

## 7 Alternatives Analysis

The guiding principles for the selection of alternatives for analysis in this Substitute Environmental Document (SED) are provided by section 3777 of Regulations for Implementation of the Environmental Quality Act of 1970 for Exempt Regulatory Programs, which require an analysis of reasonable alternatives to the project to avoid or reduce any significant or potentially significant adverse environmental impacts while still meeting the project objectives. The main project objectives are based on the requirements of Water Code section 13291 and consist of the following:

- As required by AB 885, adopt statewide OWTS regulations or standards and a statewide conditional waiver that are consistent with other provisions of the Porter-Cologne Water Quality Control Act and related state water quality control plans and policies adopted by the State Water Board.
- Help to ensure that public health and beneficial uses of the state's waters are protected from OWTS effluent discharges.
- Establish an effective implementation process that considers economic costs, practical considerations for implementation, and technological capabilities existing at the time of implementation.

The significant and potentially significant adverse environmental impacts of the proposed Policy include:

1. Impacts related to construction of new and replaced OWTS:
  - a. Direct water quality impacts in Tier 3 or near impaired water bodies, although with mitigation this becomes less than significant.
  - b. Indirect biological resource impacts, although with mitigation this becomes less than significant.
  - c. Indirect impacts on cultural resources, although with mitigation this becomes less than significant.
2. Impacts related to siting and operation of OWTS:
  - a. Direct water quality impacts from nitrogen (if funding can be provided for mitigation measures, then this impact becomes less than significant; if funding can't be provided then this impact is significant and unavoidable).
  - b. Direct water quality impacts from other constituents of concern (no conclusion can be made at this time).
3. Indirect impacts related to relaxation of existing local regulations.

The alternatives have been identified by the State Water Board using input received during project stakeholder meetings, scoping meetings, and informal discussions with Regional Water Board staff; federal, state, and local agencies; and other stakeholders. The process of proposing, identifying, and developing alternatives to the proposed Policy has been taking place since the State Water Board received its initial mandate through the passage of AB 885 in September 2000. Based on this broad range of input beginning in 2000, the State Water Board has identified five alternatives for analysis in this SED:

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1. No-Project (Status Quo) Alternative

With the No-Project (Status Quo) Alternative, the proposed statewide OWTS Policy would not be implemented and the current regulatory setting as summarized in Chapter 5 and Table 5-1, Table 5-2, and **Error! Reference source not found.** would continue into the future. The existing OWTS-related requirements in the regional water boards' water quality control plans (basin plans) and local agency ordinances would continue to be inconsistent from one jurisdiction to another and would be the primary means by which OWTS are regulated. OWTS siting, design, and construction standards would continue to vary around California, along with corrective actions, exemption criteria, minimum monitoring requirements, and requirements for determining when a system is subject to major repair. This alternative does not accomplish the project objective to adopt statewide OWTS regulations or standards.

2. Prescriptive Alternative

The Prescriptive Alternative would include an OWTS management and risk-level table to guide local and regional agencies in managing a wide range of site conditions and establishing appropriate management levels, similar to Tier 2 of the proposed Policy. However, the requirements for local and regional agencies under the Prescriptive Alternative would be more detailed than the requirements of the proposed Policy. The table would specify management actions that permitting agencies must take (including use of different types of treatment, disinfection, and dispersal systems and acquisition of operating permits, monitoring, and other management actions) based on the complexity of the treatment system, environmental sensitivity, and public health risks identified for a specific OWTS. OWTS would be placed into different levels that have various monitoring and treatment requirements.

Similar to the proposed project, the intent of the Prescriptive Alternative would be to help ensure that consistent, minimum design, siting, and operating standards are used throughout California. While some local and regional agencies would still enforce their own OWTS regulatory requirements (because they would be more environmentally protective than those included in this alternative), this alternative would require some local and regional agencies to implement OWTS standards that are more environmentally protective than the ones they currently enforce. The Prescriptive Alternative does not meet the project objective to establish an effective implementation process that considers economic costs and practical considerations for implementation because due to the highly detailed and expensive requirements, the Prescriptive Alternative would put undue burden on OWTS owners to comply.

