

MERCED COUNTY UNIVERSITY COMMUNITY PLAN POLICY DISCUSSION PAPER

Environmental Resource Management: Surface Water and Groundwater

For CPAC Discussion: May 10, 2001 Meeting

INTRODUCTION

This policy discussion paper presents a general outline of the existing regulatory structure that exists to preserve and protect water resources. The University Community Plan (UCP) will incorporate a water-related infrastructure system that heavily relies upon the conservation and protection of the water resources surrounding and underlying the UCP area. Future policy options related to the protection of surface and groundwater quality and quantity should be viewed and created alongside the *Water-Related Infrastructure Systems* policy discussion paper to ensure that water, wastewater, and stormwater systems are designed to comply, at a minimum, with the existing Merced County General Plan policies found in the Open Space/Conservation Chapter.

EXISTING CONDITIONS AT THE UCP AREA

The following information briefly describes the existing surface water and groundwater conditions at the UCP area. Additional detail is provided in the *Water-Related Infrastructure Systems* policy paper.

- The UCP area is located in the San Joaquin Valley watershed, which is separated into two hydrologic sub-basins, the San Joaquin sub-basin and the Tulare sub-basin. The UCP area is located in the San Joaquin sub-basin, which ultimately drains into the Pacific Ocean.
- According to the USEPA's Unified Watershed Assessment Clean Water Action Plan, the environmental quality of the Middle San Joaquin-Lower Chowchilla watershed needs restoration.
- Cottonwood Creek, a seasonal drainage channel, and two canals (Fairfield and Le Grand) are the only surface waters located within the UCP area.
- Groundwater is the sole source of drinking water for the City of Merced and its surrounding communities (including the UCP area).
- Overall, the quality of groundwater and surface water quality is good to excellent in the higher foothill areas, and decreases in quality toward the Valley's center low areas.
- Groundwater is found at shallow depths at the UCP area, and groundwater flow is generally from northeast to southwest. Since 1982, depth to groundwater in the City of Merced area has ranged from between 1 to 15 feet below the ground surface.
- Ground subsidence due to the extraction of groundwater has not been observed in the UCP area.

EXISTING REGULATORY SETTING

According to federal, State, and local requirements, construction of the proposed UCP would be required to comply with, at minimum, the following laws, regulations, and permits which exist to protect the quality of surface and groundwater.

Water Quality Requirements

Section 303 of the federal Clean Water Act (CWA) requires states to adopt water quality standards for all surface waters of the United States. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards. The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB), under Section 303 of the federal Clean Water Act (CWA), are responsible for ensuring implementation and compliance with the provisions of the CWA and California's Porter-Cologne Water Quality Control Act. Along with the SWRCB and RWQCB, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments, and requires the coordinated efforts of these various entities.

The UCP area is situated within the jurisdiction of the Central Valley Region of the RWQCB (Region 5). The Central Valley RWQCB (CVRWQCB) has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. Water quality objectives are specified in *The Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin* (Basin Plan) prepared by the CVRWQCB in compliance with the federal CWA and the State Porter-Cologne Water Quality Control Act. The Basin Plan establishes water quality objectives and implementation programs to meet stated objectives and to protect the beneficial uses of water in the Sacramento-San Joaquin River Basin.

National Pollutant Discharge Elimination System (NPDES) Permit

The NPDES permit system was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that EPA must consider in setting effluent limits for priority pollutants.

Nonpoint sources diffuse and originate over a wide area rather than from a definable point. Nonpoint pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. As defined in the federal regulations, such nonpoint sources are generally exempt from federal NPDES permit program requirements. However, two types of nonpoint source discharges are controlled by the NPDES program - nonpoint source discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems (either as part of a combined system or as a separate system in which runoff is

carried through a developed conveyance system to specific discharge locations). The 1987 amendments to the CWA directed the federal EPA to implement the stormwater program in two phases. Phase 1 addressed discharges from large (population 250,000 or above) and medium (population 100,000 to 250,000) municipalities and certain industrial activities. Phase 2 addresses all other discharges defined by EPA that are not included in Phase 1. The Phase 2 regulations became effective February 2000. The SWRCB is required to issue general permits for Phase 2 regulated jurisdictions by December 2002. Fully implemented Phase 2 programs must be in place by the end of the first permanent term, typically five years.

The goal of the NPDES non-point source regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent practicable" through the use of best management practices (BMPs). BMPs can include the development and implementation of various practices including educational measures (workshops informing public of what impacts results when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures (label storm drain inlets as to impacts of dumping on receiving waters) and structural measures (filter strips, grass swales and detention ponds).

State General Construction Activity Permit

In accordance with the NPDES permit regulations to minimize the potential effects of construction runoff on receiving water quality, the State requires that any construction activity affecting five acres or more must obtain a General Construction Activity Permit. Permit applicants are required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and Erosion Control Plan, and implement Best Management Practices (BMPs) to reduce construction effects on receiving water quality by implementing erosion control measures, thereby protecting soils resources, as well as water resources. Because construction of the proposed UCP would disturb more than five acres, the project would be subject to permit requirements. In addition, 1997 revisions to the original 1992 general permit clarified that all construction activity, including small construction sites (one to five acres) and sites under five acres that are part of a larger common plan must obtain a General Permit. The State Water Resources Control Board (SWRCB) adopted a revised General Permit in August 1999.

Construction Dewatering

Clean or relatively pollutant-free wastewater that poses little or no threat to water quality may be discharged directly to surface water under certain conditions. In addition to the State General Construction Activity Permit, the CVRWQCB has also adopted a general NPDES permit for short-term discharges of small volumes of wastewater from certain construction-related activities. Permit conditions for the discharge of these types of wastewaters to surface water are specified in Waste Discharge Requirements (WDR) "General Order for Dewatering and Other Low-Threat Discharges to Surface Waters." Discharges may be covered by the permit provided they are (1) either four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 million gallons per day. Construction dewatering, well development water, pump/well testing, and miscellaneous dewatering/low-threat discharges are among the types of discharges that may be covered by the permit. The general permit also specifies standards for testing, monitoring, and reporting, receiving water limitations, and discharge prohibitions.

Merced County General Plan

Within the Merced County General Plan are goals, objectives, and policies that protect the quality and quantity of surface water and groundwater. Applicable policies related to surface water and groundwater are found in the Open Space/Conservation Chapter of the General Plan. The objectives of the water policies are “to protect surface and groundwater resources from contamination, evaporation, and inefficient use.” The General Plan policies would apply to development of the proposed UCP.

SUGGESTED GOALS AND POLICIES FOR THE PROPOSED UCP

The *Water-Related Infrastructure Systems* policy paper provides numerous issues, goals, objectives, and policies that will guide water-related infrastructure design at the proposed UCP. These proposed policies will directly aid in the protection of surface and groundwater quality and quantity. Please refer to the *Water-Related Infrastructure Systems* policy paper for the water protection and preservation policy options proposed for the UCP.

Upon completion of the policies related to infrastructure design, complementary policies related to water resource protection shall be prepared.

In addition, the *Biological Resources* policy paper should be consulted to ensure that water preservation policies do not conflict with biological protection and preservation policies.