

VETERINARY MEDICINE FACILITIES IMPROVEMENT PROJECT

FINAL FOCUSED TIERED EIR

SCH. No. 200009212

Prepared for
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March 2001



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1.1 PURPOSE OF THE FINAL ENVIRONMENTAL IMPACT REPORT

Under the California Environmental Quality Act (CEQA) and the University of California (UC) procedures for implementing CEQA, UC Davis is required, after completion of a Draft Environmental Impact Report (EIR), to consult with and obtain comments from public agencies that have legal jurisdiction with respect to the proposed project, and to provide the general public with opportunities to comment on the Draft EIR. UC Davis is also required to respond to significant environmental issues raised in the review and consultation process. This Final EIR has been prepared to respond to agency and public comments received on the Draft EIR for the UC Davis Veterinary Medicine Facilities Improvement Project. The Draft EIR was issued for public review on October 30, 2000. The public review period lasted from October 30 through December 13, 2000. UC Davis held a public meeting on November 29, 2000, to receive comments on the Draft EIR. A court reporter prepared a transcript of the meeting.

This document and the Draft EIR constitute the Final EIR. The Draft EIR is hereby incorporated by this reference. Copies of the Draft EIR and the Final EIR are available during normal operating hours at the UC Davis Office of Resource Management and Planning, 376 Mrak Hall on the UC Davis campus; at Reserves in Shields Library on the UC Davis campus; at the Yolo County Public Library, 315 E. 14th Street, Davis; at the Vacaville Public Library, 1020 Ulatis Drive, Vacaville; and online at <http://www.ormp.ucdavis.edu/enviroreview/>.

The Draft and Final EIRs include extensive references to the 1994 UC Davis Long Range Development Plan (LRDP) and the 1994 LRDP EIR. The 1994 LRDP was designed to accommodate projected campus population growth and facilities development through 2005-06, and the 1994 LRDP EIR evaluated the environmental impacts of that growth and development. As allowed under Section 15150 of the CEQA Guidelines and as stated in the Draft EIR, UC Davis is incorporating by reference portions of the 1994 LRDP EIR (State Clearinghouse Number 94022005). Copies of the 1994 LRDP, 1994 LRDP EIR, and other documents that amend and revise these documents are available at the locations listed above.

The Regents of the University of California will certify this Final EIR prior to approving the project. Other agencies may also use this EIR in their review.

1.2 FORMAT OF THE FINAL ENVIRONMENTAL IMPACT REPORT

A Final EIR is required to include the Draft EIR (which has been incorporated into this document by reference), copies of comments received during public review of the Draft EIR, a list of persons or entities commenting on the Draft EIR, and responses to comments received on the Draft EIR. This Final EIR is organized as follows:

- **Section 1, Introduction**, provides an introduction and overview describing the intended use of the Final EIR.
- **Section 2, Summary of Impacts and Mitigation Measures**, lists the environmental impacts that would result from implementation of the proposed project, the level of significance of impacts prior to mitigation, the 1994 LRDP EIR and project-specific mitigation measures that are recommended for the project, and the level of significance of the impacts after mitigation.

- **Section 3, Changes to the Draft EIR**, presents a minor correction to the information presented in the Draft EIR as well as other new information that became available during the circulation of the Draft EIR.
- **Section 4, Mitigation Monitoring and Reporting Program**, reports on the mitigation monitoring and reporting program (MMRP) for the proposed project.
- **Section 5, Comments and Responses to Comments**, contains a list of all agencies and persons who submitted comments on the Draft EIR during the public review period. This section also contains the comment letters followed by responses to comments. Each letter and each comment within a letter have been given a number. Responses are numbered so that they correspond to the appropriate comment. Where appropriate, responses are cross-referenced between letters. This section also includes the transcript from the public hearing and responses to comments received at that hearing.
- **Section 6, List of Preparers**, presents the UC Davis authors, the technical specialists and consultants, the production team, and other key individuals who assisted in the preparation and review of the Final EIR.

Table 2-1 provides an overview of the environmental impact analyses contained in Section 3 of the Focused Tiered Draft EIR. The summary table presents (1) environmental impacts, (2) their level of significance prior to mitigation, (3) recommended 1994 LRDP EIR and project-specific mitigation measures, and (4) the level of significance with mitigation.

3.1 CORRECTION OF INFORMATION NOTED IN DRAFT EIR

Page 3-38 in the Draft EIR incorrectly noted Impact 3.2-1 to be a “less-than-significant” impact. The impact analysis that followed the statement of impact found the impact to be potentially significant. The “Summary of Impacts and Mitigation Measures” (Table 2-1 in the Draft EIR) correctly reported the impact to be potentially significant. The text on page 3-38 of the Draft EIR is hereby revised as noted below.