3. Matrix Alternative

The intent of the Matrix Alternative is twofold: (1) to minimize the potential for OWTS to contaminate groundwater because systems (particularly OWTS with supplemental treatment components) are sited in areas with inadequate depth to groundwater, and (2) to reduce the potential for OWTS to be sited at a density that could overwhelm the ability of the soil to provide adequate treatment of effluent

before it reaches groundwater. The Matrix Alternative focuses on these issues primarily through two mechanisms: restrictions on the size of lots and density of development at which OWTS are permitted, and more strict regulations for the siting and performance of OWTS with supplemental treatment components. It is called the “Matrix” Alternative because the lot size and density restrictions would be presented in a matrix format to accommodate the number of variables that would need to be considered. This alternative is not feasible because it would interfere with local agency planning requirements.

4. Supplemental Treatment Alternative

The Supplemental Treatment Alternative would require all new and replaced OWTS throughout the state to use supplemental treatment for nitrogen, BOD, and TSS after adoption of the regulations, and all existing conventional OWTS in the state to upgrade to supplemental treatment components for nitrogen, BOD, and TSS within 9 years from the effective date. The Supplemental Treatment Alternative does not meet the project objective to establish an effective implementation process that considers economic costs and practical considerations for implementation. It is unreasonable to expect all OWTS owners to install supplemental treatment.

5. 2008 Draft Regulations Alternative

This alternative would establish minimum requirements for the permitting, monitoring, and operation of OWTS for preventing conditions of pollution and nuisance. This alternative would require existing OWTS to comply with more extensive requirements than the proposed Policy, regardless of whether the OWTS is contributing to water quality degradation. This alternative would also require OWTS within 600 feet of impaired water bodies to upgrade to supplemental treatment if a TMDL has been adopted for OWTS.

The 2008 Draft Regulations alternative could cause a financial burden on owners of existing OWTS who have to comply with extensive regulations when there is an unknown and possibly absent pollution problem. For this reason, the alternative does not meet the project objective of establishing an effective implementation process that considers economic costs and practical considerations for implementation. In addition, this alternative would affect fewer OWTS near impaired water bodies, where OWTS are likely contributing to water quality degradation. For this reason, the alternative does not meet the project objectives of helping to ensure that public health and beneficial uses of the state’s waters are protected from OWTS effluent discharges.

### **7.1 Alternatives Eliminated from Further Consideration**

This section describes those regulatory options and other alternatives that the State Water Board considered as potential alternatives to the proposed project but rejected because they did not meet most of the project objectives, and/or because they are infeasible for economic, technological, environmental, or other reasons, as discussed below.

### *7.1.1 CCDEH Alternative Regulations*

CCDEH has been an early and longstanding participant in the process of developing the AB 885 regulations. As an interest group representing the directors of county environmental health departments, CCDEH has an important and influential perspective on the implementation of statewide OWTS regulations. The group has participated in all stakeholder meetings and conferences at which input has been provided to the State Water Board on regulatory approach and specific details of the draft regulations. In August 2005, as part of the scoping process for the EIR, CCDEH submitted an alternate version of draft regulations (titled version 8.3.05) that addressed concerns of the organization regarding the State Water Board's regulatory approach.

State Water Board staff carefully reviewed the CCDEH alternative regulations and featured them in a presentation to the board in December 2005. Based on direction provided by the board at that meeting, State Water Board staff determined that the CCDEH alternative regulations would not substantially comply with the mandate of AB 885 to provide "Requirements for impaired waters," as stated in point 2 of the legislations, or "Minimum monitoring requirements," as stated in point 5. Because these are essential components of the project objectives as required by AB 885, State Water Board staff determined that the CCDEH alternative regulations do not, as a separate set of regulations, constitute a feasible alternative for consideration in this EIR.

### *7.1.2 Model Code-Based Alternative*

Another organization that has been involved in the development and review of the AB 885 regulations is the now closed California Wastewater Research and Training Center (CWTRC). CWTRC was created to assist in improving water quality in California by seeking, developing, and promoting effective, multidisciplinary solutions to wastewater and waste management issues in California. It was involved in stakeholder meetings and provided input throughout the process of creating the regulations and identifying issues to be addressed in the EIR during the scoping period. Staff members of the CWTRC kept abreast of developments in the 2008 regulations through workshops and updates at annual meetings.

Early in the process of drafting the 2008 regulations, CWTRC provided the State Water Board with model regulations that could have been used as a model for the new OWTS regulations in California. The model regulations were based on management guidelines prepared by the U.S. Environmental Protection Agency.

State Water Board staff reviewed the model code provided by CWTRC. However, the California Water Code required elements to be included in statewide OWTS regulations that were not addressed in the model code provided by CWTRC. For this reason, the alternative as proposed by CWTRC would not meet major objectives of the project as required by AB 885. As such, State Water Board staff determined that this alternative would not constitute a feasible alternative for consideration in this EIR.

