM_{10} emissions. Operation of the DWTP would generate mobile source and stationary source criteria air

pollutants from employee and associated vehicle trips. Odor generation would potentially increase because of increased capacity of the DWTP with an alternative treatment process, especially those emissions comprised of malodorous compounds, which are typical of activities associated with the treatment of municipal wastewater. However, these odors would likely be similar to those generated at the current plant and would likely not be significant. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

TRAFFIC

Construction of pipelines from the DWTP for disposal would necessitate temporary construction zones, temporarily increasing construction traffic on adjacent roadways and negatively affecting circulation flow, as well as temporarily blocking access to driveways adjacent to construction. Construction of new facilities, pump station, and pipeline facilities could potentially interfere with emergency response vehicles. These construction-related impacts would be similar to those identified under the Proposed Project. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

INFEASIBLE ALTERNATIVES

The feasibility of recovering methane from the treatment process for later use in energy production was raised during scoping for the project. This method was determined to be infeasible for the following reason. Methane is a by-product of anaerobic treatment of wastewater. This means the treatment of wastewater in the absence of oxygen such as in anaerobic digesters for solids stabilization. The MBR wastewater treatment plant that is proposed will be completely aerobic. There will be no significant opportunity for methane production in this type of treatment process. As a result, there will be no opportunity for capturing methane and blending it back with natural gas for burning.

6.2.3 EFFLUENT DISPOSAL ALTERNATIVES

The City of Hollister considered a variety of alternatives along with the proposed combination of sprayfields, recycled water use, and percolation for the disposal of effluent from the DWTP in the LTWMP (**Appendix D**). Effluent disposal alternatives were categorized according to their time frame of implementation and other merits. A matrix was created that evaluated the considerations for different alternatives. Criteria used in evaluating alternatives included the following:

- Capacity issues
- Water quality
- Community acceptance
- Land-use compatibility
- Cost to operate
- Proximity to new plant
- Implementation time

- Environmental impacts
- Compatibility with new plant
- Consistency with sub-basin management
- Compatibility between blending and receiving water
- Protecting public health (proximity to drinking water wells)
- Consistency with regulatory environment

The following alternatives were evaluated, at the designated time frames:

- **Immediate**
  - No change
  - Modify storage and treatment ponds
  - Utilization of industrial wastewater treatment plant for disposal
- **Short-Term**
  - Percolation
  - Sprayfields and Irrigation
  - Wetland
  - Leachfield
  - Construction Water
- **Mid-Term**
  - Deep Ground Injection
  - Export to Water Poor Areas
  - Connection to Pajaro Pipeline
  - Reclamation Plan Implementation
- **Long-Term**
  - Discharge to the San Benito River (Surface Water Discharge)
  - Ocean Outfall / Discharge
  - Storage Tanks
  - Reverse Osmosis and Brine Injection
  - Construction of New Percolation Ponds
  - Evaporation Ponds

The overall feasibility of effluent disposal system alternatives was evaluated based on several criteria. From the criteria selection, matrices were generated to rank various alternatives. These matrices are included in Section 7.0 of the LTWMP included as **Appendix D.** One matrix examined the following:

- Implementation date,
- Costs to construct and operate,
- Area requirements for 5 MGD capacity, and
- Compliance with the RWQCB mandates.

Another matrix was based upon the selection criteria prescribed in the Hollister Urban Area Water and Wastewater Master Plan (Master Plan) MOU requirements. The MOU, as described in **Section 4.3** of this EIR, is an agreement between the City, SBCWD and the San Benito County to collaborate in preparing the Master Plan. The plan will identify future wastewater infrastructure improvements, discharge issues, economic objectives, cultural objectives, and TDS objectives. The anticipated completion date for this Master Plan is December 2007. Based on the first two matrices, a final matrix evaluated alternatives against compliance issues as determined by the RWQCB.

In the following sections, both feasible and infeasible effluent disposal system alternatives determined feasible and a selection of those determined infeasible are discussed.

6.2.3.1 FEASIBLE ALTERNATIVES

COMBINATION SPRAYFIELDS, RECYCLED WATER USE, AND PERCOLATION PONDS

The City, SBCWD and the San Benito County ultimately determined the most feasible alternative for effluent disposal was a combination of sprayfields, recycled water use, and percolation. The disposal method was derived from the City of Hollister and LTWMP assessments, which considered alternatives of 100% spray fields, 100% sprayfields and recycled water use, and combined sprayfields and percolation ponds. The aforementioned alternatives, when evaluated in the matrices, were the top ranked alternatives considered. This combination of alternatives addresses regional wastewater discharge issues; groundwater quantity, quality, and level objectives; and recycled water use constraints. These methods are incorporated into the Proposed Project and are not addressed further as alternatives.

