R BATHA

City of Sacramento Combined Sewer System Rehabilitation And Improvement Plan

Draft Environmental Impact Report

SCH No. 96082013

PREPARED BY

City of Sacramento

IN CONJUNCTION WITH

EIP Associates
Peak Associates

eip

November 1996

TABLE OF CONTENTS

1. INTRODUCTION

LIST OF FIGURES

LIST OF TABLES

LIST OF TABLES (Cont.)

1. INTRODUCTION

PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

An Environmental Impact Report (EIR) analyzes the environmental effects of a proposed project, indicates ways to reduce or avoid potential environmental damage resulting from the project, and identifies alternatives to the proposed action. An EIR must also disclose significant environmental effects that cannot be avoided; growth-inducing effects; and significant cumulative impacts of the proposed project. The purpose of an EIR is not to recommend either approval or denial of the project, but to provide information to aid in the decision-making process.

SCOPE OF THE EIR

Prior to preparing the Draft EIR for the CSS Improvement and Rehabilitation Plan, the City of Sacramento prepared an Initial Study in accordance with the California Environmental Quality Act (CEQA) (CEQA Guidelines Section 15063). The purpose of an Initial Study is to review all phases of a proposed project including planning, implementation, and operation to determine if the project may have a significant effect on the environment. A Notice of Preparation (NOP) was circulated with the Initial Study stating the City's intention to prepare an EIR and requesting comments from all interested parties on what information or evaluations should be included in the environmental document. A copy of the NOP and Initial Study is included in this Draft EIR as Appendix 15-1. Appendix 15-2 contains all responses to the NOP received during the public review period. These comments were taken into consideration during the preparation of the Draft EIR.

In sum, the scope of this EIR will focus on the following issues:

- Water Quality;
- Noise; and
- Cultural Resources.

ENVIRONMENTAL PROCEDURES

This Draft EIR has been prepared in accordance with the California Environmental Quality Act of 1970 (CEQA), as amended (Public Resources Code, Section 21000, *et seq.*) and the State Guidelines for Implementation of the California Environmental Quality Act of 1970, as amended (California Code of Regulations, Section 15000, *et seq.*). This report also complies with the rules, regulations, and procedures for implementation of the California Environmental Quality Act adopted by the City of Sacramento.

State CEQA Guidelines require that each EIR contain areas of description and analysis. The following list identifies required components of an EIR and the corresponding chapters where located in this document:

Required Description and Analysis	Chapter of the EIR
Summary (CEQA Guidelines, Section 15123)	Chapter 2
Description of Project (CEQA Guidelines, Section 15124)	Chapter 4
Alternatives to the Proposed Action (CEQA Guidelines, Section 15126 [d])	Chapter 5
Description of Environmental Setting (CEQA Guidelines, Section 15125)	Chapter 7
Environmental Impact (CEQA Guidelines, Sections 15126 and 15143)	Chapter 7
Growth Inducing Impacts (CEQA Guidelines, Section 15126)	Chapter 8
Cumulative Impacts (CEQA Guidelines, Section 15355)	Chapter 9
Unavoidable Adverse Environmental Effects (CEQA Guidelines, Section 15126)	Chapter 10

TYPE OF EIR

This EIR is considered both a Project EIR and Program EIR, pursuant to Sections 15161 and 15168 of the CEQA Guidelines. A Project EIR examines the environmental impacts of a specific project. This type of EIR focuses on the changes in the environment that would result from implementation of the project, including construction and operation. A Program EIR assesses the impacts of a series of actions that can be characterized as one large project and are related in one of the four ways described in Section 15168(a) of the CEQA Guidelines:

- geographically;
- as logical parts in a chain of contemplated actions;
- in connections with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or
- as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

The CSS Rehabilitation and Improvement Plan is divided into two phases. Phase 1 includes specific modifications to existing Pump Station 1/1A, Pump Station 2, Pioneer Reservoir that would occur over the first ten years of Plan implementation. Phase 2, while more programmatic in its definition, would involve designing and constructing a combination of facilities including underground storage structures, upsized sewers and sewer replacement, which would occur over the remaining ten years of Plan implementation. Rehabilitation and replacement of the CSS underground piping system would continue throughout and beyond both phases, up to 30 years.

The EIR is considered project-specific because it provides a project-level analysis of impacts associated with construction and operation of Phase 1 of the CSS Plan. This EIR also serves as a Program EIR because Phase 2 of the proposed CSS Plan is considered, at this stage, long-term and more programmatic in nature. At this time it is unknown exactly what facilities proposed in Phase 2 would be utilized to alleviate specific flooding concerns present within the plan area. As such, the analysis for Phase 2 is necessarily broad in this EIR, commensurate with the level of detail under the project description.

In addition to providing project- and programmatic-level analysis of the CSS Plan, this EIR will be used to simplify the task of preparing future environmental documents on the specific elements of Phase 2, such as the installation of regional underground storage facilities. It is expected that the programmatic aspect of this EIR will be incorporated by reference in future documentation dealing with secondary/indirect impacts, cumulative impacts, and other factors that apply to the CSS Plan as a whole.

EIR PROCESS

This EIR will initially be published as a Draft EIR and will be subject to review and comment by the public, as well as all responsible and other interested jurisdictions, agencies, and organizations during a period of 45 days, beginning November 8 and ending December 23, 1996. The project sponsor is the City of Sacramento, Department of Utilities. In conformance with Section 15050 and 15367 of State CEQA Guidelines, the City of Sacramento has been designated the "lead agency," which is defined as the public agency that has the principal responsibility for carrying out the project. The public is encouraged to respond in writing to this Draft EIR during the public review period. Comments or questions about this Draft EIR should be addressed to:

Joe Broadhead, EIR Project Manager
City of Sacramento, Department of Planning and Development
Planning Services Division, Environmental Services
1231 I Street, Room 300
Sacramento, California 95814
(916) 264-7622
(916) 264-7185 FAX

The Department of Utilities contact for the CSS Improvement and Rehabilitation Plan is:

City of Sacramento
Planning Services Division
Department of Utilities
Engineering Services Division
Rick Batha, Senior Engineer
5770 Freeport Boulevard, Suite 100
Sacramento, CA 95822
(916) 433-6625
(916) 433-6652 FAX

Written responses to comments on the Draft EIR will be prepared. The responses to comments may specify changes to the Draft EIR. The responses to comments and any changes to the Draft EIR therein specified will become the Final EIR. The Final EIR will be presented to the Sacramento City Council for certification as to its adequacy under CEQA. At such time, the City Council will also be asked to adopt findings and commit to applicable mitigation measures as required by CEQA.

RESPONSIBLE AND TRUSTEE AGENCIES

A Responsible Agency is a public agency which has discretionary approval over one or more actions involved with the implementation of the proposed project. Trustee Agencies are state agencies having discretionary approval or jurisdiction by law over material resources affected by a project. The Utilities Department will apply for the permits and approvals necessary for the construction of the proposed CSS Improvement and Rehabilitation Plan. The responsible and trustee agencies include, but are not limited to, the following:

Responsible Agencies

State Water Resources Control Board
  Water Quality
Central Valley Regional Water Quality Control Board
Environmental Protection Agency

Trustee Agencies

U.S. Fish & Wildlife Service
State Department of Fish and Game
State Department of Parks and Recreation
Sacramento County Regional Sanitation District

Reviewing Agencies

The EIR has been circulated to the following agencies listed below.

U.S. Army Corps of Engineers
Boating and Waterways
Office of Historic Preservation
Reclamation Board/American River Flood Control District
Water Resources
Caltrans
Air Resources Board
Sacramento Air Quality Management District
Native American Heritage Commission
Department of Toxic Substances

HOW TO USE THIS REPORT

This report includes eight principal parts: Summary, Overview of the Existing Combined Sewer System, Project Description, Alternatives to the Proposed Project, Related Projects, Environmental Analysis (Setting, Impacts, and Mitigation Measures), CEQA Considerations, and Appendices.

The **Summary,** Chapter 2, presents an overview of the results and conclusions of the environmental evaluation. This section identifies project impacts and available mitigation measures for use by the City in reviewing the CSS Plan and establishing conditions under which the CSS Plan may be developed.

The **Overview of the Existing Combined Sewer System**, Chapter 3, provides a thorough description of the existing system, NPDES requirements, and a discussion of how and why the CSS Plan has been developed.

The **Project Description,** Chapter 4, includes a discussion of the location of the CSS Plan and proposed plans for development of the project area.

The **Project Alternatives,** Chapter 5, includes an assessment of alternative methods for accomplishing the basic objectives of the CSS Plan. This assessment, required under CEQA, must provide adequate information for decision makers to make a reasonable choice between alternatives based on the environmental aspects of the CSS Plan and other alternatives.

The **Related Projects**, Chapter 6, includes a discussion of project-related actions that would not be part of development in the project area, but are related to the CSS Plan.

The **Environmental Analysis**, Chapter 7, includes a topic-by-topic analysis of impacts that would or could result from implementation of the CSS Plan. The impact discussion is divided into three subgroups as applicable: Phase 1, Phase 2 and Cumulative Impacts. The results of field visits, data collection and review and agency contacts are presented in the text.

CEQA Considerations, Chapters 8 through 10, includes a discussion of issues required by CEQA: unavoidable adverse impacts, irreversible environmental changes, growth inducement, and cumulative impacts.

The **Appendices** contain a number of reference items providing support and documentation of the analysis performed for this report.

2. SUMMARY

2. SUMMARY

INTRODUCTION

This summary provides an overview of the proposed Combined Sewer System (CSS) Improvement and Rehabilitation Plan project, which is described in detail in Chapter 4, Project Description, and the conclusions of the Draft Environmental Impact Report (EIR) analysis, provided in detail in Chapter 7. This chapter also summarizes the alternatives to the project that are described in Chapter 5, Alternatives to the Proposed Project and identifies the Environmentally Superior Alternative. Table 2-1, at the end of this chapter, compiles the environmental effects of the project and the alternatives identified in each technical issue section of Chapter 7. The table consists of the environmental impacts, the significance of the impact, the proposed mitigation measure, and the significance of the impact after the mitigation measure is implemented.

SUMMARY OF PROJECT DESCRIPTION

Location

The CSS service area encompasses approximately 11,300 acres. Approximately 7,500 acres of the service area includes the Downtown, East Sacramento, and Land Park areas, which contribute both sanitary sewage and storm drainage flows to the CSS. A second area of approximately 3,700 acres encompasses the River Park, California State University, and far eastern Sacramento areas and contributes only sanitary sewage flows to the CSS. Lastly, a third area of approximately 100 acres located in southern Sacramento contributes only storm drainage flows (refer to Figure 3-1 in Chapter 3, Overview of the Existing Combined Sewer System for CSS service area map).

Plan Description

The CSS Rehabilitation and Improvement Plan is divided into two phases. Phase 1 includes specific modifications to existing Pump Station 1/1A, Pump Station 2, Pioneer Reservoir and rehabilitation and replacement of portions of the existing underground collection/piping system. Phase 2, while more programmatic in its definition, would involve designing and constructing a combination of facilities including underground storage structures, upsized sewers and sewer replacement. Rehabilitation and replacement of the CSS system would continue during Phase 2.

The primary objective of Phase 1 is to implement project-specific improvements and rehabilitation to the CSS that would assure operating reliability and reduce street flooding in the CSS service area. These improvements would be implemented over the first five years of the Plan. This initial phase involves the two existing Pump Stations (stations 1/1A, 2) since the Pumping Stations are responsible for pumping all CSS wastewater for treatment and disposal. Without the operating reliability of the Pumping Stations, the system could fail and result in flooding and severe outflows. However, increasing Pump Station capacities alone cannot address these issues.

It is also necessary to modify Pioneer Reservoir, which would decrease the number and volume of CSOs to the Sacramento River. In addition, since the capacity of the system would be increased, the underground piping system must also be improved. Portions of the piping system are over 100 years old and have structural defects including cracked pipes, corrosion, deteriorated and missing grout at pipe joints, and root intrusion that can clog sewers and limit hydraulic capacity.

The objective of Phase 2 is to design and construct facilities to alleviate flooding and outflows to local areas. At this time, the combination of facilities needed is unknown. Therefore, these components are evaluated at a more general, programmatic level than Phase 1.

SUMMARY OF PROJECT ALTERNATIVES

The following summary describes the two alternatives to the proposed CSS Plan that are evaluated in this Draft EIR. For a complete description of project alternatives, please see Chapter 5, Alternatives.

Alternative AA: No Project Alternative

The No Project Alternative does not include the outflow, local flood or CSO control improvements identified in the CSS Improvement and Rehabilitation Plan, dated July 1995. Under this alternative, the CSS would remain as presently functioning. Any changes to the CSS are purely rehabilitative in nature and consist solely of the rehabilitation items identified in the CSS Plan. This alternative will be the baseline by which the proposed project and other alternatives are measured. It is assumed that implementation of this alternative would result in a permanent CDO and may cause a moratorium on new development within the CSS service area and possibly major fines.

Alternative AB: Separated Sewer Alternative

This alternative would include the construction of a new sanitary sewer system in the CSS service area and conversion of the existing CSS pipelines to a storm drainage system conveying only storm water runoff. It should be noted that the new sanitary sewer system does not meet the project objective of providing an improved level of local flood control for the existing CSS area. The Separate Sanitary Sewer Alternative includes only a minor flood control upgrade beyond the capacity of the existing system. The existing system provides flood control to a 2-year event in most areas. Under this alternative, CSOs are reduced or eliminated and flood control is slightly improved by removing the sewage portion of flow from the conveyance system. This alternative also reduces outflows.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

In addition to the discussion and comparison of impacts of the alternatives to the proposed project, CEQA requires that an "environmentally superior" alternative be selected and the reasons for such selection disclosed. In general, the environmentally superior alternative is the alternative which would be expected to generate the least adverse impacts. In this case, the " CSS

Improvement and Rehabilitation Plan" is considered the "environmentally superior" to either the No Project or the Sewer Separation alternative. The proposed project includes adding a disinfection to Pioneer Reservoir prior to discharge into the Sacramento River. This would enable wastewater and stormwater to be treated for pathogens prior to discharge into the river, in comparison to the Sewer Separation Alternative and the No Project Alternative which would continue the practice of discharging untreated stormwater directly into the river. The treatment of stormwater for pathogens prior to discharge would eliminate a significant source of contamination and improve the overall health of the Sacramento River, in contrast to the other two alternatives. Based on the impact analyses and conclusions, and the comparison of the relative impacts of the alternatives, the proposed project is environmentally superior to either the No Project and Sewer Separation alternatives.

SCOPE OF THE EIR

The City of Sacramento, as lead agency, identified potentially significant impacts which would result from project implementation in the Notice of Preparation and Initial Study for this EIR circulated beginning August 6, 1996 (found in Appendix 15-1). Based on the Initial Study, the City determined that the following areas of potentially significant impact should be addressed in the EIR:

- Water Quality
- Noise
- Cultural Resources

The following areas of potential impact are not addressed because they were identified in the Notice of Preparation and Initial Study as having a beneficial impact, a less-than-significant impact, or not having any impact include:

- Land Use and Planning
- Population, Employment and Housing
- Geology and Soils
- Water--Hydrology and Groundwater
- Air Quality
- Transportation/Circulation
- Biological Resources
- Energy and Mineral Resources
- Hazards
- Noise--Construction-related and Long-Term (except Pump Station 2)
- Public Services
- Utilities and Service Systems
- Aesthetics
- Recreation

For a summary discussion of the above issues, please see below (also refer to Appendix 15-1 for the complete Initial Study). It should be noted that since the publication of the Notice of Preparation and Initial Study, the CSS Plan has been further refined to include a change to the proposed Pump Station 2. Originally, the capacity of the new pump station was proposed at 160 MGD. The City determined that an additional 30 MGD is necessary to ensure there will be no NPDES permit violations. In addition, since this modification would allow wet weather pumps to pump directly to the City's Combined Wastewater Treatment Plant (CWTP) and bypass the flow control structure, operations of Pump Station 2 can be simplified. The modification would also result in easier operation of the CWTP since flows can be more easily regulated at Pump Station 2. This change does not alter the conclusions of the Initial Study analysis. This Draft EIR assumes the 190 MGD. Additional modifications may occur as the engineering details are completed. Any changes that significantly alter the conclusions of this EIR would require additional environmental evaluation at that time.

Based on the findings of the Initial Study it was determined by the City that the Proposed CSS Plan would either have a beneficial impact, a less-than-significant impact or not have any impact to the several checklist items. The findings of the Initial Study are summarized below.

Land Use and Planning

All of the proposed improvements contained within Phase 1 and 2 of the CSS Plan would not conflict with the City's General Plan or any other applicable environmental plans or policies. All of the proposed improvements associated with the project would occur within areas already designated on the City's Land Use Map for public utility uses and zoned accordingly. In addition, the CSS Plan would help to implement the City's General Plan goals and policies that deal with providing adequate public services to developed areas, reducing local flooding, and minimizing potential public health risks. From a land use and planning perspective the CSS Plan would not create any potentially significant impacts.

Population and Housing

Phase 1 and Phase 2 components of the proposed CSS Plan would support the development and buildout of the property within the CSS service area, but would not generate additional population as would a residential project, for example. However, the growth inducing potential is an issue and is addressed in Chapter 8 of this EIR.

Construction of Phase 1 components would occur within areas designated for public utility uses. As such, the displacement of existing housing would not be considered an impact for Phase 1. With the exception of regional storage facilities under Phase 2, all improvements and rehabilitation items would occur within existing street rights-of-way. The acquisition of some property may be required at the UPR or UCD Medical Center sites, but this acquisition would not affect residential properties.