### **7.1.3 *Plumbing Code Alternative***

This alternative was recommended during the scoping sessions. In this alternative, the state would work with the California Code Commission to establish OWTS rules for adoption in Appendix K of the California Plumbing Code. This alternative was rejected because Appendix K is generally oriented to plumbing fixture installation and sizing, whereas the minimum standards necessary to comply with the California Water Code include monitoring and special provisions for OWTS adjacent to water listed under Section 303(d) of the Clean Water Act. Those types of requirements go beyond what is intended for and commonly found in the California Plumbing Code.

### **7.1.4 *Watershed-Based Regulations Alternative***

An alternative was recommended during the scoping session for the state to consider watershed-based regulations in lieu of statewide regulations. This alternative was considered and rejected because it would not meet the primary project objective of fulfilling the statutory requirements for statewide minimum standards. However, regional or local governmental entities may establish such controls where they are more protective than the proposed Policy.

## **7.2 *No Project (Status Quo) Alternative***

The purpose of assessing a No-Project Alternative in an environmental document such as this SED is to allow decision makers and the public to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No-Project Alternative would involve the State Water Board deciding not to approve any statewide Policy for OWTS.

There are several scenarios that could arise if the State Water Board decided not to approve the proposed project. The California Legislature could pass new legislation that supersedes AB 885 and removes the statewide requirements of California Water Code section 13291. This would result in continuation of the existing regulatory environment (continuation of the status quo). Alternatively, the California State Legislature could pass new legislation that supersedes AB 885 with new requirements for statewide OWTS regulation, and the process would start over at the State Water Board. Still another possibility is that the California Legislature could pass legislation that contains its own regulations for OWTS.

Attempting to predict the State Legislature's actions is speculative. Passing new legislation is outside the control of the State Water Board, and requires that the State Assembly or Senate draft and pass a bill, and that it receive approval from the Governor. However, for the purposes of presenting a No-Project Alternative, it is assumed that the State Water Board would be able to convince the California Legislature to rescind passage of AB 885 and the existing regulatory environment would continue with no new statewide OWTS Policy implemented.

The existing regulatory conditions for OWTS are described in s Tables 5-1a, 5-1b and 5-2. One of the major differences between the existing regulatory conditions and the proposed Policy are requirements for OWTS that are within certain distances of water

bodies impaired for nutrients and/or pathogens. The proposed Policy would require OWTS within 100 and 600 feet of water bodies impaired for pathogens and nutrients under section 303(d) of the Clean Water Act, respectively, to install supplemental treatment. The No-Project (Status Quo) Alternative would not require supplemental treatment for OWTS next to water bodies impaired for nutrients or pathogens. The proportion of OWTS using supplemental treatment in the future is expected to increase by approximately 1% through 2013 (TCW 2008) in most areas statewide under both the No-Project Alternative and the proposed Policy. However, it is predicted that the proportion of OWTS with supplemental treatment in impaired areas would be substantially lower under the No-Project Alternative relative to the proposed Policy. Thus, the number of OWTS with supplemental treatment that would be installed under the No-Project Alternative would be substantially less than the number of such systems installed under the proposed project.

Similar regulatory pressures could operate on homeowners to install supplemental treatment under both the No-Project (Status Quo) Alternative and the proposed Policy. However, the requirement to add supplemental treatment in the proposed Policy is mandatory and tied to a time frame in the proposed Policy for homeowners in impaired areas (immediate effect for new systems, no more than five years for existing systems). However, any restrictions or conversion requirements that the regional water boards impose under the No-Project (Status Quo) Alternative could take several years to be adopted and implemented. Therefore, under the No-Project (Status Quo) Alternative, fewer OWTS with supplemental treatment would likely be installed in the watersheds of impaired water bodies than under the proposed Policy. Fewer OWTS with supplemental treatment means that the No-Project Alternative could have a greater impact on the environment, especially in areas near water bodies impaired for nutrients and pathogens, due to effluent not being treated to sufficient standards to protect hydrological resources, biological resources, and public health.

Other differences between the No-Project Alternative and the proposed Policy include various regulatory requirements included in the proposed Policy that are not typically found in existing OWTS regulations of most local and regional agencies, such as:

- mandatory use of septic tank effluent filters and septic tank risers for new and replaced OWTS,
- allowance of seepage pits only where other types of OWTS are not feasible,
- disallowance of cesspools for new development or to replace existing OWTS,
- minimum statewide performance standards for supplemental treatment units, and
- mandatory visual or audible alarm systems on all supplemental treatment units to be activated in the event of system failure.