DISCHARGE TO THE SAN BENITO RIVER (SURFACE WATER DISCHARGE)

Under this alternative, the City would construct an outfall to discharge treated effluent into the San Benito River. The practice is already used in the region, however, to be permitted by the RWQCB strict effluent quality restrictions would have to be met. The outfall would be a channel or pipe routed directly from the DWTP site to the San Benito River. Erosion control structures constructed of riprap, concrete or some other type of non-erosive surface would be required to within the river channel. No additional land acquisition would be required as the DWTP site is located adjacent to the river.

Because the San Benito River generally does not flow except after storm events, discharge would essentially be to a dry channel. Effluent disposed in this manner would not be carried out of the basin by river flow but would mostly percolate into the river channel. Effluent would percolate into the aquifer, which has a downstream gradient to the San Juan Valley.

IMPACTS OF SURFACE WATER DISCHARGE

Land Use

Construction of an outfall from the DWTP to the San Benito River would have a negligible affect on adjacent land uses. The Proposed Project includes the development of an approximately 670-acre seasonal storage reservoir, which would result in a change of land use. Under the surface water discharge alternative, this impact would be avoided. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

Geology and Soils

Construction of an outfall for surface runoff would be from non-erosive materials, therefore, eliminating any erosion or sedimentation impacts. Construction and excavation of the outfall will require controls for erosion. The surface water discharge alternative would eliminate the need for the construction of extensive pipelines that would occur under the Proposed Project. Since the surface water discharge alternative would not utilize sprayfields identified under the Proposed Project, possible impacts to soils from elevated TDS levels and erosion, and impacts to mineral resource zones would be avoided. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

Hydrology and Water Quality

Disposal of treated effluent to the San Benito River would require a NPDES surface water discharge permit. NPDES permits control water pollution by regulating point source discharges. Permit water quality issues include salinity from accumulation of elevated TDS levels in effluent, mass loadings, temperature, and blending of treated surface water with surface water. Regulatory issues involved include primary pollutants, California Toxics Rule, National Toxics Rule, and temperature. Discharge of the quantity of water anticipated could lead to increases to surface waters levels, temperature, and contaminants within the San Benito River when the river is flowing. Discharge of effluent would also contribute to high groundwater levels in the San Juan Valley as the effluent would mostly percolate into the normally dry river bed and enter the shallow and deep aquifers. *A greater level of impacts would occur under this alternative as compared to the Proposed Project.*

Biological Resources

Construction of an outfall would require construction with the riparian habitat of the San Benito River potentially leading to the loss or displacement of state or federal listed plant and animal species. Discharge to the San Benito River would increase surface water volumes, temperature, and pollutant loading to the river. This would cause an adverse impact to aquatic biological resources associated with the river. *A greater level of impacts would occur under this alternative as compared to the Proposed Project.*

Cultural Resources

It is unlikely that construction of an outfall would impact on buried archaeological features or artifacts as no cultural resources have been found on the project site or in the surrounding area. Construction-related impacts would be similar to those identified under the Proposed Project. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

Hazardous Materials and Public Health and Safety

Construction and excavation of an outfall could involve the use and storage of hazardous materials such as gasoline and diesel fuel in addition to solvents, hydraulic fluids and oils, and paints Construction activities conducted during the dry season in and around dry grasses poses a fire hazard. During site grading and excavation phases, contaminated soil and/or groundwater could be encountered. Excavation could also encounter and expose natural gas pipelines and utilities. If ruptured they could result in an explosion, fire, and loss of life. Construction-related impacts would be similar to those identified under the Proposed Project. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

Utilities and Service Systems

Construction of an outfall would be an expansion of offsite disposal infrastructure. Development of the Proposed Project has the potential to disrupt the City's wastewater treatment and disposal facilities as the result of construction activities at the DWTP and the need to utilize additional percolation at the IWTP. This impact would not occur with the construction of a surface water discharge, as the discharge point would be located off the DWTP site and would not conflict with the existing disposal regime. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

Air Quality

Short-term construction activities associated with an outfall could result in the generation of ROG, NO_x and PM_{10} emissions. However, because extensive pipelines would not be required to deliver treated effluent to sprayfields, the area of construction would be significantly smaller. Construction-related emissions would be less than those identified under the Proposed Project. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