Geology

The CSS Plan service area is located within a developed area of the City of Sacramento. No component of either Phase 1 or 2 would involve exposing people to a potentially hazardous or unsafe situation. However, construction activities could pose some risks. The City requires that all public works projects conform to standards outlined in the City's *Standard Specifications for*

Public Works Construction and the *Administrative and Technical Procedural Manual for Grading and Erosion and Sediment Control.* These standards are designed to ensure that all structures are built to current City code and that appropriate erosion control measures are implemented during construction. In addition, the State also requires certain conditions be met in order to avoid any potentially hazardous conditions from occurring. All construction activity would conform to the applicable local, State or federal requirements and/or standards set forth in the California Code of Regulations (Title 8), the Occupational Safety and Health Act (OSHA), the Uniform Building Code (UBC) (Section A33, Excavation and Grading), and the American Society for Testing and Materials standards. Any potentially significant impacts would therefore be reduced to less than significant levels through conformance with the applicable local, State, and federal regulations. Applicable regulations are summarized in Appendix 15-3.

Water

Since the CSS Plan would not increase the amount of impervious surface cover, it would not result in an increase in the amount or rate of surface runoff. In addition, the CSS Plan would have a beneficial effect in the manner in which combined wastewater runoff is collected and discharged. The CSS Plan would reduce flooding in the area by pumping more water from the system as well as storing combined wastewater until the system can accommodate the flows. The amount of combined wastewater entering the Sacramento River would not be significantly altered, if at all, as a result of Plan implementation.

Due to the implementation of existing regulations, potential water quality impacts during construction related to sedimentation, erosion, and debris/waste disposal would be minimized. Similarly, dewatering activity is regulated so there would be no significant impacts relative to the change in the quantity of groundwater, and/or direction or rate of flow, and groundwater quality. It should be noted that groundwater is not a source of public water supply in the CSS Service Area. However, groundwater is used in lieu of treated water for park irrigation. Implementation of regulations would minimize any potential impacts on groundwater.

Air Quality

The CSS Plan includes the installation of natural gas and/or diesel engines to power emergency generators when electricity is not available due to power outages during inclement weather conditions. This type of use would operate less than 100 hours per year and is considered a short-term use for public safety reasons and is therefore exempt from the Sacramento Metropolitan Air Quality Management District (SMAQMD) regulations (refer to Appendix 15-3). Phase 1 includes the installation of new odor controls at the Pumping Station 2 facility to further reduce existing odor concerns at the facility. These include a new wet well and increasing pumping capacity, which would keep flows moving through the system, rather than stagnating as they presently do. Phase 2 also includes upgrades to the existing system to enhance future system reliability to minimize odor impacts. Since the CSS Plan would reduce odor problems and not create additional odor, this is considered a beneficial impact of the CSS Plan. No potentially significant long or short-term air quality impacts would occur as a result of Plan implementation.

During construction the short-term emissions of particulate matter would be controlled through existing City and SMAQMD regulations. It is anticipated that construction activities would involve minimal grading or ground disturbance of unpaved areas. Compliance with City requirements would reduce any potentially significant short-term construction-related impacts to less than significant levels.

Transportation/Circulation

The CSS Plan entails improving the City's existing combined sewer system. Due to the nature of the project it is not considered a traffic generator, therefore any long-term traffic impacts would be considered less than significant. During construction, the contractor would be required to comply with the City's adopted *Standard Specifications for Public Works Construction*, as well as prepare a traffic control plan in accordance with the Work Area Traffic Control Handbook (WATCH) program. Compliance with City requirements would reduce any potentially significant short-term construction-related impacts to less than significant levels.

Biological Resources

As mentioned earlier under Geology, the CSS service area is located in an urban environment. No sensitive habitat, wetlands or designated natural communities exist. Construction would be limited to existing roadways, pumping facilities, the CWTP and possibly the UC Davis Medical Center and the Union Pacific Railyards site. The Plan would increase the treatment capacity of the system which would result in less untreated combined wastewater being directly pumped into the Sacramento River during the wet season. This would benefit the threatened fish species and the overall health of the river.

Construction activities associated with Phase 1 and 2, may adversely impact the existing root systems of the mature street trees. Under the City's Tree Ordinance, prior to the removal of any tree or any activity that may injure an existing street tree, approval is required by the Director of City Neighborhood Services (refer to Appendix 15-3). In addition, in the event tree pruning is required this would occur during the non-breeding season to avoid disturbing potential nest sites of any migratory birds. Compliance with existing City requirements would reduce any potentially significant biological impacts to less-than-significant levels.

Energy and Mineral Resources

Phase 1 and 2 of the CSS Plan would include upgrading the existing pumps, powered by electric motors to enhance pumping effectiveness, installing jacket water heaters on three natural gas engines at Pumping Station 1, and adding a diesel powered generator to Pumping Station 2 for emergency power. A 190 MGD pumping station is proposed at Pumping Station 2 which would include five new pumps powered by electric motors. These improvements would not increase the overall energy consumption over the existing levels, since the new pumps are more efficient than the existing pumps. In addition, energy would be consumed during the short-term Phase 1 and 2 construction activities. This is considered a short-term, temporary activity which would not create any potentially significant impacts to the existing energy supply.

Hazards

One component of Phase 1 involves converting Pioneer Reservoir into a primary treatment facility which would entail using chemical sodium hypochlorite to provide disinfection. Before treated water is released into the Sacramento River it must first be disinfected to remove all traces of disinfectant. The chemical, sodium bisulfite would be used to remove most residual traces of disinfectant. The chemicals would be stored in 10,000 gallon above ground tanks. The use, storage, and transportation of hazardous materials is highly regulated by various federal and State agencies. Cal/OSHA requires a site specific health and safety plan be prepared to ensure the protection of workers from hazardous materials and substances during construction. The City must implement and comply with existing State and federal regulations; therefore, any potentially significant impacts related to the use and storage of hazardous materials would be reduced to less than significant levels.

Temporary construction activities during Phase 1 and 2 may interfere with emergency response plans or routes within the CSS service area, in part by closing portions of streets and intersections. The City's *Standard Specifications for Public Works Construction* addresses this issue. The guidelines require that the contractor furnish, install, and maintain all warning signs and devices necessary to safeguard the public, and to provide for safe routing of vehicular and pedestrian traffic during construction. In addition, the contractor would be required to comply with the WATCH program. Based on compliance with existing City regulations, potentially significant short-term construction impacts would be reduced to less-than-significant levels (refer to Appendix 15-3). In addition, the reduction in flooding could improve emergency response during rainy weather.

Noise

Construction activity associated with the CSS Plan could create short-term noise impacts. However, City Code Chapter 66, "Noise Control", exempts activities including erection, excavation, demolition, alteration or repair of any building or structure between certain specified hours. The CSS Plan components would be constructed within specified time frames. Construction activity that would be associated with implementation of the CSS Plan would not exceed accepted vibration standards.

Long-term noise impacts were found to be negligible related to project operations since components would be housed within existing structures. The possible exception would be long-term noise impacts attributable to the Pump Station 2 screen cleaners. These impacts are addressed in Section 7.3.

Public Services

Phase 1 and 2 of the CSS Plan would not result in an increase to the projected or existing population of the CSS service area or region. Therefore, the demand for government services including new schools, fire and police protection would not change due to Plan implementation. Maintenance of the rehabilitated facilities would not increase because the components of the project were developed specifically to reduce the amount of operation and maintenance required at the existing facilities. In addition, the City's *Standard Specifications for Public Works Construction* require that any damage to public roadways as a result of project construction would be repaired by the contractor.

Utilities and Service Systems

As mentioned earlier, the CSS Plan does not include increasing the population within the CSS service area. Therefore, implementation of the Plan would not result in the need for any new utility or service system. The Phase 1 project-specific and Phase 2 programmatic improvements may disrupt sewer and stormwater drainage systems within the service area, but this would occur only on a temporary basis during construction. In addition, the City would implement procedures developed by the Joint Utilities Coordination Committee that assist state agencies, local agencies and utility companies in coordinating public improvement projects to avoid potential conflicts. All contractors are required by the City to implement these procedures and the Underground Service Alert (USA) system. Therefore the potentially significant impacts to utilities and service systems would be reduced to less-than-significant levels.

Aesthetics

Many of the improvements involve upgrading underground pipelines or rehabilitating facilities within existing structures. New construction, including the construction of new tanks and roof modifications to install equipment hatches would be subject to review by the City's Design Review and Preservation Board if any of these modifications were proposed on a historically significant structure. The installation of any new lighting would also be required to meet current City standards that require new lighting to be shielded and directed to avoid disturbing adjacent uses. Therefore, no potentially significant visual or aesthetic impacts would occur due to Plan implementation.

Cultural Resources

The CSS Plan would involve replacing or rehabilitating sections of the City's original sewer system that range from 80 to 100 years old, as well as upgrading facilities within the pump stations. Pump Station 1/1A and 2 are listed with the California Office of Historic Preservation and may be eligible for the National Register listing. The other facilities associated with the CSS are not considered historically significant and are not eligible for listing. Any modifications to Pump Station 1/1A and 2 and the original sewer system will be evaluated against applicable federal, State, and City guidelines. In addition, the acquisition of some property may be required at the UPR or UCD Medical Center sites, but no prehistoric or historic sites have been recorded on either site. Due to the implementation of existing regulations, potential impacts to historic resources would be minimized.

Recreation

As mentioned earlier, the CSS Plan would not generate an increase in population that would increase the demand for recreational facilities, nor would the Plan affect existing recreational resources in the long-term. Any short-term interference with park activities due to construction would not be considered an adverse impact on recreational uses since the City's *Standard Specifications for Public Works Construction* requires that any damage to existing park facilities resulting from construction activities would be repaired by the contractor. Therefore, no potentially significant adverse impacts would occur to recreational facilities due to Plan implementation.

SUMMARY TABLE

Information in Table 2-1, Summary of Environmental Impacts, has been organized to correspond with environmental issues discussed in Chapter 7. The summary table is arranged in four columns:

1) Environmental impacts;
2) Level of significance without mitigation;
3) Recommended mitigation measures; and
4) The level of significance after implementation of mitigation measures.

A series of mitigation measures are noted where more than one mitigation measure may be required to reduce the impact to a less-than-significant level.

TABLE 2-1: SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		7.2 Water Quality		
7.2-1	Effluent containing suspended solids would be discharged to the Sacramento River (Phase 1 and Phase 2).		*No mitigation measures would be required for PP, AA, or AB.*	
	PP	LS		N/A
	AA	LS		
	AB	LS		
7.2-2	Effluent containing pathogens would be released to the Sacramento River (Phase 1 and Phase 2).		*No mitigation measures would be required for PP, AA, or AB.*	
	PP	LS		N/A
	AA	LS		
	AB	LS		
7.2-3	Effluent containing Disinfection By-Products would be discharged to the Sacramento River (Phase 1 and Phase 2).		*No mitigation measures would be required for PP, AA, or AB.*	
	PP	LS		N/A
	AA	LS		
	AB	LS		
7.2-4	Effluent containing mercury would be discharged to the Sacramento River (Phase 1 and Phase 2).		*No mitigation measures would be required for PP, AA, or AB.*	
	PP	LS		N/A
	AA	LS		
	AB	LS		
7.2-5	Cumulative mercury loading in Sacramento River (Phase 1 and Phase 2).		*None feasible for PP, AA, or AB.*	
	PP	SU		SU
	AA	SU		
	AB	SU		

PP=Proposed Project AA=No Project Alternative AB=Sewer Separation Alternative LS=Less-than-Significant N/A=Not Applicable
NI=No Impact S=Significant SU=Significant Unavoidable
96023\dei mmary.tbl

TABLE 2-1: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
7.3 Noise			
7.3-1 **Noise from operation of the automatic screen cleaner proposed for Pump Station 2 could affect nearby off-site residences (Phase 1).**		*No mitigation measures would be required for PP, AA or AB.*	N/A
PP	LS		
AA	NI		
AB	NI		
7.3-2 **Noise from operation of the automatic screen cleaner proposed for Pump Station 2, in combination with increased noise from other sources in the vicinity, could result in a significant cumulative effect at nearby off-site residences.**		*No mitigation measures would be required for PP, AA or AB.*	N/A
PP	LS		
AA	NI		
AB	NI		
7.4 Cultural Resources			
7.3-1 **Subsurface Prehistoric Resources (Phase 1).**		Mitigation Measure for PP, AA, and AB *The City of Sacramento shall ensure that any construction activities comply with the following:* *An archeological monitor shall be retained to oversee any subsurface work occurring in the immediate vicinity of the six recorded prehistoric sites. A confidential map with the locations of these sites will be on file with the Project Manager or other appropriate individual, who will arrange to have the monitor present for the areas deemed sensitive. The*	LS
PP	S		
AA	S		
AB	S		

PP=Proposed Project AA=No Project Alternative AB=Sewer Separation Alternative LS=Less-than-Significant N/A=Not Applicable
NI=No Impact S=Significant SU=Significant Unavoidable

TABLE 2-1: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		areas monitored as well as the remainder of the construction shall be subject to the conditions below.	
		In the event of the discovery of any subsurface archeological artifact, feature or deposit during construction activities, work within 100 feet of the find shall be halted, and an archeologist will be contacted for an in-field evaluation.	
		If the resource is determined to be significant, an appropriate plan for resource preservation or site excavation must be developed and implemented.	
		If bone is found that appears to be human, work within 100 feet of the find shall be halted, and the Sacramento County Coroner must be contacted. If the remains are determined to be of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC). The NAHC shall determine the "most likely descendant", who will work to develop a plan for the area of the finding. Construction work shall remain halted in the vicinity of the discovery until the plan can be implemented.	
7.3-2 Historic Buildings (Phase 1).		*No mitigation measures would be required for PP, AA or AB.*	
PP	LS		N/A
AA	LS		
AB	LS		
7.3-3 Historic Structure--Pump Station 1 (Phase 1).		*No mitigation measures would be required for PP, AA or AB.*	
PP	LS		N/A
AA	NI		
AB	LS		

PP=Proposed Project AA=No Project Alternative AB=Sewer Separation Alternative LS=Less-than-Significant N/A=Not Applicable
NI=No Impact S=Significant SU=Significant Unavoidable

TABLE 2-1: SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
7.3-4	**Historic Structure--Pump Station 2 (Phase 1).**		*No mitigation measures would be required for PP, AA or AB.*	N/A
	PP	LS		
	AA	NI		
	AB	LS		
7.3-5	**Historic Structure--Sewers (Phase 1 and Phase 2).**		<u>Mitigation Measure for PP, AA, and AB</u>	
	PP	S	*The City of Sacramento shall document the history of the construction of the sewer system, and record the physical extent, condition and appearance of the extant portions of the early system to determine its historical significance.*	SU
	AA	S		
	AB	S		
7.3-6	**Subsurface Prehistoric Resources (Phase 2).**		<u>Mitigation Measure for PP</u>	
	PP	S	*Implement Mitigation Measure 7.3-1.*	LS
	AA	NI	*No mitigation measures would be required for AA or AB.*	N/A
	AB	NI		N/A
7.3-8	**Cumulative Loss of Cultural Resources.**		<u>Mitigation Measure for PP and AB</u>	
	PP	S	*Implement Mitigation Measure 7.3-1.*	SU
	AA	NI		N/A
	AB	S		SU

PP=Proposed Project AA=No Project Alternative AB=Sewer Separation Alternative LS=Less-than-Significant N/A=Not Applicable
NI=No Impact S=Significant SU=Significant Unavoidable

3. *OVERVIEW OF THE EXISTING COMBINED SEWER SYSTEM*

3. OVERVIEW OF THE EXISTING COMBINED SEWER SYSTEM

INTRODUCTION

This chapter provides an overview of the existing combined sewer system. Sources of information used to prepare this chapter include material summarized from the Combined Sewer System Improvement and Rehabilitation Plan and three preliminary design reports prepared by Brown and Caldwell in April 1996. (The List of Acronyms is found in Chapter 12 and the Glossary of Terms is found in Chapter 13.)

Combined Sewer Systems are wastewater collection systems designed to carry domestic sewage, commercial and industrial wastewater, and surface runoff in a single pipeline. During dry weather, the collection system conveys wastewater flows to a treatment facility. During wet weather, wastewater flows can often exceed the capacity of the collection system and treatment facilities, overflowing directly to water bodies. Combined sewer overflows can be a significant source of water pollution in communities served by combined sewer systems.

BACKGROUND

Construction of Sacramento's sewage collection system was started well over 100 years ago in the downtown area. Sewage from the City was combined with stormwater in a single network of pipes, and was pumped into the Sacramento River using Pump Station 1, a sewage pumping station constructed in 1908 at the southeast corner of U and Front Streets. Pumping Stations accept and transport flows from the underground piping system to either the treatment facilities or directly to the Sacramento River.

As the City developed and expanded in size, a second pumping station, Pump Station 2, was constructed in 1914 at the southwest corner of Riverside Boulevard and 11th Avenue. In conjunction with this development, Sacramento's Combined Sewer System (CSS) was also expanded. Pump Station 2 was designed to serve the areas south and east of the central City area. The construction of combined sewers, for conveying both sanitary and storm flows, was discontinued in 1946. Since that time, separate sanitary and stormwater sewers have been constructed in newer parts of the service area, and portions of the original CSS have been separated.

In 1954, the City completed construction of a primary treatment plant known as the Combined Wastewater Treatment Plant (CWTP) and a pressure main from Pump Station 2 to the CWTP, which was used to treat the sanitary sewage portion of combined wastewater flows. The combined sanitary and stormwater flows frequently exceeded the capacity of the CWTP and were pumped directly to the Sacramento River. These flows are known as combined sewer overflows (CSOs).