3.2-4 Development of the Veterinary Medicine Facilities Improvement project could result in the potential failure of Swainson’s hawk nesting efforts. This is considered to be a potentially significant impact.

3.2 OTHER NEW INFORMATION

3.2.1 Results of Fourth Quarter 2000 WWTP Effluent Sampling: Copper

During circulation of the Draft EIR, results from the most recent quarterly testing of effluent from the campus Wastewater Treatment Plant (WWTP) became available and showed that copper detected in the effluent was in excess of the permitted level. The WWTP permit limit is 13 parts per billion (ppb), and the results of the December 2000 sampling indicated copper concentrations of 16 ppb in the WWTP effluent. The previous sampling of effluent from the new WWTP, which opened in March 2000, indicated that the new WWTP was in compliance with all permit limits, including copper in the effluent (5.4 ppb in June 2000 and 10 ppb in September 2000).

The 1994 LRDP EIR stated that, “increased flows to the Campus Wastewater Treatment Plant due to development allowed under the 1994 LRDP would generate increased discharge of treated effluent into the South Fork of Putah Creek which could adversely affect receiving water quality.” This impact was considered to be significant (LRDP Draft EIR page 4.8-23). To reduce this impact to a less-than-significant level, the following mitigation measures were adopted (LRDP Draft EIR page 4.8-24).

- 4.8-6(a) *The Campus shall continue to monitor effluent discharge, in compliance with WDR Order No. 92-040¹, from the wastewater treatment plant to identify any exceedances of established WDR effluent limits.*
- 4.8-6(b) *If the effluent limits established in WDR Order No. 92-040 are exceeded, and action is required by the CVRWQCB, the Campus shall make modifications to the pretreatment program to ensure compliance with established effluent limits.*

¹ In 1997, WDR Order No. 92-040 was superseded by WDR Order No. 970-236.

- 4.8-6(c) *The Campus shall apply for and comply with any requirements of a NPDES WDRs² for the proposed new wastewater treatment plant prior to plant operation.*

As anticipated in the 1994 LRDP EIR (LRDP Draft EIR page 4.8-23) the campus has constructed a new WWTP. Consistent with the requirement of CEQA, an EIR was prepared for that project (WWTP Replacement Project Draft EIR, October 1996, and Final EIR, March 1997). The 1997 WWTP EIR stated that, “continued discharge of treated effluent into the South Fork of Putah Creek could result in potential water quality degradation because of the presence of toxic pollutants in the WWTP effluent” (WWTP Draft EIR page 4.1-54). Consistent with the 1994 LRDP EIR, this impact was considered potentially significant. To reduce this impact to a less than-significant-level, the following mitigation measures were adopted (WWTP Final EIR page 2-3) in addition to the 1994 LRDP mitigation measures.

- 4.1-6(a) *The Campus shall strictly implement the pretreatment program and aggressively enforce the local limits to reduce pollutant concentrations and ensure the NPDES permit limits would be met. Implementation of the pretreatment program to ensure that local limits are met will include monitoring, inspection of facilities, education, and enforcement, all as described above in “Regulatory Setting”, in Appendix E, and in the UC Davis WWTP Final Local Limits Report (Krieger and Stewart 1995) or subsequent updates.*
- 4.1-6(b) *The Campus will modify the operation and/or treatment processes at the new WWTP as necessary to comply with all applicable permit conditions related to toxics that are in the final NPDES permit for the new WWTP.*

As required by the monitoring programs in both the previous and current WWTP Waste Discharge Requirements (WDR), and consistent with the LRDP and WWTP mitigation measures, the campus has monitored WWTP effluent on a quarterly basis. Between March 1998 and through the first quarter of 2000, the copper concentration in effluent from the old WWTP averaged 33 ppb with a maximum concentration of 59 ppb (Phillips 2001³).

The results of toxicity testing using bioassays in 100% raw effluent at the concentrations of copper discharged from the old plant generally met or exceeded EPA standards using Ceriodaphnia, fathead minnow larvae, and algae⁴. A recently completed yearlong toxicity study of the Cache Creek and Putah Creek watersheds (1998-1999) included sampling stations upstream and downstream from the old campus WWTP discharge to Putah Creek and included samples of 100% effluent from the old WWTP (California Regional Water Quality Control Board 2000). The study concluded that:

In the Putah Creek Watershed, minor levels of toxicity were detected and these tended to be watershed-wide events not related to the UC Davis wastewater

² National Pollutant Discharge Elimination System Waste Discharge Requirements

³ Phillips, David. 2001. Wastewater Treatment Plant Compliance Update. Memorandum from David Phillips, Facilities Water and Waste Service, UC Davis, to Sid England, Office of Resource Management and Planning, UC Davis, February 26.