Traffic

Construction related traffic impacts identified under the Proposed Project would be significantly reduced under this alternative as extensive pipelines would not be required to deliver treated effluent to sprayfields. Construction would be limited to the existing DWTP site and the adjacent San Benito River channel. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

CONSTRUCTION OF NEW PERCOLATION PONDS

New percolation ponds could be constructed for effluent disposal within the designated Phase I disposal area. The objective of constructing new percolation ponds is to have the capacity to dispose of 5 MGD of wastewater effluent. Use of all new percolation ponds would eliminate the option of sprayfields and irrigation disposal of treated effluent. Construction of the ponds would be concurrent with treatment plant construction. Development of percolation beds would require the acquisition of approximately 100-200 acres of land to provide sufficient disposal capacity.

IMPACTS OF CONSTRUCTION OF NEW PERCOLATION PONDS

Land Use

Construction of new percolation ponds would require the conversion of existing land uses, and possibly prime agricultural lands. Percolation ponds could be incompatible with adjacent land uses. Use of all new percolation ponds would require more land to be converted than the Proposed Project. *A greater level of impacts would occur under this alternative as compared to the Proposed Project.*

Geology and Soils

Construction and excavation activities for new percolation ponds would need to include measures to address erosion and landslide hazards. The disposal of effluent to the percolation ponds may result in degradation of soil quality from prolonged immersion and accumulation of salts from elevated TDS levels in effluent. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

Hydrology and Water Quality

The use of new percolation ponds could contribute to high groundwater levels because of occurrences of perched groundwater levels within the Gilroy-Hollister Groundwater Basin. The specific location of the ponds would be an important factor in determining the level of this impact. Disposal of wastewater effluent could contribute high TDS levels in the San Juan Groundwater Sub-Basin of the Gilroy-Hollister Groundwater Basin. Continued groundwater flows under these conditions could increase salinity in the San Benito River. Some form of a salt management plan would be required. The use of percolation ponds would avoid erosion, sedimentation, and water infiltration impacts that could be associated with the reuse of recycled water for sprayfields and irrigation. *A greater level of impacts would occur under this alternative as compared to the Proposed Project.*

Biological Resources

Construction of new percolation ponds would require conversion of existing land uses at disposal sites. Conversion of these lands could include the destruction of sensitive natural communities, native wildlife habitats, and wetlands, leading to the loss or displacement of federal or state listed plant and animal species. *A greater level of impacts would occur under this alternative as compared to the Proposed Project.*

Cultural Resources

Construction of new percolation ponds would have involve construction and grading activities that could inadvertently disrupt historical, archaeological, and unique paleontological resources, or disturb human remains. This impact is similar to that of the Proposed Project and is considered to be less than significant. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

Hazardous Materials and Public Health and Safety

Construction and excavation of new percolation ponds could involve the use and storage of hazardous materials such as gasoline and diesel fuel in addition to solvents, hydraulic fluids and oils, and paints Construction activities conducted during the dry season in and around dry grasses poses a fire hazard. During site grading and excavation phases, contaminated soil and/or groundwater could be encountered. Excavation could also encounter and expose natural gas pipelines and utilities. Construction-related impacts would be similar to those identified under the Proposed Project. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

Utilities and Service Systems

Construction of new percolation ponds would be an expansion of offsite disposal infrastructure. Development of the Proposed Project has the potential to disrupt the City's wastewater treatment and disposal facilities as the result of construction activities at the DWTP and the need to utilize additional percolation at the IWTP. This impact would not occur with the construction of new percolation ponds, as they would be located off the DWTP site and would not conflict with the existing disposal regime. *A lesser level of impacts would occur under this alternative as compared to the Proposed Project.*

Air Quality

Short-term construction activities associated with construction of percolation ponds for disposal would result in the generation of ROG, NO_x and PM_{10} emissions. Percolation pond construction would require substantially more grading than the construction of sprayfields identified under the Proposed Project. The additional grading would increase the amount of construction-related emissions. *A greater level of impacts would occur under this alternative as compared to the Proposed Project.*

Traffic

Construction of pipelines to percolation ponds would necessitate temporary construction zones, temporarily increasing construction traffic adjacent roadways and negatively affecting circulation flow, as well as temporarily blocking access to driveways adjacent to construction. Construction of new facilities could also potentially interfere with emergency response vehicles. This impact is similar to that of the Proposed Project. *A similar level of impacts would occur under this alternative as compared to the Proposed Project.*

6.2.3.2 INFEASIBLE ALTERNATIVES

USE OF EXISTING PERCOLATION PONDS

The City would continue to use the existing effluent disposal system, comprised of the existing percolation ponds and storage basins at the DWTP, without creating additional disposal capacity. This alternative was determined not to be feasible based on the inadequate disposal capacity for existing demands and planned growth. The use of the existing percolation ponds is part of the No Project Alternative; please see the discussion of the No Project Alternative above for more details.