In 1972, the City and County of Sacramento began working together to develop a regional wastewater management plan in light of more stringent discharge requirements and the need to upgrade existing treatment facilities. The City and County conducted numerous feasibility studies which led to the determination that 17 existing treatment plants were inadequate to meet the anticipated effluent quality requirements. Construction of the regional wastewater system began in the mid-1970s as part of the Sacramento Regional Wastewater Management Program (Program). The Main goal of the Program was to develop a wastewater management system to comply with the California State Water Quality Control Board, Central Valley Region requirements to eliminate wastewater discharges to the American River and to control the City's CSS discharges of untreated stormwater and sewage to the Sacramento River. This region-wide approach to wastewater management led to the Sacramento County Board of Supervisors creating the Sacramento Regional County Sanitation District (SRCSD) responsible for financing, constructing, and operating the regional system.[1]

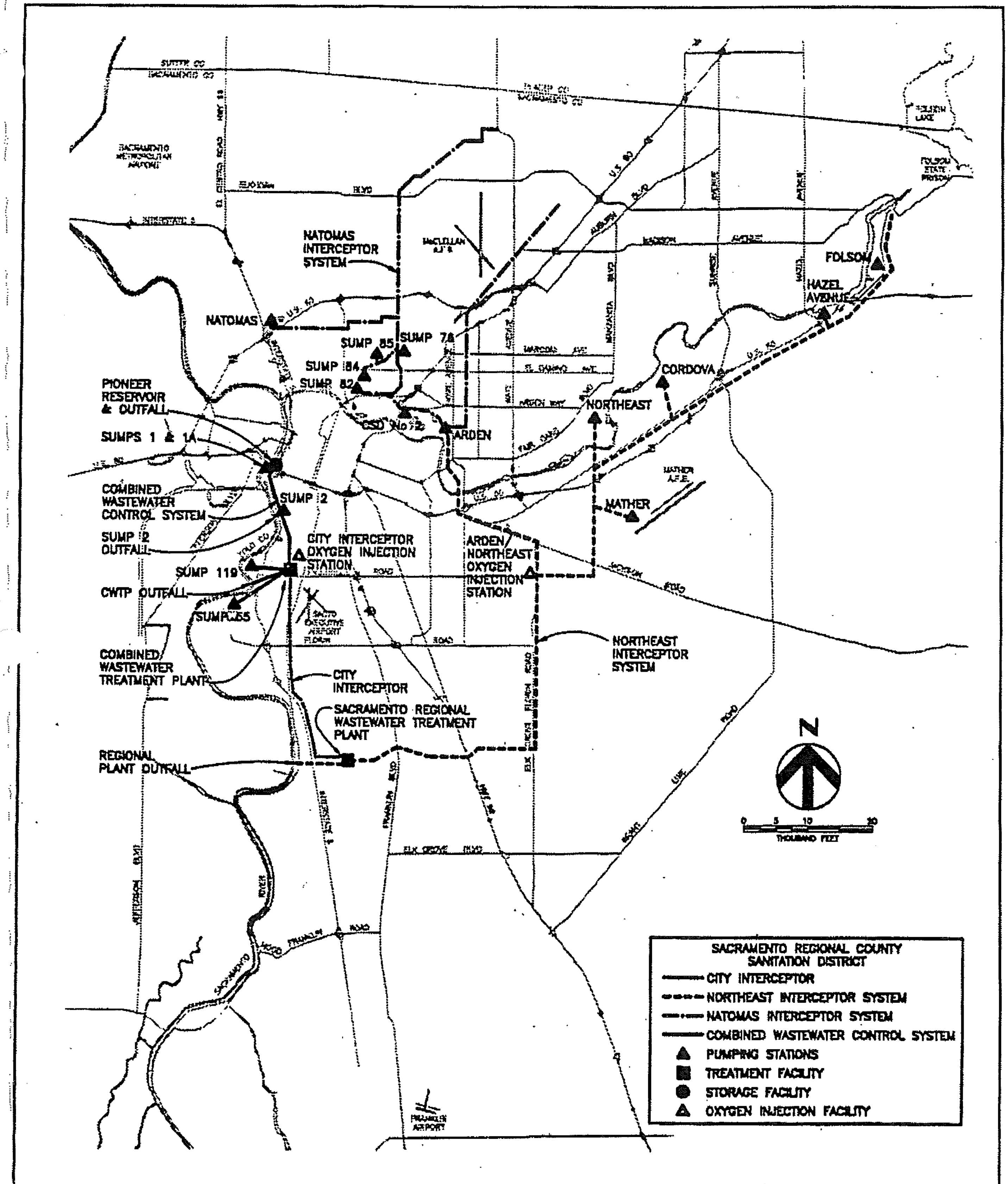
The SRCSD is an independent political entity formally established in 1973. Figure 3-1, Sacramento Regional Wastewater Management System, illustrates the SRCSD service area and its relationship to the City's CSS. The SRCSD provides a regional wastewater, conveyance, treatment, and disposal system for urbanized Sacramento County. The District was formed with a mandate to eliminate all wastewater flows to the American River, minimize raw sewage overflows to the Sacramento River, and to replace 17 separate wastewater entities.[2] The centralization of treatment facilities into one facility operated by the SRCSD, the Sacramento Regional Wastewater Treatment Plant (SRWTP), began in 1976 and was completed in 1982.

In April 1993, the SRCSD, City and County of Sacramento, City of Folsom, and County Sanitation District No. 1, entered into the amended Sacramento Regional Wastewater Management Program Master Interagency Agreement (Interagency Agreement). The first Interagency Agreement was signed in 1974. The Interagency Agreement establishes the role and responsibilities of the District including the construction of new facilities and the operation of the City's combined flow facilities. According to the Interagency Agreement, "the City of Sacramento may make use of maximum available capacity (not to exceed 60 MGD) without the prior consent of the District."[3]

The SRCSD sanitary and stormwater collection system has been effective in reducing pollutant discharges to the Sacramento River. However, new federal regulations related to controlling CSOs, and the Regional Water Quality Control Board (RWQCB) Cease and Desist Order (explained later in this chapter) necessitate that the CSS again be modified and upgraded to reduce untreated discharges to the Sacramento River.

THE EXISTING COMBINED SEWER SYSTEM

The CSS consists of both pipelines and facilities. Facilities include pumping stations, an off-line storage facility known as Pioneer Reservoir, and the City's Combined Wastewater Treatment Plant (CWTP). The collection system consists of trunks, interceptors, reliefs, force mains, laterals, and other pipelines. The total collection system capacity is 5,000,000 cubic feet, 70 percent of which is represented by the trunk sewers. The collection system is divided into networks, which are based on a hydrographic profile or grade basin. The total area contributing flows to the CSS is 11,300 acres: approximately 7,500 acres within Downtown, East Sacramento and Land Park communities contributes sanitary sewage and storm drainage flows to the CSS; 3,700 acres within the communities of East Sacramento and River Park, and CSUS contribute



SOURCE: HDR, *City of Sacramento Combined Wastewater Control System Phase 3*, July 1992.

96023

Figure 3-1

Sacramento Regional Wastewater Management System

only sanitary sewage flows to the CSS; and 100 acres contributes only storm drainage flows to the CSS (see Figure 3-2). A general flow diagram of the existing CSS, including key facilities, is shown on Figure 3-3. The CSS drains to the west to two large pumping stations known as Pump Station 1/1A and Pump Station 2, located on the east side of the Sacramento River. The Pumping Stations accept and transport flows from the underground piping system to either the treatment facilities or directly to the Sacramento River. The City has an agreement with the SRCSD whereby the City can convey a maximum of 60 million gallons per day (MGD) to the SRWTP for secondary treatment and disinfection prior to discharge to the Sacramento River. This capacity is sufficient to treat all CSS dry weather flows and low-intensity storms. However, when the flow rate exceeds 60 MGD during a moderate or large storm (i.e., approximately 1/2 inch or greater of rainfall), the City activates its CWTP and provides advanced primary treatment and disinfection for an additional 130 MGD prior to discharge to the Sacramento River. Thus existing facilities provide 190 MGD treatment capacity. Both the SRWTP and CWTP treat approximately 92 percent of the total CSS flow volume prior to discharge to the Sacramento River. In addition, 23 MGD is stored at Pioneer Reservoir until capacity is available at one of treatment plants and 5 MGD can be stored in the Pioneer Interceptor. The CWTP basins may also be used for storage of flows until capacity is available at the SRWTP.

Pump Station 1/1A

Pump Station 1/1A is located at the southeast corner of U and Front Streets at the 2100 block of Front Street. It consists of two pump buildings; Pump Station 1 Station and Pump Station 1 Annex (1A). Pump Station 1 was constructed in 1908 and modified in 1956. Pump Station 1A was constructed in 1956. Pump Station 1 is powered by natural gas engines and only operates as emergency backup to the newer Pump Station 1A (refer to Figure 3-4).

Pump Stations 1/1A normally are not used during the summer. During dry weather periods, the entire CSS drains to Pump Station 2. Under current procedures, Pump Stations 1/1A do not operate simultaneously because Pump Station 1 is considered to be an emergency backup to Pump Station 1A. During very large storm events (i.e., greater than a 5- or 10-year storm event), some of the pumps at Pump Station 1 operate after all the pumps of Pump Station 1A are already operating. Both Pump Station 1 and Pump Station 1A discharge into a common 60-inch diameter force main that normally discharges to Pioneer Reservoir. In addition, there is a 60-inch diameter emergency outfall which can be opened during high flows and release flow directly to the Sacramento River as a CSO.

Based on the hydraulic analysis of Pump Stations 1/1A operating simultaneously, the theoretical pumping capacity of both Pump Stations is approximately 150 MGD (because with each pump station operating, the individual capacity decreases from 100 MGD to 75 MGD due to increased headloss in the 60-inch force main). The actual combined capacity is, however, even less due to the poor wet well hydraulics of Pump Station 1. The assumed capacity is 130 MGD.

Pump Station 2

Pump Station 2, located at 915 11th Avenue at the southwest corner of Riverside Boulevard and 11th Avenue, was constructed in 1914 and has been modified extensively with additions in 1938

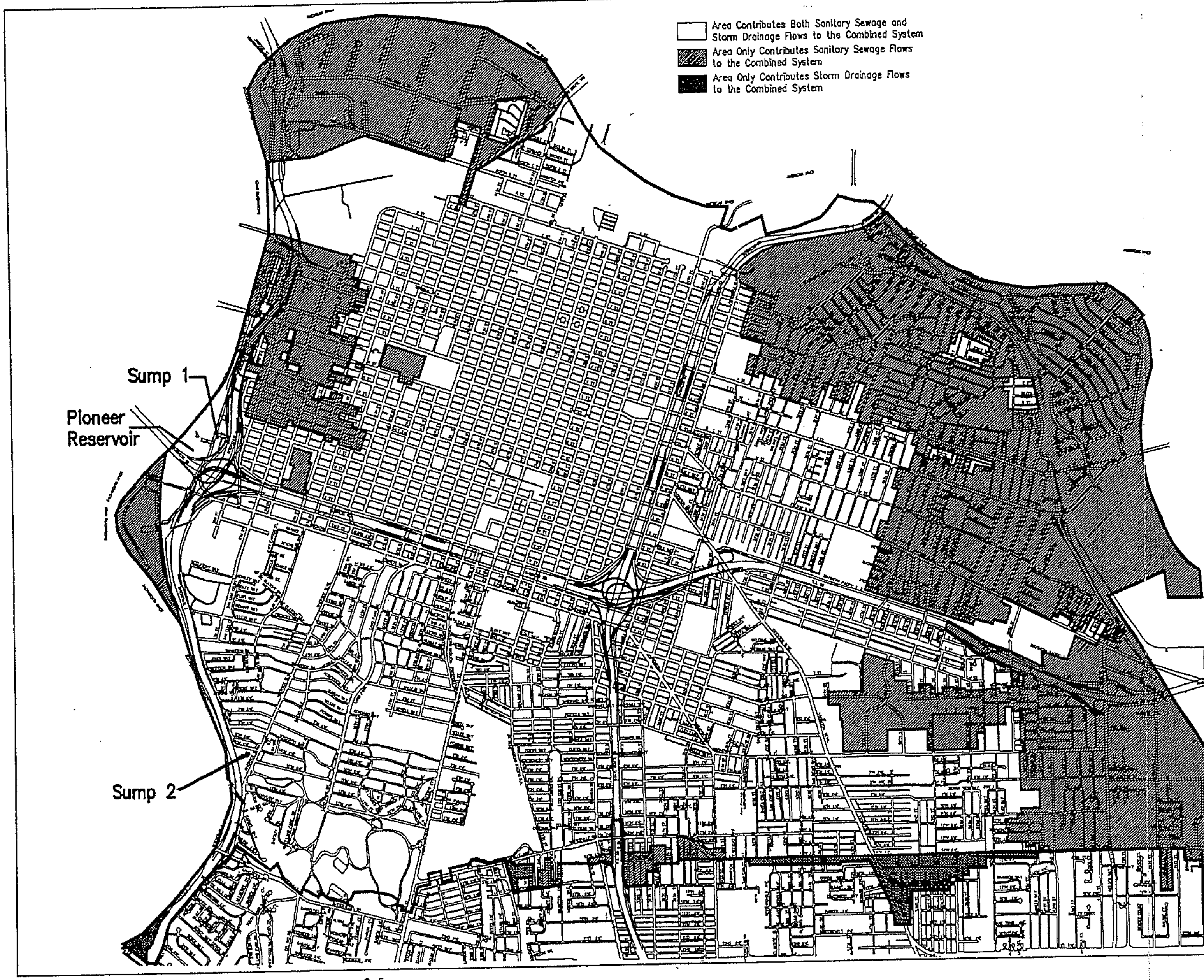
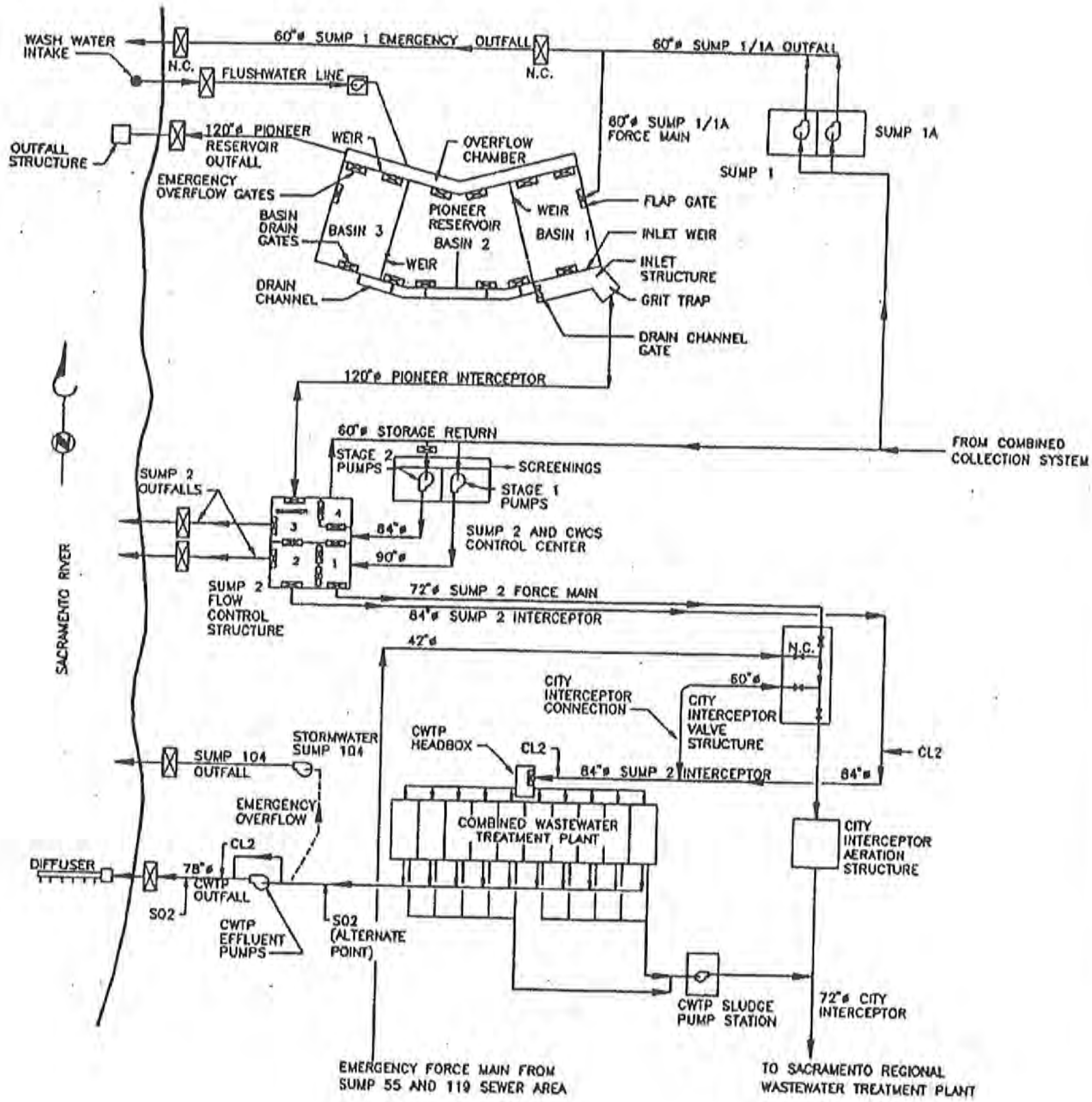


Figure 3-2
Combined Sewer System Service Area

SOURCE: City of Sacramento Dept. of Utilities, Draft Revision, August 10, 1995.