### **7.3 Prescriptive Alternative**

The major differences between the Prescriptive Alternative and the proposed project are the level of detail and comprehensiveness of the minimum siting, design, and operating

requirements included. The Prescriptive Alternative includes detailed requirements such as:

- Performance standards for OWTS that do not have supplemental treatment.
- Septic tank design standards including minimum diameter tank access openings and two access openings instead of one.
- Detailed soil testing procedures when siting and designing OWTS.

The environmental impacts of the Prescriptive Alternative would for the most part be the same as, or similar to, those resulting from the proposed project. A few unique impacts would be associated with this alternative, and they would likely be limited to those counties where OWTS regulatory requirements are less environmentally protective than the standards included in this alternative.

The potential water quality and public health impacts of this alternative would be indirect, fairly diffuse, and would vary from one jurisdiction to another. In those areas where OWTS regulations are currently less environmentally protective than the different types of prescriptive requirements included in the Prescriptive Alternative, the more comprehensive and protective requirements included in the Prescriptive Alternative would likely result in some benefits to water quality and public health, similar to those identified for the proposed project, for new systems and in instances where OWTS owners would be required to upgrade or replace their systems to comply with the new standards (i.e., primarily for malfunctioning systems requiring replacement or major repair).

Relative to the proposed Policy and the other alternatives, the Prescriptive Alternative would provide more specific guidance on how much vertical separation is needed between the bottom of a dispersal field and groundwater levels under a wide variety of soil types. More extensive soil testing would be required during the OWTS siting process than is currently conducted in many areas of the state. In those areas where existing OWTS requirements are less environmentally protective than those contained in the Prescriptive Alternative, this alternative could lead to a reduction in some contaminant concentrations before they reach groundwater.

Another way in which the Prescriptive Alternative could lead to indirect water quality and public health benefits would involve the OWTS management and risk-level table that would be adopted as part of this alternative, which is similar to Tier 2 of the proposed Policy. This table would present management actions for local and regional agencies to follow based on site conditions, environmental sensitivity, and susceptibility of nearby receptors (e.g., requiring OWTS owners to use supplemental treatment or conduct monitoring in certain specific circumstances or requiring permitting agencies to implement an OWTS operating permit process). This table would be similar to one originally developed by the U.S. Environmental Protection Agency (USEPA) in 2003 to help guide permitting agencies throughout the country.

By adopting a detailed and specific table of management options tied to risk levels of various siting and environmental conditions, the Prescriptive Alternative could

potentially result in more closely controlled benefits to water quality and public health in some areas of the state, especially in those areas where the regulatory requirements would be more environmentally protective than those used by local or regional agencies under existing regulations or under the proposed Policy. These management options would provide statewide standards that are more clearly delineated in their requirements than those required by Tier 2 of the proposed Policy. Overall, however, the regulatory mechanisms and technologies relied on in the Prescriptive Alternative would be essentially the same as those identified for the proposed Policy.

Similar concerns would result from the Prescriptive Alternative with regard to the inability of OWTS to adequately treat discharges to a degree that would allow them to meet WQOs. The Prescriptive Alternative would have similar impacts to those identified for the proposed project, including impacts relating to violation of WQOs for nitrogen that could be mitigated by upgrading all OWTS to include denitrification. This could be mitigated, like the project, by supplemental treatment for all systems; however, this mitigation may be considered costly given that it would be needed regardless of whether a *specific* OWTS has a likelihood of causing an impact. If the State Water Board were to determine that this mitigation is infeasible, the impact would be significant and unavoidable.

As with the proposed project, the Prescriptive Alternative would likely result in some benefits to aquatic biological resources compared to existing conditions as a result of improvements in the quality of effluent reaching groundwater through more protective siting and technological requirements, for new systems and in instances where OWTS owners would be required to upgrade or replace their systems to comply with the new standards (i.e., primarily for malfunctioning systems requiring replacement or major repair). Effluent would continue to be discharged to groundwater that fails to meet WQOs; however, the mass loading of nitrogen and its contribution to surface waters is too speculative to assess on a statewide basis. Environmental and regulatory processes already in place statewide would also reduce the potential that groundwater impacts could lead to impacts on biological resources. The Prescriptive Alternative would more closely control siting and technological requirements based on specific site conditions, environmental sensitivity, and susceptibility of nearby receptors, and these more detailed requirements would likely result in additional benefits with regard to protection of aquatic resources.