ENHANCEMENT OF THE EXISTING PERCOLATION PONDS

Under this alternative, the existing percolation ponds would be evaluated and mechanisms would be implemented to enhance the capacity of the existing percolation ponds at the DWTP to accommodate 5 MGD of effluent. The operational experience of the City over the years indicates that, while active management and maintenance are necessary to maintain the existing disposal capacity of the ponds, it would not be possible to improve the disposal capacity of the existing ponds to handle the projected future wastewater flows.

LEACHFIELDS

This alternative would consist of building a subsurface structure to disperse treated effluent. The project would require about 50 acres and could occur concurrently with wastewater treatment plant construction. Leachfields are generally compatible with most land use types. They tend to be desirable to communities because of their low visibility and opportunities to create open space areas. Incompatibilities with project goals include disposal of treated effluent inconsistent with reuse of recycled water goals, and water quality issues including effluent entering groundwater, groundwater basin water balance, and TDS and nitrate levels in groundwater.

DEEP GROUND INJECTION

The deep ground injection alternative consists of injecting effluent deep into the ground through a well. Deep wells (EPA Class I) range in depth from 1,700 to over 10,000 feet below the surface. The process has little demand for land, would take longer to permit than construction of the wastewater treatment plant, and requires moderate to very high maintenance costs. Incompatibilities with project goals include water resources preservation and reuse, and possible public health issues related to groundwater degradation.

EXPORT TO WATER POOR AREAS

The exportation of treated effluent to areas lacking water resources would require compliance with Title 22 of the California Water Code. Development of an exportation process would be concurrent with that of the wastewater treatment plant. This alternative would be compatible with the goal of preserving water resources. Considerations would be required to address high TDS levels, and the possible accumulation

of salts on soils receiving effluent water. Incompatibilities with project goals include blending of treated surface water with groundwater and agricultural reuse within the groundwater basin. No feasible locations were identified as recipients of exported water.

OCEAN DISCHARGE

Under this alternative, the City would construct a 25-mile pipeline from the DWTP to the Pacific Ocean, to discharge treated effluent. High capital costs and high to moderate operational costs make this alternative infeasible. Effluent discharges to the ocean must comply with the Water Quality Control Program Plan for Ocean Waters of California (Ocean Plan), which requires effluent quality limitations for solids, turbidity, pH, toxicity, heavy metals, chlorine residual, and other contaminants. Incompatibilities with project goals include inconsistency with goal of preservation of water resources including reuse of recycled effluent, regional wastewater discharge issues, blending of surface and groundwater, and quantity and quality objects of the Groundwater Management Plan. Construction of the effluent outfall pipeline would also cause environmental impacts in the areas of biological resources, traffic, cultural resources, and air quality.

REVERSE OSMOSIS AND BRINE INJECTION

Reverse osmosis consists of pumping wastewater influent through a very fine filter that traps solids and dissolved salts on one side, and allows pure water to pass through to the other. The brine would then be injected into the earth through a well to a depth where water has greater then 10,000 mg/L TDS. Finding an appropriate area with TDS greater then 10,000 mg/L would be required. This ~~e~~ treatment and disposal process has little demand for land. However, deep injection of brine into the earth would require an extensive permitting process that would take longer to ~~permit~~ complete than construction of the wastewater treatment plant, ~~and has very high energy and maintenance costs,~~ and therefore is infeasible.

EVAPORATION PONDS

This alternative would consist of building ponds for effluent evaporation. To provide 5 MGD capacity, an estimated 2,100 acres would be needed. The system is weather dependent, and high capital and operations costs would exist. Evaporation ponds are found to be incompatible with most land uses and lead to negative impacts on adjacent land uses. Incompatibilities with project goals that make this alternative infeasible include water resource preservation and reuse, and groundwater quantity, quality, and level objectives of the Groundwater Management Plan. Salt from the ponds would also require disposal.

