

## Chapter 10 Conclusions and Antidegradation Summary

### 10.1 Conclusions

This two and a half year, collaborative planning process is the first effort to look at salinity and nutrients in the Study Area on a basin-wide scale. Through the technical analysis, baseline concentrations of TDS and nitrate are estimated to slowly increase within the subbasin if the conservative assumptions upon which the analysis is based indeed reflect future conditions. This possible increase in concentrations is a long-term concern for the subbasin, and monitoring and participation in management activities such as the ongoing development of a groundwater management plan are recommended to address the concern in a data-driven and collaborative framework.

Based on the loading and groundwater quality trend analyses, TDS and nitrate concentrations are both projected to increase in the future based on a series of conservative assumptions. The contribution of the recycled water goals to these increases is minimal, with new recycled water contributing 2 percent of the total mass loading for TDS. The vast majority of the predicted increases in concentration are estimated to come from surface loading from existing activities. However, those existing activities have made great strides in reducing their impacts on the groundwater system. For example, the agricultural practices of the wine grape industry place high value on limiting the application of nutrients to their vineyards. Similarly, the dairy industry has made great progress toward land application of their manure to reduce the overall impact to the environment. The dairy industry is also working to implement programs to meet requirements of the Waste Discharge Requirements General Order for Existing Cow Dairies. These ongoing efforts have resulted in decreased loading of salts and nutrients to groundwater.

The conservatively-predicted possible slow increase in concentrations of TDS and nitrate allows time to incorporate the work being developed by the USGS and the results of the monitoring into analysis updates in the future. The analysis contained herein should be updated within five years (assuming the USGS data and model are available) to reassess the subbasin and any potential need to incorporate new BMPs or storm water projects.

Annual monitoring based on recommendations in Chapter 9, the Groundwater Monitoring Plan, will help refine the rate of concentration increases. Acting as the Monitoring Coordinator, the City will lead development of a detailed, procedural monitoring plan and will move forward the onset of groundwater sample collection over the next year.

### 10.2 Qualitative Cost-Benefit Analysis

The groundwater analysis predicts increasing concentration in both TDS and nitrate using the conservative assumptions stated in this report. These increases are a result of agricultural and urban uses of water that drive the economy of the Santa Rosa Plain. Over the 25-year planning horizon, the concentration increases, if they occur, would not result in an inability to meet beneficial uses as a result of regional groundwater quality issues. However, the estimated increases would use a portion of the assimilative capacity of the basin. At this point, the benefits of the continued use of water and continued economic activity exceed the costs of the use of this assimilative capacity. Part of this conclusion is made based on the value in waiting for the completion of ongoing work by the USGS prior to implementing new BMPs or otherwise restricting use that may result in a decline in the economic vitality of the area.

### 10.3 Antidegradation Analysis Summary

Analysis of existing basin-wide water quality conditions in the Study Area indicates that the existing quality of water is better than the Water Quality Objectives in the Basin Plan. In such situations, Resolution 68-16 states that “such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water

quality less than that prescribed in the policies.” The results of the groundwater quality trend and loading analyses, based on a series of conservative assumptions and over a 25-year time horizon, indicate that basin-wide average TDS and nitrate conditions will increase over time, but will not exceed the Water Quality Objectives. These increases are almost entirely driven by existing activities in the basin, with recycled water goals contributing 2 percent of the total mass loading of TDS and no additional mass loading of nitrate. Given the economic importance of the existing water supplies and agricultural and urban uses that contribute to salt and nutrient loading in the basin, and given the projection of the continued ability of groundwater to meet present and anticipated beneficial uses, the qualitative cost-benefit analysis concludes that the increases are consistent with the maximum benefit to the people of the State of California.