96023



SOURCE: City of Sacramento, Dept. of Utilities, Brown and Caldwell, August 1996.

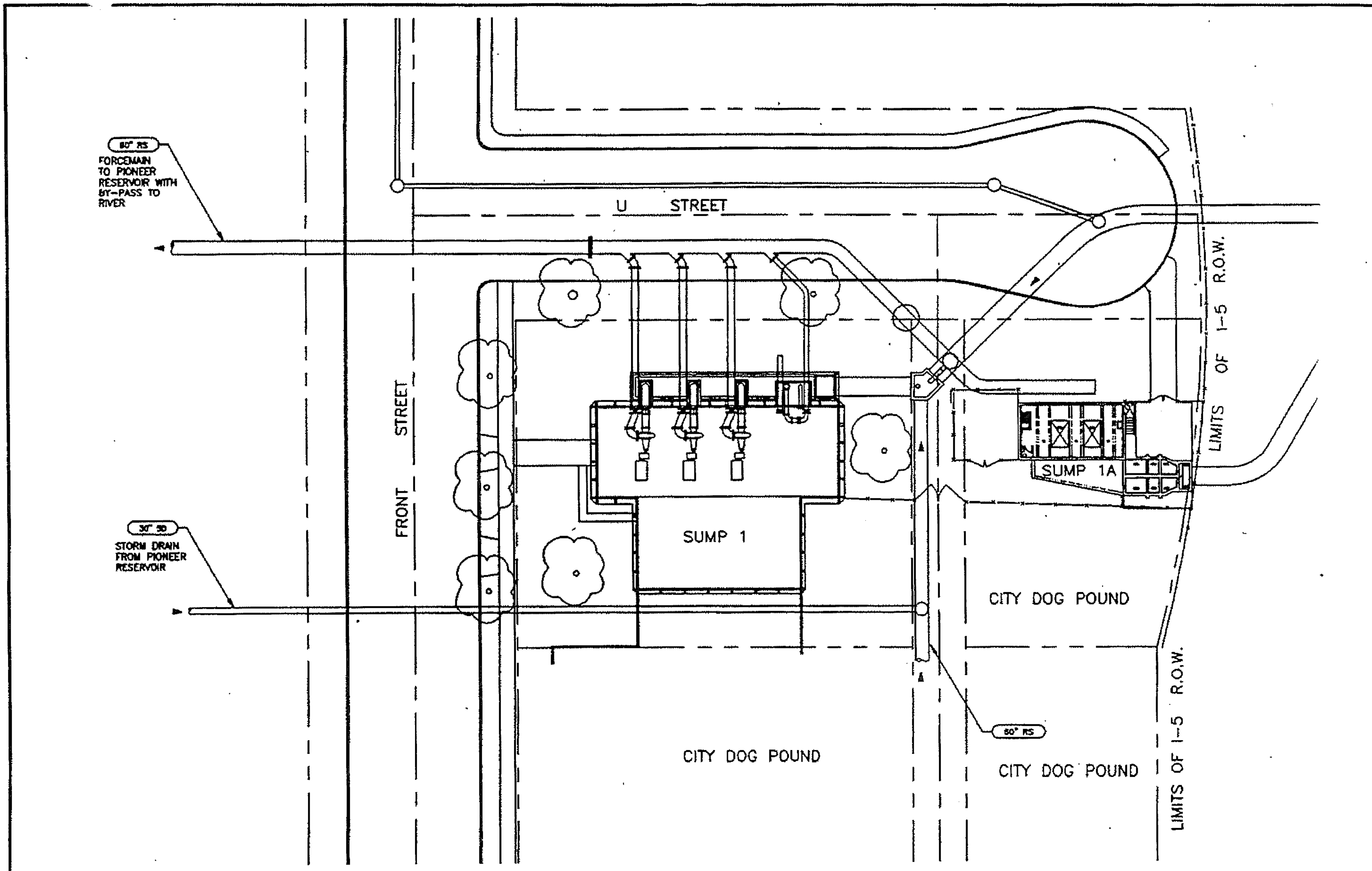
No Scale

Figure 3-3

Combined Sewer System General Flow Diagram

96023

eip



SOURCE: City of Sacramento, Dept. of Utilities, Brown and Caldwell, August 1996.

-N-

No Scale

Figure 3-4

Sump 1/1A Existing Site Plan

96023

and 1977. Pump Station 2 shares the site with the Riverside Water Treatment Plant (RWTP) (which occupies about 70 percent of the site; refer to Figure 3-5). Pump Station 2 is the primary pumping station for the CSS. Pump Station 2 operates continuously throughout the year as well as during storm events, while Pump Station 1/1A operates during large storms. Pump Station 2 is manually operated and has an operator at the station 24 hours per day. Pump Station 2 has a total capacity of 530 MGD. It has two separate sets of pumps called Stage 1 and Stage 2. The largest pump has a capacity of 90 MGD and is reserved as a standby unit. The pump station has a firm capacity of 440 MGD.

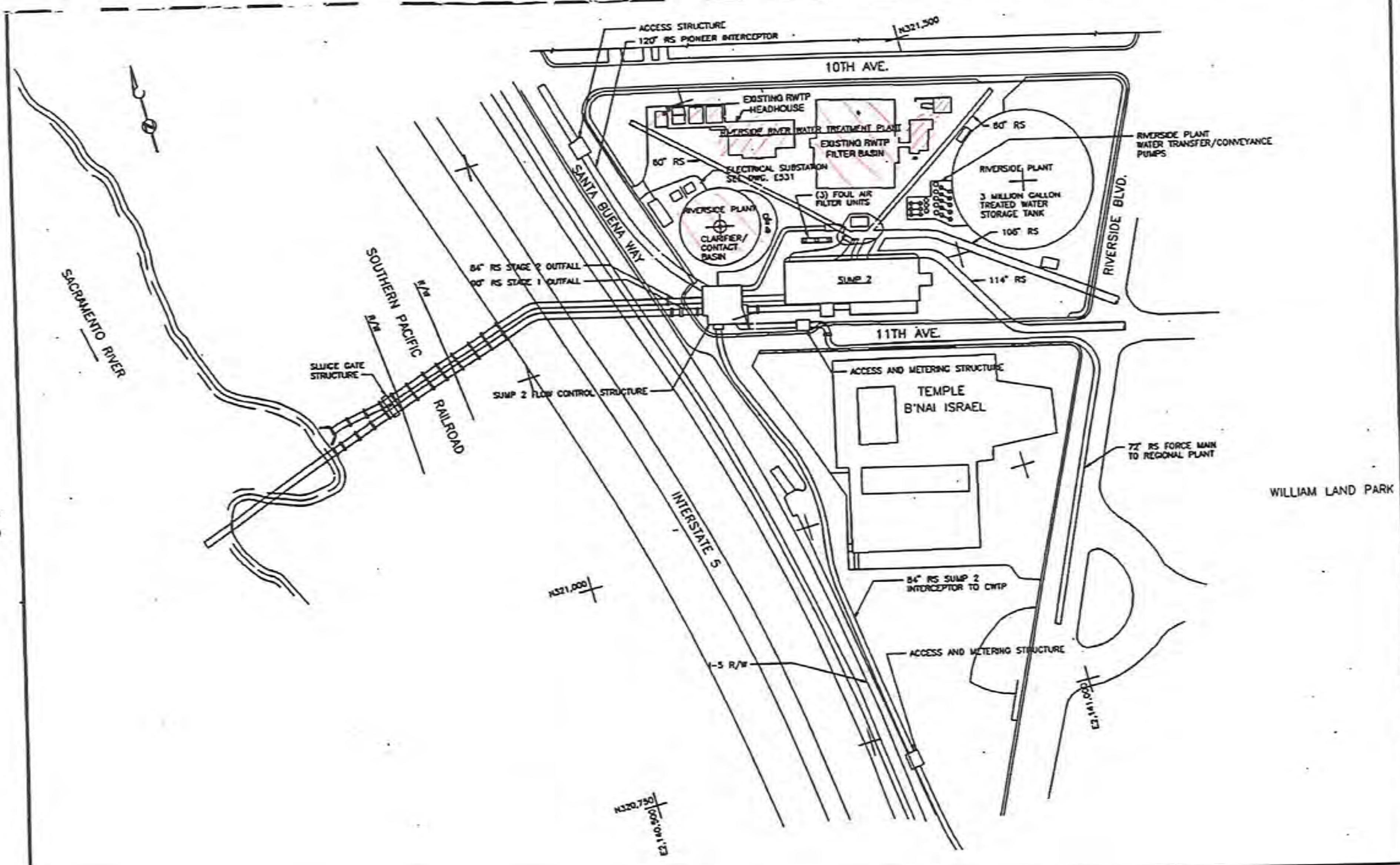
During the summer, dry weather flows are discharged directly from Pump Station 2 to the 72-inch diameter force main leading to the SRWTP. The average dry weather flow to Pump Station 2 from the CSS is approximately 28 MGD. The existing operation agreement between the City and SRCSD allows for a maximum discharge of 60 MGD to the SRWTP. Under special circumstances and with prior approval, Pump Station 2 is allowed to discharge flow in excess of 60 MGD for brief periods of time.

Pump Station 2 receives flow from four inlet sewers (two 60-inch, one 108-inch and one 114-inch diameter) and discharges flow via the Stage 1 pumps through a 90-inch pipe and Stage 2 pumps through an 84-inch pipe to the Flow Control Structure located adjacent to Pump Station 2. The Flow Control Structure was constructed in 1977 over the existing outfalls just west of Pump Station 2. Flows from the Flow Control Structure to the rest of the system depend on the season of the year. During the dry season (May to September), flow is about 28 MGD and is discharged via the 72-inch Pump Station 2 Force Main through the 72-inch City interceptor to the SRWTP. During the wet season (October to April), flows up to 60 MGD are directed to the SRWTP and flows up to 130 MGD are directed to the CWTP via the 84-inch Pump Station 2 interceptor. If the Stage 1 pumps cannot maintain the flows coming into Pump Station 2 (190 MGD going to the SRWTP and CWTP), then the Stage 2 pumps activate to direct flows to Pioneer Reservoir until it reaches its maximum of 350 MGD. If flows cannot be controlled at Pioneer Reservoir, overflows will occur to the Sacramento River via the 84-inch and 90-inch outfalls. This operation ensures the pumping capacity of Pump Station 2 is maximized to reduce the probability of wastewater backing up onto City streets.

Because of the depth of the Pump Station 2 wet well, the two 60-inch and the 108-inch influent sewers cannot be fully drained. This causes increased accumulation of solids, which affects the pump station's capacity and increases the generation of odors.

Pioneer Reservoir

Pioneer Reservoir is a 3.5-acre, pile-supported, covered, reinforced-concrete structure. It is located at 2150 Front Street adjacent to the Sacramento River off of Front and U Streets, northwest of the Interstate 5 and 80 freeway interchange. It was constructed in 1978 to provide 23 million gallons of temporary storage in order to reduce overflows to the Sacramento River to approximately five to six events per year. Combined wastewater is pumped to Pioneer Reservoir by both Pump Stations 2 and 1/1A. It has a peak hydraulic capacity of 350 MGD and a treatment capacity of 235 MGD.



SOURCE: City of Sacramento, Dept. of Utilities, Brown and Caldwell, August 1996.

N

No Scale

Figure 3-5

Sump 2 Existing Site Plan

96023

Pioneer Reservoir is divided into three basins configured in a serpentine pattern (refer to Figure 3-6). Combined wastewater enters and fills Basin 1 before overflowing a weir into Basin 2. Basin 2 fills before overflowing into Basin 3. Basin 3 fills before overflowing a final weir into an overflow channel and the 120-inch diameter outfall to the Sacramento River. Flow from Pump Station 2 enters the reservoir through an inlet structure at the south end of Basin 1 via the 120-inch Pioneer Interceptor. Flow from Pump Station 1/1A enters Basin 1 through the 60-inch Pump Station 1 Force Main equipped with a flapgate (to prevent flow reversal in the pipeline) at the northeast corner of the basin. Initial flows from Pump Station 1/1A actually flow through the reservoir to the Pioneer Interceptor where they are temporarily stored. During moderate storms, only the first and second basins are filled. The basins also have emergency overflow gates that can be manually set at a lower elevation than the flow weirs. These gates allow discharges to the Sacramento River when flow from the CSS to Pioneer Reservoir exceeds the reservoir's treatment capacity. These emergency gates are lowered only under extreme storm inflow conditions to alleviate flooding in the collection system.

The reservoir's auxiliary systems include automatic ventilation, odor control, and washdown systems. Normally, the reservoir is cleaned each time it is used. The reservoir uses river water to flush solids that have been deposited in the basins back through the Pioneer Interceptor for removal and processing at the SRWTP. Most of the solids are deposited in Basin 1.

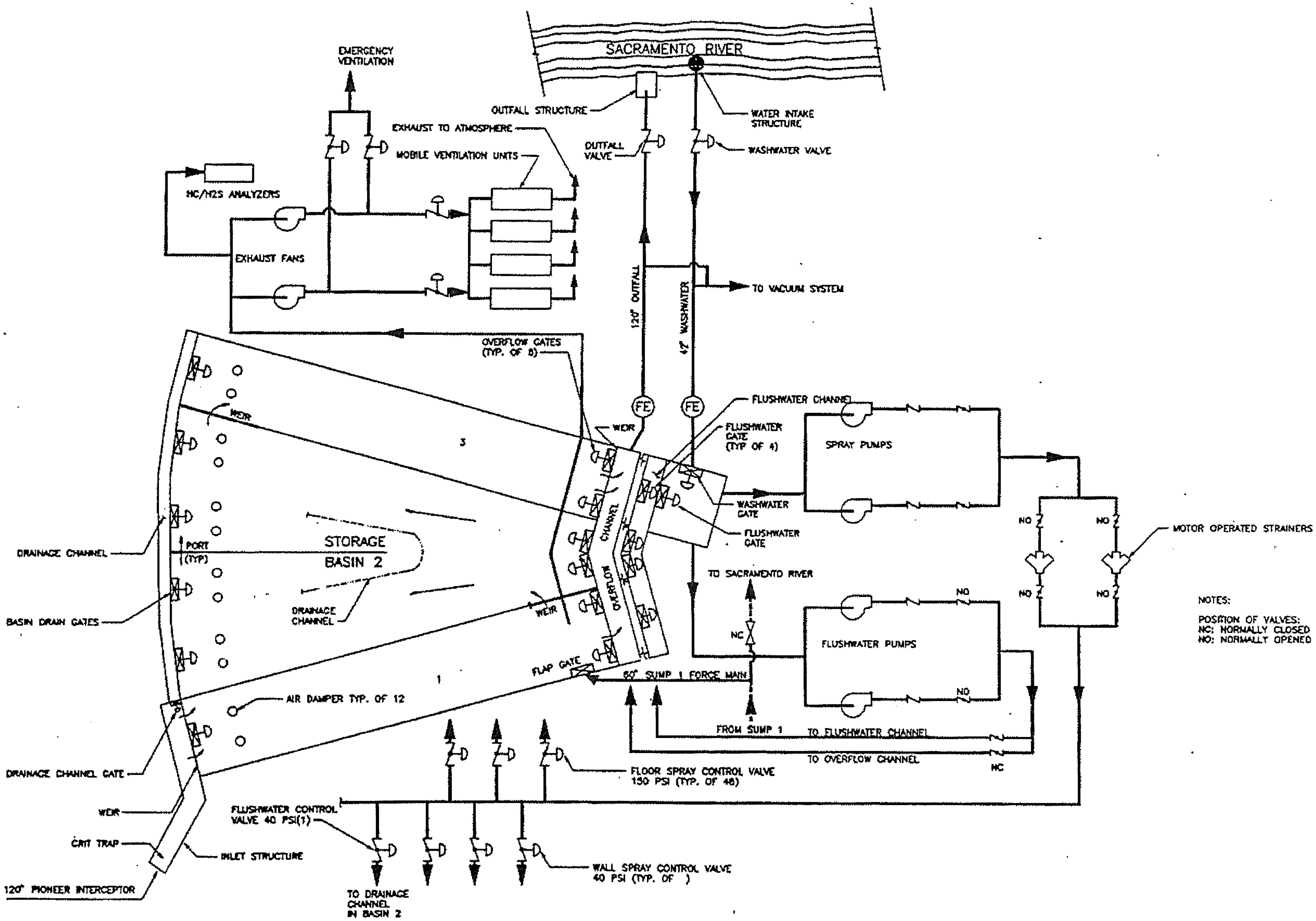
The 120-inch diameter, 8,800-foot long Pioneer Interceptor, which connects Pump Station 2 to the reservoir, is used to fill and drain the reservoir. The Interceptor provides an additional 5 million gallons of storage, which is released for treatment when capacity becomes available at the SRWTP and CWTP.

COMBINED SEWER OVERFLOWS, OUTFLOWS AND LOCAL FLOODING

The terrain in the CSS service area is generally flat. Many of the sewers are undersized and lack the gradient to facilitate wastewater flows. The CSS also has inadequate hydraulic capacity and is in need of rehabilitation. As a result, outflows through plumbing fixtures and low lying areas, and local flooding occur in low areas during storms when the capacity of the CSS is exceeded.