Overall, the Prescriptive Alternative would result in similar impacts on biological resources as would be expected to occur with the proposed project. Many of the relative improvements in biological resource impacts associated with the proposed project would also occur with the Prescriptive Alternative. These benefits include reduced contamination of groundwater leading to lower levels of pollutants in surface waters as a result of:

- the use of alarms to indicate malfunctioning supplemental treatment units, and
- the use of septic tank filters on all new and replaced systems.

The Prescriptive Alternative would result in similar impacts on land use as would be expected to occur with the proposed project. Compared to some existing local or regional

OWTS regulations, the Prescriptive Alternative would establish consistent statewide setback requirements based on siting considerations and environmental sensitivity that are intended to provide protection of existing and planned land uses, including nearby and utility-related infrastructure, and residential and commercial land uses. Like the proposed project, the Prescriptive Alternative would not diminish the ability of cities and counties to exercise their land use planning functions, and would not change the regulatory framework that allows local governing bodies and regional water boards to share authority over land use decisions that could affect water quality in the state. However, specific siting restrictions could limit the buildability of some previously developable lots that would be unable to meet setbacks or other siting requirements or that might be required to use more expensive forms of treatment. This could shift land development to alternative areas.

#### **7.4 Matrix Alternative**

The most prominent difference between the Matrix Alternative and the proposed project and other alternatives are land use restrictions relating to lot size and density of development. The Matrix Alternative would create an OWTS regulatory environment notably different from the existing land use planning and OWTS approval process currently found in most of the state. In most areas of the state, regional water boards and/or local agencies do not have lot size or density restrictions in their OWTS-related permitting process (the exceptions are the Lahontan and Santa Ana Regional Water Boards, the local agencies found in those regions, and a few other local agencies, including Santa Cruz and Sonoma Counties). This alternative also would not allow any type of OWTS to be used on parcels created after adoption of the statewide Policy if such parcels are less than 1 acre in size if they have private wells or less than one-half acre in size if they rely on a community water supply system.

OWTS also would not be allowed in some locations based on observed soil percolation rates (i.e., rates faster than 5 minutes per inch or slower than 120 minutes per inch). OWTS would be allowed on parcels created before adoption of the statewide regulations if they have percolation rates as slow as 240 minutes per inch, and regional water boards would be allowed to make exceptions to the percolation rate requirements of this alternative on a case-by-case basis. In general, regions of California where percolation rates are slower than 120 minutes per inch are found in some locations in the slow-draining clay soils of the Central Valley, while the desert and volcanic regions found in southeastern and northeastern California may have areas with rates faster than 5 minutes per inch.

Construction and operation of OWTS may also be restricted in some areas by another regulatory requirement included in the Matrix Alternative. Engineered fill could be used to meet vertical separation requirements when certain restrictions are followed; however, such fill could not be used to meet vertical separation requirements on parcels created after the effective date of the new regulations.

There are other aspects of this alternative that differ from the proposed Policy and the other alternatives described in this section. Like the Prescriptive Alternative, this alternative also includes an additional pathogen performance standard for OWTS with

supplemental treatment components that are not designed for disinfection or nitrogen reduction. This standard would apply to both existing and new systems and could require many owners to install relatively expensive sand filter systems if they decide not to use disinfection or nitrogen reduction systems. This alternative would also limit the use of supplemental treatment components with disinfection by allowing their use only on existing lots of record at the time the new Policy is adopted, and by requiring an additional 1 foot of vertical separation to groundwater (6 feet instead of 5 feet as required in the proposed Policy).

Regional water boards and local permitting agencies would have more discretion under this alternative with respect to total nitrogen performance standards. Instead of using the total nitrogen standard of 50% reduction in total nitrogen in effluent compared to the 30-day average influent concentration included in the proposed Policy, this alternative would allow local permitting agencies, in consultation with regional water boards, to establish their own nitrogen performance standards. This is similar to the Tier 2 requirements of the proposed Policy.

New special districts would be created at the local level to oversee maintenance and repairs of OWTS with supplemental treatment components; the proposed project and other alternatives would not create any new agencies. The special districts would oversee such systems where they are used at new land developments of five or more lots, and where any lot is smaller than 3 acres. Existing developments using OWTS with supplemental treatment components, or developments where all of the lots are greater than 3 acres, would not need to be managed by a special district but would need to be inspected by the permitting agency during periods of high groundwater.