⁴ UC Davis Wastewater Treatment Plant self-compliance monitoring reports.

treatment plant discharge. Also Putah Creek sampling was coordinated with that conducted by the UC Davis wastewater treatment plant. Results of the treatment plant's self-monitoring indicated no toxicity to any of the test species during the study period."

Through three quarters of effluent sampling at the new WWTP, copper concentrations in effluent have been much lower than from the old WWTP, averaging 10 ppb with a maximum of 16 ppb in the December 2000 sample.

3.2.2 Implementation of LRDP EIR and WWTP EIR Mitigation Measures

In response to the fourth quarter 2000 exceedence, and consistent with the LRDP EIR and WWTP EIR mitigation measures, the campus has taken several steps to bring copper concentrations into compliance with the permit limit. These steps include strictly enforcing the pretreatment program and aggressively enforcing local limits by identifying and removing sources of copper to wastewater where feasible.

- Campus sewer disposal policies were changed in February 2001 to lower the local limit to zero and completely prohibit the discharge of any wastewater containing added copper that is generated by campus users.
- Staff from EH&S performed an audit of campus departments that maintain significant quantities of copper in their laboratories to ensure that all waste is being properly disposed.
- Staff at the campus WWTP are working with campus wastewater researchers, faculty, and outside professional engineers (Brown and Caldwell Environmental Engineering and Consulting) to identify whether operations at the WWTP can be modified to enhance the removal of copper during treatment.
- The campus retained the services of a firm that specializes in source control studies (Larry Walker Associates) to identify enhancements to the pretreatment program to reduce copper loadings.

The results of the campus audit to date have indicated that nearly all campus copper users are properly collecting and disposing of their wastes. However, several users were identified that historically discharged wastewater containing added copper. These sources of copper have now been removed.

The evaluation of methods to reduce effluent copper concentrations at the WWTP prepared by Brown and Caldwell (February 2001⁵) concluded that:

- Limited data available from the new WWTP are not sufficient to conclude that copper concentrations are increasing with time. Trace metal concentrations in wastewater are variable particularly from a source as diverse as UC Davis.

⁵ Brown and Caldwell. 2001. Wastewater Treatment Plant, Methods to Reduce Effluent Copper Concentrations. Letter report to David Phillips, Facilities Engineering Services, UC Davis, February 23.

- Improved effluent sampling and analysis techniques are needed. The methodology used to collect and analyze effluent samples at the new WWTP may be generating samples that are artificially high in copper levels. The two-person clean sampling method (EPA Method 1669) should be used to collect all compliance samples. This method ensures a more representative sample and reduces the potential for contamination. EPA has generated data showing that clean sampling can result in lower concentrations. Improved analysis techniques would distinguish between particulate copper and copper in solution. The existing methodology used by the campus does not distinguish between these forms of copper.
- Potential localized sources of contamination at the effluent monitoring point should be removed because they could bias the compliance samples. Metal structures are present in the vicinity of the sampling point and should be evaluated as a potential source of contamination of the compliance samples.
- Chemical treatment methods could be added to the WWTP processes to remove copper. Ferric chloride could be added to raw sewage from the headworks. Ferric chloride and sodium sulfide could be added to the solids storage basin supernatant. Pilot programs are recommended to test the efficacy of these methodologies. If they are effective, and if source control and improved sampling and analysis methods don't reduce copper levels below permit limits, then these or other chemical treatment methods would be implemented.
- Wetlands could be added to polish effluent before it is discharged to Putah Creek. If measures described above are not sufficient to bring the WWTP into compliance for copper, a pilot wetland project could be used to evaluate whether this method would be feasible for reducing copper concentrations.

Brown and Caldwell concluded that implementation of these measures would lower copper concentrations sufficiently to achieve compliance with the copper limit in the permit for the campus WWTP.

The source control evaluation concluded that a major potential source of copper in the WWTP effluent is corrosion of copper pipes (Larry Walker Associates 2001⁶). The study noted that replacement of existing copper pipes and using alternative materials in new construction is not considered feasible. It stated that reducing velocities and temperatures in hot water circulating systems may reduce copper loadings and should be evaluated by the campus. UC Davis Fleet Services and Unitrans garages are potential sources of copper discharges and should be evaluated to be sure standard best management practices are being implemented. Recommendations were also made for other miscellaneous sources. As part of the implementation of the mitigation measures identified in the LRDP EIR and WWTP EIR, the campus will evaluate and implement these recommendations if efficacious and feasible, and if needed after implementing the recommendations described above for reducing copper concentration at the WWTP.