Combined Sewer Overflows

Overflows occur during periods of heavy rainfall when the total wastewater flows exceed the capacity of the CSS or treatment facilities. These overflows, called combined sewer overflows (CSOs), are discharges of untreated combined wastewater consisting primarily of storm water runoff (90 percent or more), with the remainder as sanitary sewage. CSOs occur from Pump Station 2, Pioneer Reservoir and less often, Sump 1/1A during storms when available treatment and storage capacity is exceeded. The water quality of these discharges will vary significantly depending upon the point of discharge and extent of treatment at Pioneer Reservoir (removal of floatables and grit). The untreated CSOs have low pollutant concentrations because the first flush of more polluted flow is treated at the SRWTP and CWTP. CSOs occur infrequently; since 1986, wet weather CSOs average approximately seven to eight per year at two locations in Sacramento. The Environmental Protection Agency's (EPA) National CSO Control Policy stipulates that at least 85 percent of the average annual CSS storm flow be captured and receive



SOURCE: City of Sacramento, Dept. of Utilities, Brown and Caldwell, August 1996.

No Scale

Figure 3-6

Pioneer Reservoir Schematic Diagram

96023

primary treatment with disinfection prior to discharge. During this same six-year period, approximately 92 percent of the CSS storm flow received primary treatment. The CSS does not experience any dry weather CSOs.

Outflows

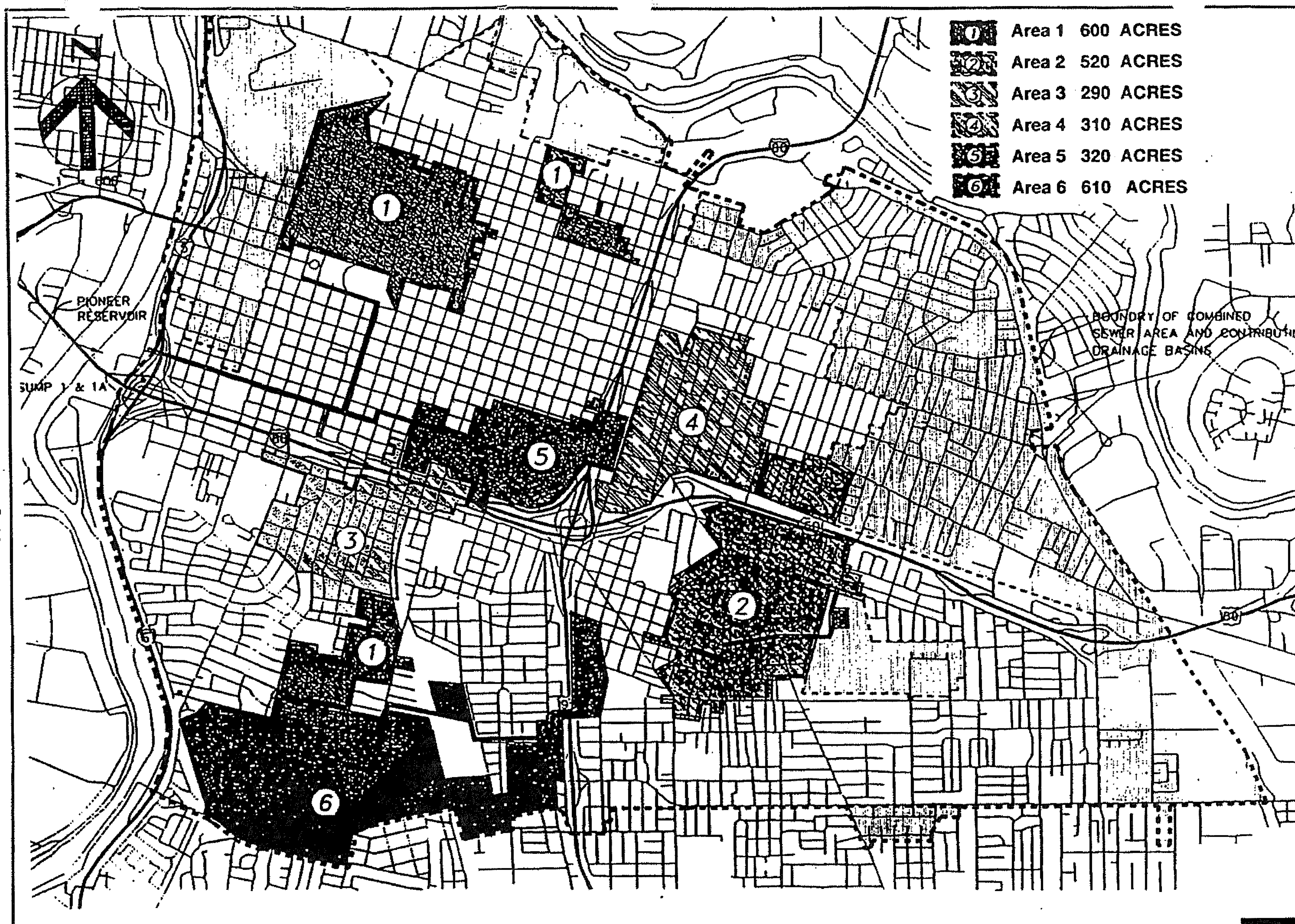
In addition to CSOs, the CSS experiences outflows. Outflows occur during moderate and large storms several times per year when the sewers become surcharged and combined wastewater flows back up through drop inlets and manholes onto the streets, and occasionally, into below-ground basements through floor drains and plumbing fixtures. Outflows have also been known to inundate lawns within and around the William Land Park area, which is a lowpoint in the CSS service area. Outflows occur at several locations but are not, however, considered to be widespread. In addition, local flooding occurs because runoff is greater than what the drop inlets and pipelines can accommodate. Outflows are considered different from local flooding because outflows consists of combined wastewater from the collection system, whereas local flooding is stormwater which cannot enter the collection system.

Local Flooding

Local flooding can occur during moderate and large storms when the CSS is full and stormwater runoff cannot enter the collection system since street drop inlets and sewers are full. Much of the flooding is due to undersized laterals and collectors, and is widespread within the CSS service area. The City has defined six "wet" areas within the CSS service area, which total approximately 2,650 acres. These six wet areas are where flooding is most severe and where most of the complaints originate. The six wet areas are shown on Figure 3-7.

REGIONAL WATER QUALITY CONTROL BOARD -- CEASE AND DESIST ORDER

The RWQCB considers outflows to be a potential threat to public health. Therefore, in 1990, the Central Valley RWQCB (CVRWQCB) issued a Cease and Desist Order (CDO) prohibiting outflows to City streets and unpermitted CSOs to the Sacramento River from the CSS. Under the City's National Pollutant Discharge Elimination System (NPDES) Permit, which provides waste discharge requirements, CSOs from outfalls at the two pump stations and Pioneer Reservoir are permitted as long as the City is conveying the maximum possible flow to the SRWTP and CWTP at the time and Pioneer Reservoir is full (discussed later in this document are the NPDES requirements of the CSS NPDES Permit). These outflows, and the potential threat to public health were the main focus of the CDO. A Public Health Risk Assessment (1994) was conducted over a two year period and consisted of a statistical analysis of work records of outdoor workers to see if there is a correlation between outflow events and increased absence from work. The analysis showed that absenteeism was not significantly greater among personnel working in the CSS service area than among personnel working outside the area. From the health assessment, the City concluded that outflows of combined wastewater do not pose a major health risk. Despite the results of the risk assessment, improvements were determined to still be necessary in order to reduce flooding, outflows and the CSOs. The City initially took steps to minimize outflows and CSOs by changing the way the CSS operates. Once it was determined that operational changes alone would not meet the two major requirements of the CDO, the City



No Scale SOURCE: City of Sacramento, Dept. of Utilities, 1996.

Figure 3-7: Six Wet Areas

96023

initiated a long range study of several structural alternatives to improve the CSS, that also considered the cost-to-benefit ratio.

Cost-To-Benefit Analysis

A cost-to-benefit analysis was used to determine the most cost-effective individual projects that would provide the most benefit in terms of reduced outflows and flooding for the least implementation cost. Benefits of each individual CSS improvement project were defined as the expected annual reduction (in 1,000s of cubic feet) in street flooding. The Sacramento Storm Water Management Model (SSWMM), a computerized hydrologic and hydraulic model developed specifically for the CSS, was used to determine the flood reductions produced by the various improvements. The SSWMM revealed that reductions in outflows are proportional to reductions in street flooding.

Mitigation Plan

The City has developed a policy that requires any significant increase in storm water and waste water inflows over the present level to be mitigated by the developer. If a proposed development project is determined to have a significant impact on the CSS, the project proponent is required to develop a mitigation plan which is acceptable to the City. The mitigation plan may include on-site storage with retention, sewer main up-sizing, diversion of flows, rerouting or replacement of pipes, connection to separated areas, and/or other mitigation measures depending on the site. If full mitigation of system-wide impacts cannot be accomplished because of site constraints or other factors, the development must enter into a Mitigation Agreement. The agreement contains the following requirements (City of Sacramento Department of Public Works, 1994):

- implementation of Mitigation Monitoring Plan (if any);
- payment of any and all fees based on a development's fair share of cost to implement the Combined System Improvement Projects;
- waiver of rights to protest future fees, assessment districts, Mello-Roos districts, etc; and
- consent to all conditions by any lienholder.

DEVELOPMENT OF THE CSS REHABILITATION AND IMPROVEMENT PLAN

Studies concluded that the most feasible alternative consisted of increasing pumping station capacities at existing Pump Stations 1/1A and 2, converting Pioneer Reservoir to a primary treatment facility (with disinfection), installing an upsized sewer system in the downtown area, and constructing several local or regional underground storage facilities throughout the CSS service area. As a result, the City developed the CSS Rehabilitation and Improvement Plan, which includes short-term and long-term improvements (described in detail in Chapter 4). The short-term improvements, or Phase 1 of the Plan, include the capacity increase projects for Pump

Stations 1/1A and 2 and conversion of Pioneer Reservoir to a primary treatment facility. The City proposes to defer for further study the large-scale improvements, or Phase 2, that include Inflow Control and Local Storage (ICALS), subregional and regional storage facilities, upsized sewers, and sewer replacement until the actual amount of flood reduction and outflows achieved by increasing the capacities of the two existing pump stations can be evaluated. The evaluation of the effectiveness of the pump station improvements will consider public safety, reductions in property damage and public inconvenience due to flooding. Based on the conclusions of the evaluation, the Phase 2 components will be further defined and the sequencing of improvements can be determined. All the proposed improvements of Phases 1 and 2 would be designed to ultimately meet the City's goals of providing 10-year flood protection, as well as complying with federal and State requirements (refer to the discussion under "Objectives" in Chapter 4). Completion of both phases could extend over a period of 20 years, with Phase 1 implemented over the first ten years. The CSS Plan also includes rehabilitation of the entire CSS pipeline system which would occur over a 30+ year period. In addition, the CSS Plan would comply with EPA's National CSO Control Policy in terms of the required nine implementation measures and CSO discharge limits discussed later in this chapter.

As a result of preparing the CSS Rehabilitation and Improvement Plan, the CDO was rescinded (March 22, 1996) by the RWQCB and the City was issued a new NPDES permit, which includes a time schedule for implementing the initial phase of the improvement and rehabilitation program for the CSS. This permit and its requirements are described below.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT SYSTEM AND REQUIREMENTS

The NPDES permit system was established in the Clean Water Act (CWA) to regulate municipal and industrial discharges to surface waters of the U.S. 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.

Waste Discharge Requirements

The quality of effluent that can be discharged from the CWTP is established by the CVRWQCB through NPDES permit Waste Discharge Requirements (WDRs). WDRs are updated at least every five years. A new permit must be issued in the event of a major change or expansion of the facility. The CVRWQCB can issue a CDO, which it did with the City due to the CSOs, when a violation occurs of the discharge standards contained in the WDRs. However, in March 1992 the CVRWQCB rescinded the CDO and renewed the City's NPDES permit (No. CA007911) in Order No. 96-090. The City must comply with the Order which establishes the City's new set of WDRs. These WDRs are summarized below (refer to Appendix 15-4 for the entire NPDES permit):

- Prohibit discharge to the Sacramento River, surface waters or surface water drainages at discharge points from the CWTP, Pump Station 2 Bypass and Pioneer Reservoir unless otherwise approved under the provisions of the permit;

The CSS conveys combined flows to Pump Station 2, where up to 60 MGD is pumped to the SRWTP for secondary treatment prior to discharge to the Sacramento River. This discharge point is designated as point 001 and is governed by NPDES permit (No. CA0077682). When flow to Pump Station 2 exceeds 60 MGD, the City operates its CWTP, where an additional 130 MGD of combined wastewater receives primary treatment with disinfection and then discharges to the Sacramento River at points 002 and 003. Anything over 130 MGD is diverted to Pioneer Reservoir for storage until treatment capacity becomes available. Flows to Pump Station 2 greater than 190 MGD are diverted to the 28 million gallon Pioneer Reservoir. The stored combined wastewater is diverted back to the SRWTP or the CWTP for treatment as treatment capacity allows, or is discharged to the Sacramento River if storm flows exceed total treatment and storage capacity. The discharge from Pioneer Reservoir occurs at point 006 and receives partial solids removal without disinfection. During extremely high flow conditions, discharges of untreated combined wastewater may occur at Pump Station 2 bypass points 004 and 005 and at Pump Station 1 bypass point 007. Discharges 002 through 007 are governed by the Discharge Requirements of the NPDES Permit summarized here.

- Limit effluent discharge from the CWTP and Pioneer Reservoir in excess of specified limits, Ph and temperature, and the discharger shall capture for treatment at least 85 percent of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis;

- Dispose of sludge and other solids removed in a manner consistent with Chapter 15, Division 3, Title 23 of the California Code of Regulations, and report any proposed change in sludge use or disposal practice to the CVRWQCB and EPA at least 90 days in advance of the change; and

- Comply with water quality objectives contained in the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin related to Receiving Water Limitations. Discharges shall not cause objectives to be exceeded. An objective can be exceeded if for example, concentrations of dissolved oxygen fall below 5.0 mg/l, oils, greases, waxes or other materials are visible on the water surface or stream bottom, or the normal ambient temperature increases more the 5 degrees (refer to Appendix 15-4 for complete listing).

The City is also required to meet other specific provisions including a schedule for implementing the CSS Plan, maintaining an approved Operations Plan for the CSS, and completion of an evaluation of compliance with the EPA's Nine Minimum CSO Controls. A discussion of the City's Operations Plan for the CSS and the City's compliance with EPA's Nine Minimum Controls is found later in this chapter. Before the NPDES permit expires (March 2001), the City must file a Report of Waste Discharge in accordance with Title 23 of the CCR for renewal of waste discharge requirements if the City wishes to continue permitted discharges.

Trace Element Testing

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that could cause or contribute to exceeding EPA water quality standards. From 1991 to 1995, the City conducted sampling for trace element levels for antimony, arsenic, cadmium, chromium, copper, cyanide, lead, mercury, nickel, selenium, silver, thallium, and zinc. The sampling revealed that with the exception of mercury, no significant exceedances were found of established EPA water quality criteria for trace elements. However, the mercury sampling technique the City used in 1991 may not have been able to detect to a level necessary to make an absolute determination. As such, in addition to the requirements summarized above, the NPDES Permit required the City to conduct "clean technique" sampling for mercury.

As stated in correspondence from the City Utilities Department to the CVRWQCB dated May 23, 1996, during the 1994-1995 wet season clean techniques (including lower detection limits) were used on eleven discharge samples. These results indicate lower mercury levels using clean techniques. However, the CWTP still exceeds the EPA 30-day criteria for the dissolved and total fractions, and Pioneer Reservoir and Pump Station 2 for the total fraction only. An assessment was undertaken to determine if the mercury levels in the CSS discharges have a "reasonable potential" to cause or contribute to an exceedance of the water quality criteria in the Sacramento River. The City concluded that the mercury loadings from CSS discharges do not have a reasonable potential to cause or contribute to an exceedance of the water quality criteria in the Sacramento River. This determination is currently under review by the CVRWQCB.

EPA'S NINE MINIMUM SEWER OVERFLOW CONTROLS

In April 1994, the U.S. EPA issued its Combined Sewer Overflow Policy for controlling discharges to the nations waters from combined sewer systems (40 CFR Part 122). One of the cornerstones of the CSO Policy is the requirement for Nine Minimum Controls (NMCs), which apply to every CSS in the nation. The NMCs are defined as the minimum technology-based actions or measures designed to reduce CSOs and their effects on receiving water quality without extensive engineering studies or major construction. The NMCs are summarized in Table 3-1.

As part of the NPDES requirements the City is required to complete an evaluation of compliance with the NMCs for CSOs. The City's NMCs Compliance Report was submitted to the CVRWQCB for its review and approval on August 9, 1996 and is provided in Appendix 15-5. The City concluded that there are no dry-weather overflows from the CSS, and approximately 92 percent of the storm-related CSS flows receive primary or secondary treatment. However, the average annual wet-weather CSOs exceed the four to six events considered acceptable under the presumptive approach in the EDA CSO Policy. The CSS Plan itself is designed to significantly reduce street flooding and outflows. The NMCs will be continued as part of the CSS Plan. It should also be noted that no CSS improvement and rehabilitation project will increase CSOs or the pollutant loads reaching the Sacramento River.[4] The CVRWQCB has not submitted its review and/or approval of the NMC Compliance Report.