Similar to the proposed project, the Matrix Alternative includes required procedures for determining the level of seasonal groundwater before siting OWTS. However, the procedures specified in this alternative include more detailed requirements for determining the level of seasonal groundwater in locations where soil mottling observations cannot be made or lead to unreliable conclusions. As determined by regional water boards, measurements of depths to seasonal high groundwater would be made periodically for lots created after adoption by assuming:

- 100% or greater average annual precipitation for conventional systems, and
- 125% or greater average annual precipitation for supplemental treatment systems.

Measurements of depths to seasonal high groundwater would be made periodically for lots existing at the time of adoption by assuming:

- 60% or greater average annual precipitation for conventional systems in areas with less than 25 inches per year average annual precipitation, or 80% or greater average annual precipitation where average annual precipitation is greater than 25 inches; and
- 80% or greater average annual precipitation for supplemental treatment systems.

Finally, the Matrix Alternative would require additional groundwater monitoring for new systems that would have less than 5 feet of separation between the bottom of the dispersal

field and seasonally high groundwater levels. Such monitoring could rely on telemetry and would be conducted during the period of highest groundwater levels (as determined by regional water boards), and if it is determined that vertical separation is less than 5 feet for more than 1 week, or less than 2 feet at any time, then annual bacteria monitoring would be required.

Given the restrictions relating to land use, soil percolation rate, and supplemental treatment performance requirements that are included in the Matrix Alternative, this alternative would likely restrict the number of new OWTS constructed in some areas of the state. Because OWTS are often constructed in relatively remote areas where construction or expansion of centralized sewer collection and treatment systems are typically not feasible, the restrictions included in this alternative could result in some lots not being developed at all and, in some areas, a shift in the construction of OWTS onto larger lots and in less dense development patterns than would occur under the proposed project and other alternatives.

Any widespread limitation on the total number of OWTS constructed or on the density of development patterns in developing areas would reduce OWTS discharges and associated contaminants reaching groundwater. Lower OWTS densities would reduce OWTS contributions to cumulative water quality impacts. Because an estimated 50% of the people with new OWTS also rely on private drinking water wells, this alternative could also result in reduced public health risks in lower density developments with new OWTS.

Several features of this alternative dealing with supplemental treatment components would cause additional improvements to water quality and public health compared to the proposed project. First, the Matrix Alternative includes a more environmentally protective pathogen standard for all OWTS with supplemental treatment that are not designed for active disinfection or nitrogen removal. Only existing lots of record at the time the regulations are adopted would be allowed to use disinfection, effectively limiting the locations where OWTS could be installed. The Matrix Alternative would also allow regional water boards to establish their own nitrogen performance standards for OWTS with supplemental treatment designed to reduce nitrogen. Secondly, the formation of new special districts at the local level to oversee maintenance of these more complex systems and to determine when repairs are needed would provide additional oversight to ensure that these systems are operating properly.

Overall, some elements of the Matrix Alternative would be more protective of groundwater and public health than the proposed project because siting and density requirements would restrict the number of new OWTS. The Matrix Alternative would include comprehensive setback requirements from surface water bodies, land surface features, wells, and other infrastructure. These setbacks are generally consistent with existing setbacks contained in local requirements. The proposed project would have similar setback requirements. Therefore, there is little difference between the Matrix and the project on the inclusion of setbacks in the Matrix alternative.

The Matrix Alternative has the potential to create conflicts with existing land use policies, plans, and regulations in jurisdictions throughout the state. With its restrictions

relating to land use, soil percolation rate, engineered fill, and supplemental treatment performance requirements, the Matrix Alternative could limit the ability of cities and counties to exercise their land use planning functions. While some local agencies already have lot size or density restrictions related to OWTS, the Matrix Alternative would remove the ability of agencies to approve development projects that plan to use OWTS on lots that are less than 1 acre if they have private wells, or less than one-half acre if they are on a community water supply. This would change development patterns in some areas, possibly resulting in more open space and less residential and business development. Conflicts with existing land use policies, plans, or regulations could occur in those jurisdictions that currently allow development on smaller lots or allow the use of engineered fill to help meet vertical separation requirements.