6.2.4 PROGRAM-LEVEL COMPONENTS

This EIR contains several program-level components under which no specific action is currently proposed for implementation. Each of the program-level components of this EIR would need to be developed further, proposed, and analyzed in a project-level CEQA process before the City or others could

undertake any action. Program-level projects that would need to be developed further include the Salt Management Program, ~~and~~ upgrading the capacity of the MBR facility to 5.0 MGD, specific locations for reuse of recycled water, additional seasonal storage capacity, and decreased percolation at the DWTP and IWTP. A discussion of the options within the program-level components of this EIR are presented in **Section 3.0**, Project Description.

6.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Section 15126.6 (d) of the CEQA Guidelines requires an evaluation of alternatives to the proposed project. Specifically, Section 15126.6 (d) states:

> The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effect of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

Consistent with this CEQA requirement, a summary matrix has been prepared which qualitatively compares the effectiveness of each of the alternatives in reducing environmental impacts. This matrix, presented below in **Table 6-1**, identifies whether each impact area of the No Project alternative, wastewater treatment alternatives, and disposal alternatives would have greater, lesser, or similar impacts compared with the Proposed Project. This table is consistent with the discussion of alternative wastewater treatment and disposal methods included in Section 6 and Section 7 of the LTWMP (**Appendix D**).

Generally, the environmentally superior alternative is the alternative that would cause the least damage to the natural and human environment. Comparison of the wastewater treatment alternatives, including the EAS, Oxidation Ditch, and SBR systems, reveals that each has a similar level of environmental impacts as the proposed MBR facility; however each produces a lesser quality effluent. This detailed comparison is described in **Section 6.2.2** above and the LTWMP included as **Appendix D.** Although implementation of the No Project Alternative would result in fewer adverse environmental effects than would occur under the Proposed Project and other alternatives, the overall degree of adverse impacts to water quality would be more significant. The extent of adverse water quality impacts that would occur under the No Project Alternative outweighs the adverse effects associated with the Proposed Project. Under the No Project Alternative, the plant would continue to dispose of an effluent that does not meet Groundwater Management Plan objective for nitrate limits, would continue to contribute to high groundwater levels, and continue to contribute high TDS levels to the San Juan Groundwater Sub-Basin of the Gilroy-Hollister Groundwater Basin. Therefore, because the MBR facility best meets the project objectives and produces the highest quality effluent, it is identified as the environmentally superior treatment alternative.

TABLE 6-1
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES WITH THOSE OF THE PROPOSED PROJECT

Environmental Issue Area	No Project	Wastewater Treatment Alternatives			Disposal Methods	
		EAS	Oxidation Ditch	SBR	Discharge to San Benito River	New Percolation Ponds
Land Use	Lesser	Similar	Similar	Similar	Lesser	Greater
Geology and Soils	Lesser	Similar	Similar	Similar	Lesser	Similar
Hydrology and Water Quality	Greater	Greater	Greater	Greater	Greater	Greater
Biological Resources	Lesser	Similar	Similar	Similar	Greater	Greater
Cultural Resources	Lesser	Similar	Similar	Similar	Similar	Similar
Hazardous Materials	Lesser	Similar	Similar	Similar	Similar	Similar
Utilities and Service Systems	Greater	Similar	Similar	Similar	Lesser	Lesser
Air Quality	Lesser	Similar	Similar	Similar	Lesser	Greater
Traffic	Lesser	Similar	Similar	Similar	Lesser	Similar

Notes: "Lesser" "Similar" and "Greater" indicate the level of impact as compared to the Proposed Project.
Source: AES, 2006.

Comparison of the disposal method alternatives, including a surface water discharge to the San Benito River and the construction of new percolation beds, reveals that while each would have lesser impacts to some environmental categories, both alternatives would increase impacts to hydrology and water quality and biological resources. This detailed comparison is described in **Section 6.2.3** above and the LTWMP included as **Appendix D**. Under the surface water discharge alternative, the discharge of the quantity of water anticipated could lead to increases to surface waters levels, and possibly contaminants, of the drainage area downstream including the Pajaro River. The surface water discharge alternative would also contribute to high groundwater levels in the San Juan Valley as the effluent would mostly percolate into the normally dry river bed and enter the shallow and deep aquifers. In addition, the surface water discharge alternative would require an extensive permitting process that would effectively delay the implementation of the proposed treatment and disposal improvements that would have a beneficial impact on regional water resource management. Under the new percolation pond alternative, disposal of wastewater effluent could contribute high TDS levels in the San Juan Groundwater Sub-Basin of the Gilroy-Hollister Groundwater Basin. Because of the greater magnitude of water quality impacts identified under these alternatives, the disposal methods included under the Proposed Project are identified as the environmentally superior alternative.