TABLE 3-1

SUMMARY OF THE NINE MINIMUM CONTROLS

Minimum Control	Examples of Control Measures
Proper Operation and Maintenance	• Maintain/repair regulators • Maintain/repair tidegates • Remove sediment/debris • Repair pump stations • Develop inspection program • Inspect collection system
Maximum Use of Collection System for Storage	• Maintain/repair tidegates • Adjust regulators • Remove small system bottlenecks • Prevent surface runoff • Remove flow obstructions • Upgrade/adjust pumping operations
Review and Modify Pretreatment Requirements	Volume Control • Diversion storage • Flow restrictions • Reduced runoff • Curbs/dikes Pollutant Control • Process modifications • Storm water treatment • Improved housekeeping • BMP plan
Maximum Flow to the POTW for Treatment	• Analyze flows • Analyze unit processes • Analyze headloss • Evaluate design capacity • Modify internal piping • Use abandoned facilities • Analyze sewer system
Eliminate Dry Weather Overflows	• Perform routine inspections • Remove illicit connections • Adjust/repair regulators • Repair tidegates • Clean/repair CSS • Eliminate bottlenecks

TABLE 3-1

SUMMARY OF THE NINE MINIMUM CONTROLS

Minimum Control	Examples of Control Measures
Control of Solid and Floatable Materials in CSOs	• Screening -- Baffles, trash racks, screens (static and mechanical), netting, catch basin modifications • Skimming -- booms, skimmer boats, flow balancing • Source controls -- street cleaning, anti-litter, public education, solid waste collection, recycling
Pollution Prevention	• Source controls (see above) • Water conservation
Public Notification	• Posting (at outfalls, use areas, public places) • TV/newspaper notification • Direct mail notification
Monitoring	• Identify all CSO outfalls • Record total number of CSO events and frequency and duration of CSOs for a representative number of events • Summarize locations and designated uses of receiving waters • Summarize water quality data for receiving waters • Summarize CSO impacts/incidents

SOURCE: U.S. EPA, *Combined Sewer Overflows Guidance For Long-Term Control Plan*, August 1995.

OPERATIONS PLAN

In addition to the NMC Compliance Report, the NPDES permit required that the City maintain an approved Operations Plan for the CSS. Under an Interim Operations Plan in effect from 1990 through 1995, the City initially took steps to minimize outflows and CSOs by changing the way the CSS operates. Under the Interim Plan, Pump Station 1/1A discharged to Pioneer Reservoir, while Pump Station 2 discharged first to the SRWTP, then to the CWTP, and finally to the Sacramento River without using Pioneer Reservoir. This Interim Plan significantly reduced the amount of outflows and street flooding. Since Pump Station 1/1A operates only during very large storms, Pioneer Reservoir was rarely used for storage during this period.

Based on the findings of the studies and the development of the CSS Plan, another Operations Plan, which the City submitted to the CVRWQCB on July 31, 1996 for review and approval, was developed. This Operations Plan is intended to demonstrate that the City has addressed the requirements of the NMCs (the Operations Plan can be found in Appendix 15-6). In sum, the goals of the Operation Plan are as follows:

- Comply with the State's NPDES Permit;
- Maximize the utilization of storage and treatment facilities;
- Minimize or remove public health threats from outflows of combined wastewater into the City streets and prevent property damage; and
- Minimize or prevent CSOs to the Sacramento River.

Since Pump Station 1/1A and 2 and Pioneer Reservoir are not in the final design stages, the Operations Plan did not incorporate detailed information regarding these CSS components. Once the designs have been finalized the City must prepare another Operations Plan.

ENDNOTES

1. Sacramento Regional County Sanitation District, Sacramento Regional Wastewater Management Program Outfall Project Report and Draft EIR, January 1975, p. 1-1.

2. County of Sacramento, Sacramento Regional Wastewater Treatment Plant Master Plan, Draft EIR, April 1996, p. 4-1.

3. Sacramento Regional Wastewater Management Program Master Interagency Agreement (93-079), April 1993, p. 19.

4. City of Sacramento, Department of Utilities, NPDES Nine Minimum Controls Compliance Report letter to the CVRWQCB, dated August 9, 1996.

4. PROJECT DESCRIPTION

4. PROJECT DESCRIPTION

INTRODUCTION

This chapter is prepared in compliance with Section 15124 of the CEQA Guidelines. The project description chapter provides a location map, the objectives of the project proponent, and a general description of the technical, economical, and environmental characteristics of the project.

PROJECT LOCATION

The Combined Sewer System (CSS) service area encompasses approximately 11,300 acres (see Figure 4-1). Approximately 7,500 acres of the service area includes the Downtown, East Sacramento, and Land Park communities, which contribute both sanitary sewage and storm drainage flows to the CSS. A second area of approximately 3,700 acres encompasses the River Park, California State University, and far eastern Sacramento areas and contributes only sanitary sewage flows to the CSS. Lastly, a third area of approximately 100 acres located in southern Sacramento contributes only storm drainage flows.

PROJECT OBJECTIVES

The City of Sacramento Department of Utilities is the project proponent for the CSS Improvement and Rehabilitation Plan. The Department of Utilities has identified the following project objectives of the CSS Improvement and Rehabilitation Plan:

1. Reduce or eliminate outflows that can be considered a possible threat to public health;

2. Reduce CSS overflows to the Sacramento River;

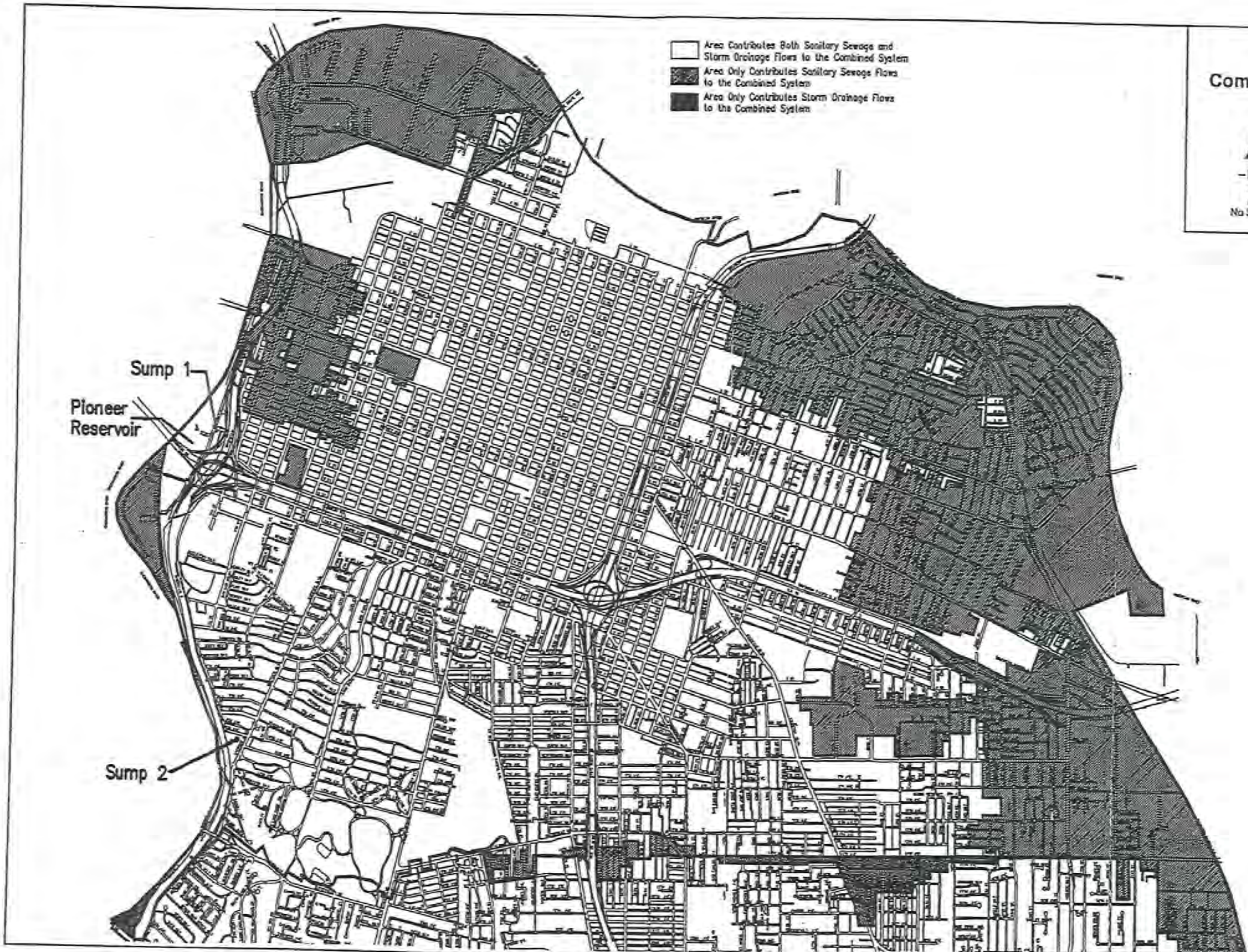
3. Comply with the requirements of the U.S. Environmental Protection Agency's (EPA) "Combined Sewer Overflow Control Policy", "Nine Minimum Controls", the National Pollutant Discharge Elimination System (NPDES) Permit, and the Clean Water Act.
4. Rehabilitate and improve all critical combined sewer system pumping stations, treatment facilities, and pipelines.

5. Reduce neighborhood street flooding problems where it is economically feasible to do so. The City's ultimate goals for storm drainage systems are to minimize street flooding during a storm having a 10 percent probability of occurring every year (commonly referred to as the 10-year storm) and to prevent property damage to structures during a storm having a 1 percent probability of occurring every year (100-year storm). The City has set the following interim objectives to be met as progress is made toward the final project objectives:

    5a. Obtain protection from a 5-year storm in the six areas of worst flooding.

    5b. Obtain protection from a 5-year storm throughout the CSS service area.

Figu
Combined S
Service



SOURCE: City of Sacramento Dept. of Utilities, Draft Revision, August 10, 1995.

95023

5c. Obtain protection from a 10-year storm in the six areas of worst flooding.

5d. Obtain protection from a 10-year storm throughout the CSS service area.

Sacramento General Plan Goals and Policies

In addition to the specified project objectives, the CSS Plan is intended to implement several goals and policies of the Sacramento General Plan that address issues such as the overall quality of life and maintenance of the sewer and drainage system. These are presented below.

Sacramento General Plan Update

The Sacramento General Plan Update (SGPU) was adopted on January 19, 1988, concluding a 3-year planning effort. The SGPU replaced the heavily amended 1974 General Plan for Sacramento and brought many pressing local issues into a contemporary framework for action. The SGPU is a 20-year policy guide for physical, economic and environmental growth and renewal of the City.

A total of nine sections are contained within the SGPU. Section 7, the Public Facilities and Services Element, addresses municipal services and facilities. Infrastructure such as water, sanitary sewer, and drainage is discussed; as well as schools, fire stations, libraries and parks.

Goals and Policies that apply to the project site include those overall goals within the element and specific goals for sanitary sewers and drainage.

Public Facilities and Services Element

The overall goals from this section which apply to the project site are listed below (SGPU, 7-1,2).

Goal A

Provide and maintain a high quality of public facilities and services to all areas of the City.

The City of Sacramento is fortunate to have a full range of municipal facilities and services. The maintenance of these services is an essential factor to consider in existing and newly developed areas. The City should continue to provide adequate public facilities and services in newly developing areas and direct funding for improvement in existing areas to ensure the health, safety and welfare of residents.

Goal E

Design public facilities in such a manner as to ensure safety and attractiveness.

Utilities and related infrastructure should be designed and constructed in a manner to prevent possible visual blight and ensure safety to sacramento residents. The City should continue to support and encourage the construction of utility lines underground and provide safe, attractive infrastructure. Existing and newly constructed infrastructure should be maintained.

Specific sanitary sewer and drainage goals and policies that apply to the proposed project include the following (SGPU, 7-8,9):

Utilities - Sanitary Sewers

Goal A

Provide adequate sewer service for all urbanized or developing neighborhoods

Utilities - Drainage

Goal A

Provide adequate drainage facilities and services to accommodate desired growth level.

Policy 1.

Ensure that all drainage facilities are adequately sized and constructed to accommodate the projected increase in stormwater runoff from urbanization.

Sacramento General Plan EIR

The SGPU EIR identified that the sewer lines in the older developed portion of the City are slowly deteriorating due to old age. These deficiencies may pose constraints to future infill and development within these areas and therefore constituted a significant and adverse impact. To mitigate this significant adverse impact, the SGPU EIR identified specific mitigation measures to reduce the level of significance to a less than significant level. The mitigation measure recommended in the EIR includes:

Utilities - Sanitary Sewers

Upgrading existing facilities and the extension of sewer lines to existing developed areas where sewer service is currently lacking.[1]

In addition to the impacts to the City's existing sewer system, the SGPU EIR identified that the implementation of the SGPU could exacerbate existing localized (neighborhood) drainage deficiencies. This could result in making it more difficult for other areas to drain which could result in more local flooding and ponding within these areas. The SGPU EIR identified this potential increase in localized flood hazards as a significant and adverse impact. The mitigation measure identified in the SGPU EIR includes:

Utilities - Drainage

Reconstructing local storm drains and pumping stations to increase the level of protection from flooding.[2]

PROJECT ELEMENTS

Pursuant to the RWQCB Cease and Desist Order (CDO) No. 96-090, the City must maintain an approved Operations Plan for the CSS which is designed to maximize the removal of pollutants during and after each storm event using all available facilities within the system, with a goal of achieving the highest treatment possible and minimizing combined sewer overflows (CSOs). The City prepared the CSS Improvement and Rehabilitation Plan, dated July 1995, which fulfills the intent of the Central Valley Regional Water Quality Control Board (CVRWQCB) CDO (refer to Chapter 3, Overview of the Existing Combined Sewer System for more information on the CDO). This Plan also serves as the Long Term Control Plan called for in EPA's National CSO Control Policy. The Plan complies with the EPA Policy, which requires implementation of nine minimum control measures. Using the demonstration approach found in the EPA Policy, in which the impact of CSOs on river quality is measured and monitored, the City intends to show that an improved CSS meets water quality standards, protects beneficial uses of the Sacramento River, and that pollution levels have been reduced to maximum levels reasonably attainable (refer to Chapter 3, Overview of the Existing Combined Sewer System for more information on the EPA's CSO Policy and Nine Minimum Controls and the City's NPDES Operations Plan).

The CSS Improvement and Rehabilitation Plan is divided into two phases. Phase 1 includes specific modifications and improvements to existing Pump Stations 1/1A and 2, Pioneer Reservoir and rehabilitation and replacement of the underground piping system. Improvement items are defined as those which will increase the pumping capacity to reduce flooding within the CSS. All improvements will be designed to ultimately provide 10-year outflow and flood protection when the entire program is completed. Rehabilitation items are defined as those which will improve the reliability, operations and maintenance of the system. Rehabilitation will generally include replacing worn or obsolete elements of the system, repair corroded equipment or structures, and providing additional equipment and controls to improve operations.

After completion of Phase 1, both pump stations will pump either to the City's Combined Wastewater Treatment Plant (CWTP) and Sacramento County Regional Wastewater Treatment Plant (SRWTP), or to Pioneer Reservoir to the maximum extent practicable prior to any CSOs occurring. In addition, the City's NPDES Permit No. CA0079111 requires that the CWTP will always be operating when Pioneer Reservoir is discharging to the river. This plan will ensure that the City maximizes flow to the public-owned treatment works (POTW), which is one of the nine minimum controls in EPA's National CSO Policy. Phase 2, while more programmatic in its definition, would involve designing and constructing a combination of facilities including underground storage structures, upsized sewers and sewer replacement, if these additional controls are necessary and cost-effective. Rehabilitation and replacement of the CSS piping system would continue during Phase 2. These two phases are described in detail below.

Phase 1 Description

The primary objective of Phase 1 is to implement project-specific improvements and rehabilitation to the CSS that will assure operating reliability and reduce street flooding in the CSS service area. These improvements would be implemented over the first ten years of the Plan and are included in the City's NPDES permit. This initial phase involves the two existing pump stations since they are responsible for pumping all CSS wastewater for treatment and disposal. Based upon preliminary analysis, the increased capacity at the pump stations will reduce flooding and outflows by 611,000 cubic feet, or 10 percent during a 10-year storm. Without the operating reliability and increased capacity of the pump stations, the system could fail and result in flooding and CSOs. However, increasing pump station capacities alone cannot address these two issues. It is also necessary to modify Pioneer Reservoir, which will decrease the number and volume of CSOs to the Sacramento River. To comply with EPA's National CSO Policy, the City cannot increase the average annual number of events. Also, the City does not want to increase the mass pollutant loads currently released from the CSS to the Sacramento River. Therefore, additional flows resulting from increased pumping capacity must either be stored or treated elsewhere. Pioneer Reservoir is an existing large CSS storage facility that is already connected to the two pump stations; therefore, the City is considering using the reservoir as a primary treatment facility in addition to providing storage. Pioneer Reservoir provides significant solids removal in its present configuration. The City has initiated an Equivalency Demonstration Program to demonstrate that Pioneer Reservoir can provide solids removals comparable to the CWTP. If this can be shown Pioneer Reservoir would be considered a primary treatment facility once disinfection is provided to protect beneficial uses of the Sacramento River. If the Equivalency Demonstration Program fails to show that Pioneer Reservoir removes solids as well as the CWTP, the City is prepared to improve solids removal performance at Pioneer, subject to the limits imposed by the constraints of the existing structure.[3]

In addition, since the capacity of the pumps would be increased, the underground piping system must also be rehabilitated, with selected lines replaced. It should be noted that although the capacities at the pump stations will be increased and Pioneer Reservoir converted, the CSS Plan would not create additional capacity within the overall system (refer to Chapter 8, Growth Inducing Impacts for further discussion). Rather, the improvements to these facilities would result in a more efficient use of the CSS.