### **7.5 Supplemental Alternative**

Overall, the Supplemental Treatment Alternative would provide a greater degree of environmental protection than the proposed Policy because it would require all new and replaced OWTS throughout the state to use supplemental treatment for nitrogen, BOD, and TSS. Other requirements of the Supplemental Treatment Alternative are similar to or the same as the proposed Policy, such as the requirement to have supplemental treatment maintained by a service provider under contract.

One of the environmental benefits of the Supplemental Alternative includes reduction in the concentration of contaminants found in OWTS effluent, leading to improved water quality as well as a reduction in public health risks and impacts on biological resources. Supplemental treatment reduces the amount of pollutant loading to receiving water, including groundwater. In particular, supplemental treatment components designed to reduce nitrogen would be especially beneficial, because even soils ideal for treating OWTS effluent naturally have trouble removing nitrogen. Significant and unavoidable nitrogen-related impacts from the proposed Policy would, in most cases, be reduced to a less-than-significant level with the Supplemental Treatment Alternative.

Another benefit of the Supplemental Treatment Alternative is reduction in the rate of conversion of agricultural land to residential use. According to a California State University, Chico (Schiffman *et al.* 2003), pressures will increase to convert farmland in relatively level areas with good soil to residential uses that rely on conventional OWTS because the valley's population is expected double over the next 30 years. Much of this development pressure could be redirected to foothill areas with more marginal soils and steeper slopes if supplemental treatment is used instead of conventional systems, thus helping to preserve valuable farmland.

The Supplemental Treatment Alternative would require all new and replaced OWTS throughout the state to use supplemental treatment for nitrogen, BOD, and TSS, which could restrict development in areas where OWTS owners cannot afford higher costs associated with supplemental treatment. The Supplemental Treatment Alternative could indirectly affect development patterns and restrict growth because of the greater expense that would be imposed on all OWTS owners statewide. Although this impact would not be a direct result of the requirement for statewide supplemental treatment, large areas of

the state could be affected by the additional cost to property owners to meet this requirement.

By requiring all new and replaced OWTS in the state to use supplemental treatment for nitrogen, BOD, and TSS, the Supplemental Treatment Alternative could also result in development of land with marginal soils and steeper soils. The Supplemental Treatment Alternative could cause the use of supplemental treatment components to become more commonplace and reliable in the long run, which could lead to more development of land with previously unsuitable soil for OWTS. This is especially possible if local governments adopt the appropriate zoning needed to help redirect such development and implement OWTS policies that encourage the use of supplemental treatment systems. Such a change in development patterns could be facilitated by this alternative because conventional systems would no longer be a choice for homeowners, and the widespread use of supplemental treatment could help make the technology more reliable and affordable over time. If local governments support the development of nonagricultural land instead of agricultural land, such a change in development patterns would benefit wildlife and other natural resources that benefit from agricultural and watering practices; on the other hand, developing the wilder portions of the foothill areas, instead of agricultural lands, would cause environmental impacts in those areas.

### **7.6 2008 Draft Regulations Alternative**

Compared to the proposed Policy, some requirements in the 2008 Draft Regulations Alternative could be more protective of the environment, while others could be less protective. One example of how the 2008 Draft Regulations Alternative could be less protective of the environment is the increased number of OWTS that would be allowed to operate without supplemental treatment within 600 feet of water bodies impaired for nitrogen and pathogens. The 2008 Draft Regulations Alternative would require a TMDL to be developed for OWTS prior to requiring supplemental treatment for OWTS near impaired water bodies, while the proposed Policy would not. The reduced use of supplemental treatment could result in increased release of pollutants near impaired water bodies, leading to lower water quality as well as an increase in public health risks and impacts on biological resources.

Under the 2008 Draft Regulations, it is estimated that approximately 2,798 existing OWTS would be required to upgrade to supplemental treatment (EDAW Draft PEIR, 2008). Under the proposed Policy, it is estimated that over 64,000 existing OWTS would be affected by the supplemental treatment requirements<sup>8</sup>. It is assumed that the number of new OWTS required to have supplemental treatment under the proposed Policy would also outnumber the number of new OWTS required to have supplemental treatment under the 2008 Draft Regulations Alternative. The 2008 Draft Regulations Alternative would require fewer OWTS to install supplemental treatment than the proposed Policy, which would result in an increase of direct impacts to water quality and public health associated with nitrogen and pathogen contamination from insufficiently treated OWTS effluent.

<sup>8</sup> It should be noted that the draft PEIR prepared in 2008 used the 2006 303(d) list while this document uses the 2010 303(d) list which included more water bodies identified as impacted by pathogens and nutrients than did the 2006 list.