⁶ Larry Walker Associates. 2001. Copper Reduction Options. Memorandum to David Phillips, UC Davis, February 14.

Implementation of the above described measures by the campus, previously adopted as mitigation measures and identified in the LRDP EIR and WWTP EIR, will reduce the copper concentration in WWTP effluent to within the permit limit. No new significant impacts have been identified and no new mitigation measures are required.

3.2.3 Contribution of Proposed Project

The proposed project includes no special characteristics that would make it an atypical contributor of copper to the wastewater received at the WWTP due either to its design or the operation of the facility. The project would be required to comply with the campus pre-treatment program and therefore no copper containing compounds would be discharged to the sanitary sewer from the proposed facility. Similar to other laboratories on campus, the new facility would be subjected to periodic audits to ensure that all wastes including copper containing materials are disposed of properly. Therefore, as for most other campus buildings, the more likely source of copper from the proposed project would be corrosion of copper pipes.

If the concentration of copper in wastewater from future projects averages the same as that currently entering the plant, no change in effluent concentrations would occur. Unless a new project is an extremely large source of copper entering the WWTP, the effect of the new project on copper concentrations in effluent levels would be de minimis. If future projects discharged at copper concentrations lower than current average influent levels, the cumulative effect would be to slightly decrease copper concentration in effluent at the WWTP effluent. If several new large projects were added to the WWTP that had copper levels twice current influent concentrations, the copper concentration in effluent at the WWTP would increase only 1 ppb (Phillips 2001).

As identified in the LRDP EIR and WWTP EIR mitigation measures, source control and modification of treatment processes at the WWTP are the correct methods to use to ensure the plant meets discharge limits and will reduce the impact on water quality of copper in the WWTP effluent to a less-than-significant level. Because the proposed project will not be an atypical source of copper, it would not contribute to an increased exceedence of the permit limit for copper in effluent and would make a de minimis contribution to the concentration of copper in WWTP effluent from all campus sources. No additional mitigation measures are required to address project-level and cumulative water quality impacts of increased discharges of wastewater to the WWTP.

CEQA requires that a lead agency establish a program for monitoring and reporting on mitigation measures adopted as part of the environmental review process. This MMRP is designed to ensure that, if the proposed project is approved, the mitigation measures identified in the Draft and Final EIRs will be implemented.

Two project-specific mitigation measures have been included in the proposed project to address disturbance impacts to active burrowing owl burrows and the potential failure of Swainson's hawk nesting efforts due to development in the Health Sciences District. The mitigation monitoring program for this project (Table 4-1) presents how the mitigation measures will be monitored for implementation. In addition, this Project incorporates relevant 1994 LRDP EIR mitigation measures, including the 1997 WWTP EIR mitigation measures, previously adopted by The Regents. Compliance with the 1994 LRDP EIR mitigation measures during project implementation will be monitored pursuant to the 1994 LRDP EIR monitoring program previously adopted by The Regents.

Table 4-1

Mitigation Monitoring and Reporting Program

Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing	Mitigation Responsibility
<p>3.2-1 Pre-breeding and pre-construction season exclusion measures will be implemented following CDFG guidelines to preclude burrowing owl occupation of the project site. This will involve installing artificial nest boxes in Fall or Winter 2000/2001, closing all ground squirrel burrows, and passively relocating owls by installing one-way exit doors on occupied burrows. In addition, a visual barrier will be installed along the edge of the construction area, and a biological monitor will visit the site twice weekly during the construction period.</p>	<p>Monitor the field to the east of the Health Sciences District for burrows and/or the presence of burrowing owls. Monitor site twice weekly during the construction period. Written notification of proposed actions and pending decisions regarding the project should be directed to the California Department of Fish and Game.</p>	<p>Pre-breeding and pre-construction surveys and closing of ground squirrel burrows will be conducted in Fall or Winter of 2000/2001. The biological monitor will monitor the site twice weekly until construction is complete.</p>	<p>Office of Resource Management and Planning.</p>
<p>3.2-2 Construction of the proposed parking lot would occur either outside the Swainson's hawk nesting season or earlier in the season only if it is confirmed that the nest is not active during the season when construction would occur.</p>	<p>Monitor the site prior to construction activities to confirm the absence of active nests. Written notification of proposed actions and pending decisions regarding the project should be directed to the California Department of Fish and Game.</p>	<p>Parking lot construction would not occur during April through August if Swainson's hawk nests in the vicinity of the project are confirmed to be active during the year of construction.</p>	<p>Office of Resource Management and Planning.</p>