A detailed description of the components of Phase 1 follows.

1. Pump Station 1/1A

The capacity of Pump Station 1/1A will be increased from 130 MGD to approximately 200 MGD. A new parallel 60-inch force main (approximate length is 800 feet) from Pump Station 1 to Pioneer Reservoir (with a similar connection to the existing connection including a flap gate) is required for both Pump Station 1 and 1A to operate simultaneously. With each pump station having its own force main, the individual capacity of each pump station is approximately 100 MGD and the combined capacity would be 200 MGD.

A listing of specific rehabilitation items and improvements for Pump Station 1/1A is included in Table 4-1. There are also a number of minor rehabilitation items not listed that will be included in the rehabilitation of Pump Station 1/1A. These additional items will be identified and addressed during the final design of Pump Station 1A, and may include painting the exterior of all existing equipment, removing obsolete control

TABLE 4-1
PROPOSED PUMP STATION 1/1A REHABILITATION ITEMS AND IMPROVEMENTS

No.	Pump Station No.	Item*	Description
1	1A	Adjustable frequency drives (R)	To allow variable speed operation of pumps so the capacity of the pumps can be adjusted to match the flow into the wet well.
2	1A	Electrical/control (R)	Replace obsolete switchgear and miscellaneous instrumentation equipment as required.
3	1A	Miscellaneous Architectural	New enclosures for electrical/control equipment.
4	1A	Flow meter (R)	Provide accurate flow data between Pump Station 1A and Pioneer Reservoir for the 60-inch force main to Pioneer Reservoir in order to satisfy CSO compliance requirements.
5	1A	Wet well (R)	Modify wet well for new access in order to perform maintenance and inspection without having to shut down the pump station.
6	1A	Suction inlets (R)	Install flared suction elbows or fabricated hoods on all three pump inlets to replace temporary hoods.
7	1/1A	Emergency standby power (R)	Install a 1,000 KW Diesel Generator and 1000-gallon fuel tank to provide complete backup power for Pump Station 1/1A.
8	1	Building foundation (R)	Reinforce pump station building foundation to compensate for deteriorating building piling system.
9	1	Engine modifications (R)	Provide electric heaters and thermostat controls which would allow the engines to be pre-heated for instant startup.
10	1	Check valves and isolation gate valves (R)	Install check valves and isolation gate valves to prevent flow reversal and engine damage and flooding.
11	1	Wet well (I)	Replace wet well to improve hydraulic capacity. Current arrangement contributes to turbulence and vortexing which significantly decreases Pump Station 1 capacity. The new wet well will allow Pump Station 1 to pump to 100 MGD and a total combined capacity of 150 MGD.
12	1	Electrical/control (R)	Replace existing individual motor starters and distribution panel with a new motor control center.
13	1	Force main (I)	Construct new parallel force main from Pump Station 1 to Pioneer Reservoir so that both Pump Station 1 and 1A can operate simultaneously to achieve total combined capacity of 200 MGD.

NOTES:* (R) Rehabilitation Items
(I) Improvement Items

SOURCES: Combined Sewer System Project Overview, City of Sacramento Department of Utilities, March 1996. Preliminary Design Report - Sump 1/1A Rehabilitation and Improvements, City of Sacramento Department of Utilities, April 1996, updated August 1996.

equipment, electrical equipment and piping, installing gas detectors and improving exterior lighting around screen area.

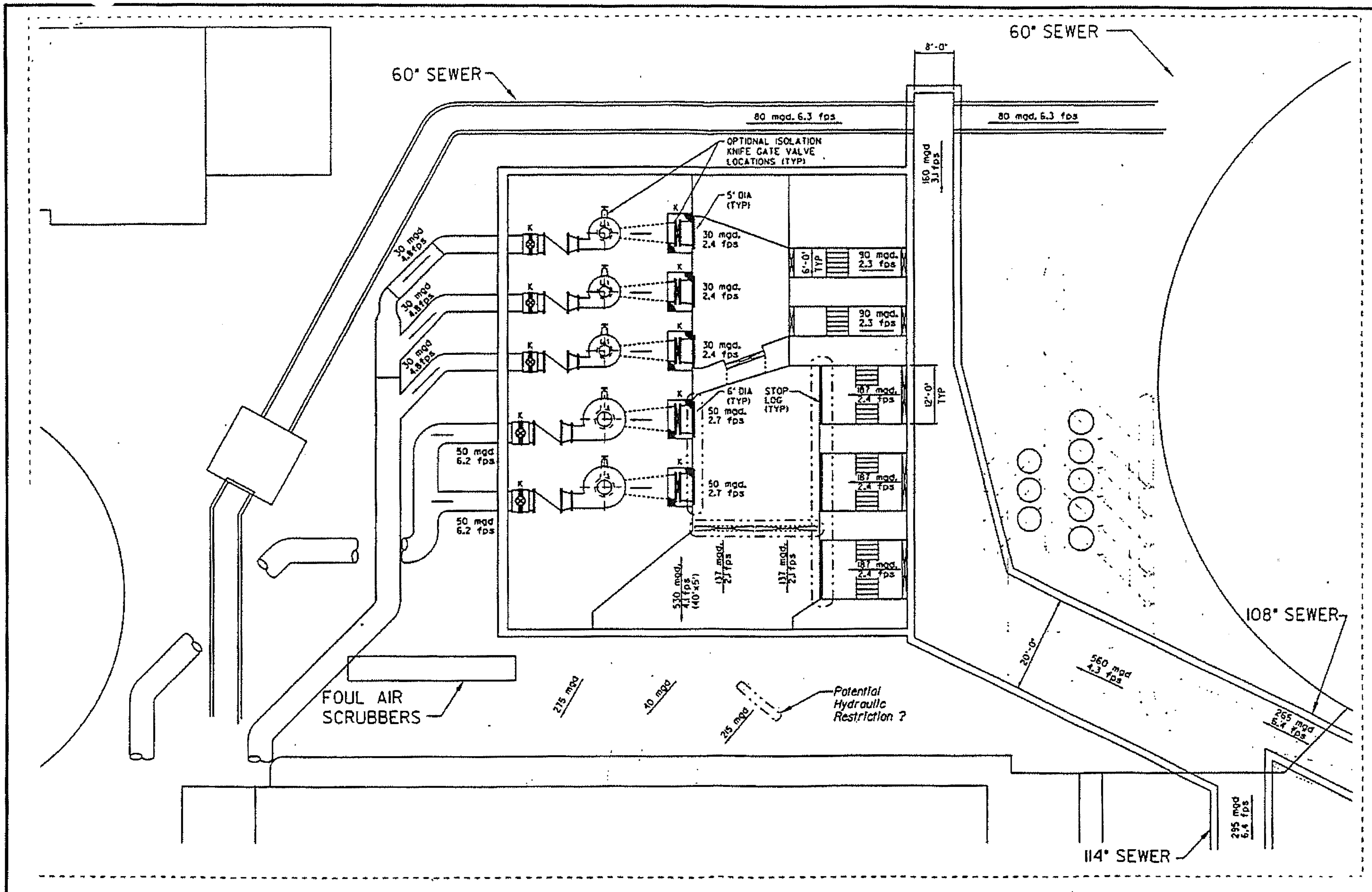
2. Pump Station 2

Since the publication of the Notice of Preparation and Initial Study (August 6, 1996), the CSS Plan has been further refined to include a change to the proposed Pump Station 2. Originally, the capacity of the new pump station was proposed at 160 MGD. The City determined that an additional 30 MGD is necessary to meet the project objectives.

The capacity of Pump Station 2 will be increased from 530 MGD to 720 MGD by increasing the reliability and ease of operation of the existing Stage 1 and 2 pumps and constructing a new adjoining 190 MGD pump station (refer to Figure 4-2).

The proposed 190 MGD pump station will pump all dry weather flows and some wet weather flows from the CSS. A portion of the pumping station capacity will be dedicated to pump the maximum allotted capacity of 60 MGD to the SRWTP. The City will coordinate with SRWTP staff to ensure the operation of this pump station would not affect SRWTP operations. Three pumps will be sized such that two of the pumping units can pump the total of 60 MGD to the SRWTP. The third identical pump will be provided for standby and backup. Each of the pumps would be able to pump current average dry weather flows. During normal dry weather, all flow from the four influent sewers would be diverted to the proposed pumping station. The remaining two pumps, or 130 MGD, would be used during storm events to pump the first increment of wet weather flows directly to the CWTP and bypass the flow control structure. This would simplify operations of Pump Station 2 and ensure no permit violations that could occur if flow to the CWTP reduced due to routing flows to Pioneer Reservoir through the flow control structure. The configuration would allow improved regulation of flows at the pump station, as well as improved dosing of chlorine at the CWTP. The existing pump station capacity of 530 MGD will continue to pump to the CWTP or to Pioneer Reservoir. If the capacity of the CWTP and Pioneer Reservoir is exceeded, flows would then be discharged to the Sacramento River as CSOs.

The 190 MGD pumping station would be located at the Pump Station 2/Riverside Water Treatment Plant (RWTP) site. This would necessitate demolition of portions of the RWTP to facilitate installation of the 190 MGD pumping station and the emergency standby generators. The design includes a dry well pumping station that uses close-coupled centrifugal pumps installed in a dry well. The RWTP filter basin would be demolished in order to accommodate the new pumping station. The filter basin is located at the northern edge of the RWTP along 10th Avenue (refer to Figure 3-5 in Chapter 3, Overview of Existing Combined Sewer System). The pumping station structure would be one-story. In addition to the new pumping station, diesel powered emergency standby generators would be added to the facility. The emergency standby generators would provide full electrical power redundancy, in the event that the existing electrical power service provided by SMUD's South Sacramento Substation were shut down. In order to accommodate the generators, the existing RWTP clarifier/contact basin as shown on



SOURCE: City of Sacramento, Dept. of Utilities, Brown and Caldwell, August 1996.

No Scale

Figure 4-2

Sump 2 Proposed Pump Station Layout

96023

Figure 3-~~4~~5 would be demolished. The only other modification to the RWTP site would be the remodeling of the existing headhouse, located along 10th Avenue, which would accommodate the proposed lockers/restroom facility.

A listing of specific rehabilitation items for Pump Station 2 is included in Table 4-2. It should be noted that the existing odor control problem at Pump Station 2 would be addressed with implementation of these improvements. In particular, the new wet well would flush out solids more effectively and sodium hypochlorite, or some other form of odor control, is proposed to eventually replace the existing chlorine gas system. Refer to the Initial Study found in Appendix 15-1 for more information on odor control.

3. <u>Pioneer Reservoir</u>

Pioneer Reservoir would be converted from an existing wastewater reservoir to a treatment facility. It has been assumed that the reservoir would be retained in its present serpentine flow configuration. At this configuration the peak hydraulic capacity would be 350 MGD; at this flow rate detention is approximately 15 hours.

Conversion to a primary treatment facility requires the addition of disinfection and dechlorination facilities to reduce the level of coliform bacteria and associated pathogenic organisms prior to discharge from the reservoir to the Sacramento River. Disinfection will be required to achieve the fecal coliform limitation of 200 most-probable-number per 100 milliliters identified in the City's NPDES permit. Sodium hypochlorite will be used for disinfection to avoid potential safety hazards associated with using chlorine gas. The hypochlorite will be applied at the entrance to Basin and at the overflow weir between Basins 1 and 2 because most of the solids will settle in Basin 1 and disinfection is much more efficient if solids are removed before applying the disinfectant. Dechlorination must also be provided to reduce the toxic effects of disinfection on aquatic life. Sodium bisulfate will be used to reduce the residual chlorine concentration to 0.1 milligrams per liter (mg/l), as required by the City's NPDES permit, immediately prior to discharge to the Sacramento River. The chemical storage facilities to be located onsite will provide enough capacity to disinfect 75 MG of combined wastewater. These facilities will be located on a site adjacent to the entrance road and parking area north of the reservoir.

In addition, the extension of U Street will be constructed to provide sufficient space for delivery of the chemicals by truck. An existing 12-inch storm drain and 6-inch potable water pipeline will have to be relocated to construct these facilities.

At this time, the ability of Pioneer Reservoir to operate at the same removal efficiencies as the CWTP has not been demonstrated to the RWQCB. Therefore, the City will complete an Equivalency Demonstration Program (EDP) to show that the reservoir, in its present configuration, provides substantial removal of total suspended solids comparable to that obtained at the CWTP, and that the coordinated use of both the CWTP and Pioneer Reservoir as treatment facilities will not result in a net increase in total mass emissions of suspended solids to the Sacramento River. The EDP consists of a sampling and analysis program for the winters of 1995-1996 and 1996-1997. Review of water quality

TABLE 4-2

PROPOSED PUMP STATION 2 REHABILITATION ITEMS AND IMPROVEMENTS

No.	Item*	Description
1	Vacuum priming (R)	Modify priming tanks, level switches, solenoid valves to improve operations of the existing pump station by decreasing the time required to prime each pump prior to starting.
2	Automation of pump start-up (R)	Install additional controls and instrumentation to improve operation and reliability of pumping equipment.
3	Seismic (R)	Make seismic structural modifications as necessary.
4	Concrete surfaces in the screen channels and pump station chambers (R)	Restore concrete thickness and integrity of existing concrete walls and top slabs in the pump station, which are severely corroded.
5	Mechanical bar screen (I)	Install automated climber-type screens In new pump station.
6	Screening collection system (I)	Install handling system for screened debris.
7	Sluice gates (I)	Install sluice gates to allow Pump Station 2 to be isolated from the influent sewers during dry weather periods.
8	Suction piping for Stage 1 pumps (R)	Replacements to be determined during final design.
9	Discharge valves and operators (R)	Install new knife gate valves (Type 316 SS) and operators which would allow valves to close quickly in the event of a power failure.
10	Discharge piping for Stage 1 pumps (R)	Replace with new steel piping, since existing piping is suspected of having internal corrosion or pitting and is fabricated with inferior welds.
11	External grounding system (R)	Install secondary ground ring electrode around the perimeter of the pump station to provide better protection of personnel in the event of a ground fault of the high-voltage electrical equipment.
12	Collection system monitoring with telemetry (R)	Install level monitoring instrumentation at four locations within the collection system and telemetry back to Pump Station 2 in order to provide operators of Pump Station 2 current information about wastewater levels or flow rates at key locations within the collection system upstream of Pump Station 2. This information would help in making key operational decisions as to whether to activate Pump Station 1/1A, Pioneer Reservoir and CWTP and how many pumps to activate at Pump Station 2, and when to begin discharging to the Sacramento River during moderate and large storms.
13	Stage 1 discharge manifold (R)	Repair previous leak area at discharge manifold by relining interior and recoating the exterior.
14	Grated walkways and hand railings in Stage 1 pump room (R)	Replace original walkways with new grating to reduce the chance of accidents.
15	Non-potable water system (R)	Remove abandoned piping, replace old or poorly located piping and label various components of non-potable water system.
16	Instrument air supply system (R)	Provide instrument quality air (i.e., dry air free of oil) to minimize failure and to provide longer equipment life.
17	Switchgear (R)	Replace/increase switchgear if required to handle existing Pump Station 2 pumping station and new 190 MGD station. Raise switchgear equipment to 100-year flood level (elevation 25 feet).

TABLE 4-2

PROPOSED PUMP STATION 2 REHABILITATION ITEMS AND IMPROVEMENTS

No.	Item*	Description
18	Emergency standby power (R)	Provide 100 percent emergency standby power in a new structure (12 by 20 feet), in lieu of electrical power provided by the SMUD 21kV feeders, which are subject to power outages. Install either independent Underground Feeder, or 3 above Diesel or Gas Driven Generators and 1,000-gallon fuel tank at the RWTP.
19	Uninterruptable power supply (R)	Test to determine condition and remaining useful life of existing equipment; replace if necessary.
20	Locker/restroom facilities (R)	Provide separate men/women lockers/restrooms and showers and lunch rooms in portion of the RWTP headhouse.

NOTES:* (R) Rehabilitation Items
(I) Improvement Items

SOURCES: Combined Sewer System Project Overview, City of Sacramento Department of Utilities, March 1996; Preliminary Design Report - Sump 2 Rehabilitation and Improvements, City of Sacramento Department of Utilities, April 1996, updated August 1996.

data collected to date reveals that Pioneer Reservoir already provides total suspended solids (TSS) removals when operated in the existing serpentine flow-through pattern. Biochemical oxygen demand, metals, and chlorinated hydrocarbons (herbicides and pesticides) are also probably removed to some extent along with the solids. Therefore, the City Utilities Department believes that solids loads to the Sacramento River will not be increased when the CSS Improvement and Rehabilitation Plan is implemented, even if no modifications (other than disinfection) are made to Pioneer Reservoir. This is because combined wastewater that was pumped to the Sacramento River as untreated CSOs in the recent past would flow through Pioneer Reservoir, where substantial solids removal would take place. In addition, under the CSS Plan, the CWTP would operate before the Pioneer Reservoir. The CWTP would likely receive less-dilute, stronger wastewater earlier in a storm, while Pioneer Reservoir would likely receive more diluted, weaker wastewater later during a storm.

If equivalent performance cannot be demonstrated, it will be necessary to proceed with modifications to the reservoir to increase solids removal capability, subject to the limits imposed by the constraints of the existing structure. Most likely, structural modifications would be made to convert the reservoir to a set of three parallel primary sedimentation basins. The flow pattern would be changed from its present serpentine flow to a pattern where flows pass simultaneously through all three basins in parallel. The tanks for the disinfection application would have to be relocated to conform to the parallel flow pattern. No geotechnical investigation or structural analysis has been conducted for this structural modification; however, these studies would be undertaken during design if the modifications are considered necessary in order to achieve performance comparable to the CWTP.