The 2008 Draft Regulations Alternative could result in environmental impacts, but it could also result in environmental benefits compared to the proposed Policy. For example, the 2008 Draft Regulations Alternative could result in decreased impacts to water quality due to a soil depth requirement for existing OWTS. The 2008 Draft Regulations Alternative would require at least 3 feet of continuous, unsaturated, undisturbed, earthen material with less than 30% of that material by weight containing mineral particles greater than 0.08 inches in size (i.e., rock) beneath the dispersal systems of all OWTS (existing, new and replaced). The proposed Policy would not have depth requirements for existing OWTS. The lack of a minimum depth to groundwater requirement for existing OWTS in the proposed Policy could potentially impact water quality more than the 2008 Draft Regulations Alternative due to continued discharge of effluent from OWTS with insufficient depth to groundwater.

However, the minimum depth to groundwater requirement in the 2008 Draft Regulations Alternative would require OWTS owners to assess their OWTS and possibly upgrade or replace their OWTS if the minimum depth to groundwater did not comply with the requirements. The replacing and upgrading activities would have environmental impacts that would be avoided in the proposed Policy. In addition, requiring all OWTS owners to assess the depth to groundwater, and then requiring those that aren't in compliance to upgrade would be a financial burden on OWTS owners. The proposed Policy would not put this burden on OWTS Owners.

The proposed Policy would have some safeguards against existing OWTS pollution in that OWTS would not be allowed to have surfacing effluent and would not be allowed to use a dispersal system that is in inundated or saturated soil. In addition, the depths to groundwater requirements for new and replaced OWTS under the proposed Policy would be more stringent than the 2008 Draft Regulations Alternative. The proposed Policy would require new and replacement OWTS to have depths to groundwater ranging from 5 feet to 20 feet as dependent on soil percolation rates. Other depths could be authorized by a Local Management Program under Tier 2 of the proposed Policy.

Another environmental benefit of the 2008 Draft Regulations Alternative is a decrease in adverse environmental impacts from construction and installation of OWTS near impaired water bodies. The construction and installation of new and replaced OWTS with supplemental treatment could potentially decrease under the 2008 Draft Regulations Alternative compared to the proposed Policy since more OWTS would be required to install supplemental treatment under the proposed Policy than the 2008 Draft Regulations. As a result, environmental impacts related to construction and installation of OWTS such as soil erosion, greenhouse gas emissions, and deposition of hazardous materials on and off-site would be fewer under the 2008 Draft Regulations than the proposed Policy.

However, construction and installation impacts are temporary, and the environmental benefit of better water quality from increased treatment of OWTS effluent (as a result of more OWTS with supplemental treatment under the proposed Policy) outweigh the adverse environmental impacts from construction and installation. In addition, mitigation

measures would be required when installing supplemental treatment for new and existing OWTS under the proposed Policy.

Another environmental benefit of the 2008 Draft Regulations is increased protection of water quality due to more stringent performance standards for supplemental treatment. The 2008 Draft Regulations Alternative would have more stringent performance standards for supplemental treatment than the proposed Policy (Table 7-1). This could result in greater water quality protection than the proposed Policy. However, the 2008 Draft Regulations Alternative could also result in fewer OWTS converting to supplemental treatment than the proposed Policy. It is possible that a greater number of OWTS with supplemental treatment under the proposed Policy would have greater environmental benefits than fewer OWTS converting to supplemental treatment under the 2008 Draft Regulations Alternative, despite more stringent performance standards.

**Table 7-1: Comparison of Performance Standards in 2008 Draft Regulations Alternative and Proposed Policy**

Analytical Parameter	2008 Draft Regulations Alternative	Proposed Policy
CBOD	<25 mg/L (30-day average), OR BOD <30 mg/L (30-day average)	No standard
TSS (for supplemental treatment <u>not</u> designed for disinfection or nitrogen reduction)	<30 mg/L (30-day average)	No standard
TSS (for supplemental treatment designed for disinfection or nitrogen reduction)	<10 mg/L (30-day average)	<30 mg/L (30-day average)
Total coliform bacteria	<10 (MPN) per 100 mL where percolation rates >1 and <10 MPI or where the soil texture is sand; OR <1000 MPN per 100 mL where percolation rates >10 MPI or where soil consists of texture other than sand	<200 MPN per 100 mL
Total Nitrogen	<10 mg/L as nitrogen (30-day average)	50% reduction in total nitrogen when comparing 30-day average influent to 30-day average effluent