The minimum theoretical capacity following conversion to the three parallel sedimentation basins would be 107 MGD. This figure is the minimum capacity that the Department of Utilities estimates Pioneer Reservoir can operate and still achieve a treatment level comparable to the CWTP. The actual treatment capacity would be between 107 and 350 MGD. (The 350 MGD figure is the total hydraulic capacity of Pioneer Reservoir if all gates were lowered and wastewater flowed unobstructed; it is the maximum amount of flow that could go through the system without the normal level of treatment.)

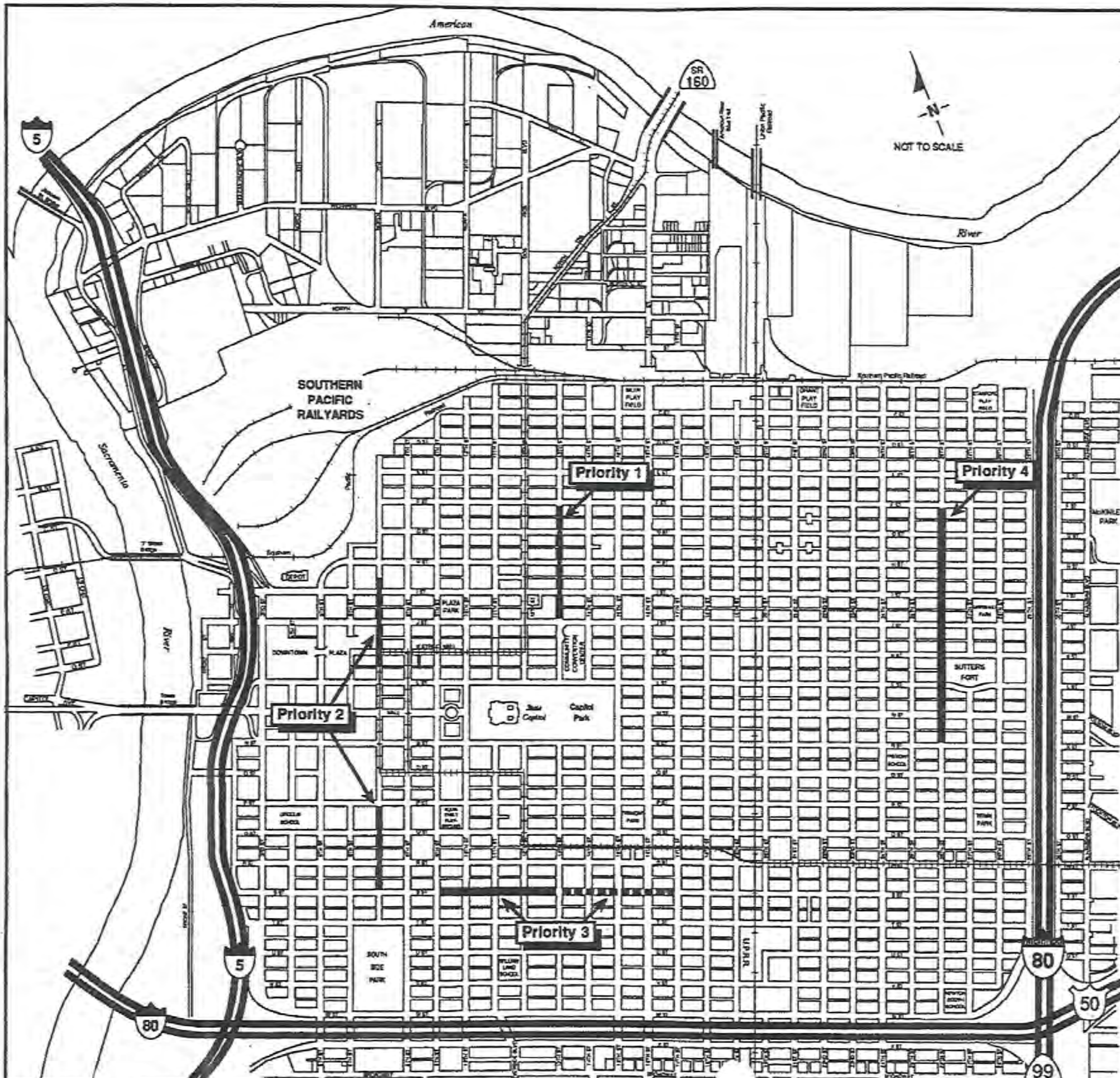
The conversion of Pioneer Reservoir would not include any sludge collection equipment. The current practice of flushing settled sludge and debris back to Pump Station 2 and on to the SRWTP after each use of the reservoir will continue. Construction activities would be contained on site and not affect off site adjacent facilities such as the Unocal and Chevron facilities. It should be noted, however, that if adjacent facilities could be disrupted the City is required to follow Standard Specifications (refer to Appendix 15-3) that address these issues.

4. <u>Rehabilitation and Replacement of Underground Piping System</u>

Nearly all of the piping system is over 60 years old, and most of the downtown area sewers are 80 to 100 years old. Figure 4-3 depicts the location of the brick sewers and

Figure 4-3

Location Of Brick Sewers



SOURCE: City of Sacramento, EIP Associates, October 1996.

identifies the City's priority areas for rehabilitation and replacement of the underground system in the downtown area. The system has structural defects including cracked pipes, corrosion, deteriorated and missing grout at pipe joints, and root intrusion that can clog sewers and limit hydraulic capacity. If rehabilitation is not undertaken, portions of the CSS will increasingly fail or collapse which would result in increased outflows and stormwater flooding endangering public safety and causing substantial community and business disruption. These facilities need rehabilitation to insure the reliability, future integrity and hydraulic capacity of the CSS for continued economic development of the City and public safety and welfare. Rehabilitation of the CSS piping system would also provide a safe and efficient work environment for City operation and maintenance crews.

Selected laterals (under 16 inches in diameter), mains, and interceptors (up to 114 inches in diameter) would be rehabilitated or replaced over the 30+ year timeframe of the CSS Plan. Both conventional trenching and trenchless technology would be utilized, and be dependent upon the type of improvement needed. The exact locations of these improvements and construction techniques to be utilized are unknown. However, based on a preliminary evaluation, it has been estimated that approximately 20 percent of the existing sewers from 18 to 54 inches in diameter require rehabilitation. In general, the interceptors (pipes 60 inches in diameter and larger) are in good condition. A significant root control and grouting program is required for pipes from 18 to 36 inches in diameter. In addition, approximately 25 percent of these smaller 18- to 36-inch diameter pipes require rehabilitation. In addition, for any pipeline work, the drop inlets are upgraded to "Modified B" boxes to improve localized flooding. These inlets include a hood located at an opening in the back of the grate that serves to eliminate clogging, which routinely occurs when there are leaves or other debris in the streets. The modified inlets also include a trap, which fills with water in order to prevent sewer odor.

The CSS area would be divided into subareas of 20 to 50 acres for purposes of design and construction, and construction would be timed with other City infrastructure and street projects to minimize disturbance. Areas experiencing the most severe flooding and containing the most deteriorated sewers would be targeted first. These areas are in the downtown which contains the older brick sewers. Figure 4-3 depicts the location of the brick sewers in downtown. The City has prioritized those sewers that need the most immediate attention, they are as follows:

- Priority 1 -
  13th Street (F Street to J Street): Dig and replace 1,300 feet of 24-inch brick sewer based on inflow control and storage requirements.

- Priority 2 -
  7th Street (H/I alley to K/L alley): Dig and replace 1,100 feet of 24-inch brick sewer. This line is undersized and has conveyance restrictions downstream.

  7th Street (P Street to S Street): Dig and replace 1,500 feet of 24-inch brick sewer. This section of main may be relined because flows have been reduced from a 33-inch bypass line. This lined section may also provide inflow control/storage capacity advantages.

- Priority 3 -
  S Street (9th Street to 17th Street): Dig and replace 1,600 feet of 54-inch brick sewer from 9th to 13th streets and 1,600 feet of 48-inch brick main from 13th to 17th street.

- Priority 4 -
  25th Street (F Street to N Street): Dig and replace 3,400 feet of 54-inch brick sewer. Lining of this main may also be acceptable.

Regulatory Provisions For Construction Activities

Grading, trenching and all other construction activities associated with the proposed CSS Plan will be governed by various standards. The City's 1989 *Standard Specifications for Public Works Construction* were developed in compliance with the American Water Works Association (AWWA) and the American Standards for Testing Materials (ASTM). Furthermore, the City of Sacramento Utilities Department will also prepare project specific provisions for individual projects associated with the CSS Plan. The City also has prepared and employs project specific Best Management Practices (BMPs) and erosion, sediment and pollution control practices before, during, and after construction, which apply to the project. The primary objective of the "Best Management Practices" is to minimize sedimentation and pollution associated with construction. Refer to Appendix 15-3, Existing Applicable Regulations, which summarizes the applicable local, State and federal regulations that Projects would apply to the CSS Plan.

Phase 2 Description

After Phase 1 improvements are made, the City will monitor the performance of the CSS to determine if reductions in flooding and outflows achieved by increasing the pump station capacities are sufficient to adequately protect public safety and welfare or if additional cost-effective improvements need to be made. The evaluation will consider improvements to public safety (i.e., emergency access and health considerations), reductions in property damage (greater than $10,000), and minimizing public inconvenience due to flooding (where a vehicle or pedestrian need to detour one or more blocks or where a vehicle or person is prevented from reaching or leaving a structure). In addition, a benefit/cost evaluation will consider the expected annual flood reduction benefits (in 1000 cubic feet per million dollars). Based on the conclusions of the evaluation, the Phase 2 components will be further defined and the sequencing of improvements can be determined.

The objective of Phase 2 is to design and construct facilities to alleviate flooding and outflows to local areas. At this time, the exact locations and combination of facilities needed is unknown. Therefore, these components will be evaluated at a more general, programmatic level than Phase 1. The Phase 2 facilities consist of several local improvements and in-situ sewer lining.

Local Improvements

Local improvements will consist of the following four options:

1. Inflow Control and Local Storage (ICALS)

   ICALS consist of shallow, underground local storage structures used to temporarily store combined wastewater (for the 10-year event) until there is adequate capacity in the downstream collection system to accommodate the flow (see Figure 4-4 for a typical configuration). They can provide approximately 800 cubic feet of storage per acre of land. These facilities are usually constructed of a 48-inch diameter concrete pipe or rectangular pre-cast reinforced concrete box sections that are installed end-to-end to provide the necessary length to accommodate storage. ICALS are usually filled and drained with gravity-flow pipelines, thereby eliminating the need for drainage pumps. Flow is typically conveyed from an overflow weir in a manhole located at an adjacent sewer. The flow is controlled with a vortex-flow control device installed at the outlet. They are typically located in street intersections. There are three installation options for ICALS:

   - Segmented Pipe: This option would use two segments of 48-inch storage pipe between major utility conflicts and busy intersections, each with a central manhole at the downstream end of each pipe and an access manhole at the upstream end of each pipe. This option is most feasible in areas where there are short runs of available corridor. A disadvantage is that two manholes would need to be constructed and maintained.

   - Connected Pipe: This option would use segments of 48-inch storage pipe connected by smaller diameter pipe at utility conflicts and busy intersections. This option is most feasible in areas where there is a relatively high number of utility crossings concentrated in small areas or where articulated storage pipe construction is necessary (for example around a corner into an alley). An advantage is that a continuous pipe with only one central manhole is required. A disadvantage is the relatively large number of manholes required for every change in pipe diameter.

   - Unsegmented (Straight) Pipe: This option would use a straight, unsegmented, 48-inch storage pipe. In this arrangement, existing smaller diameter sewer and storm drainage pipes would either pass through the 48-inch pipe or be relocated to pass beneath the storage pipe. This option is most feasible in areas where there are relatively few sewer and storm drain utility crossings and where corridor lengths of over 250 feet are available. An advantage is that a continuous pipe could be installed and maintained using a central manhole. A disadvantage is the difficulty of having to relocate existing utilities beneath the storage pipe and reconnecting them near the CSS pipe. Also, passing the crossing pipes through the overflow pipe may cause differential settlement problems and increased cleaning requirements due to solids collecting on the crossing pipes.

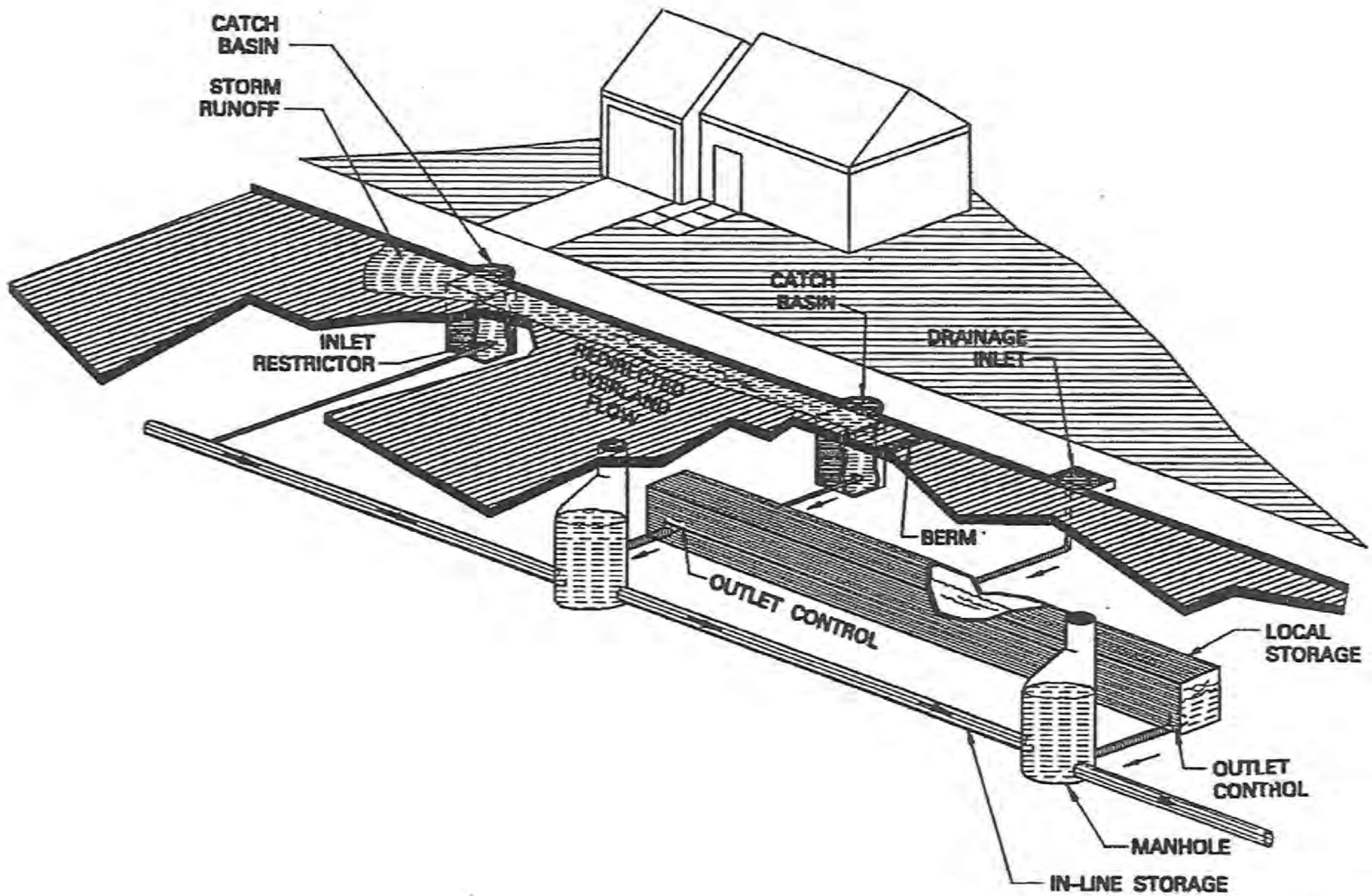


FIGURE 4-4
MAJOR COMPONENTS OF INLET CONTROL ALTERNATIVE AND LOCAL STORAGE

ICALS DESIGN GUIDANCE MANUAL
City of Sacramento, California

HARZA *Consulting Engineers and Scientists*
February 1996.

Certain aspects of ICALS may be implemented in problem areas early during Phase 1 of the CSS Plan due to public concern about frequent flooding and outflows within the six wet areas (refer to Figure 3-3 in Chapter 3). These aspects could include pump station modifications and construction of larger pipes for storage. These types of projects would be considered as Capital Improvement Projects (CIPs) related to the CSS Plan, as described in Chapter 6, Related Projects. ICALS may, however, be more difficult to install in downtown, due to construction conflicts with other utilities and traffic.

2. Subregional and Regional Storage

These facilities work in conjunction with ICALS. They consist of relatively large deep storage facilities that temporarily store combined wastewater until there is adequate hydraulic capacity in the downstream collection system to accommodate the flow. These facilities usually consist of large reinforced, cast-in-place concrete boxes. Since these facilities are also placed deeper than ICALS, pumps are required to drain the storage box following a storm.

A regional storage facility was recently installed in the 42nd Street drainage area under R Street and a portion of the Regional Transit light-rail right of way between 40th and 42nd Streets. This storage structure will hold up to 220,000 cubic feet of combined storm and wastewater during large storm events and provide protection from approximately a 5-year storm event until downstream improvements are completed to achieve 10-year protection.

Regional storage facilities may also prove practical in wet areas two and six. Currently, the City is considering two locations for these facilities: U.C. Davis Medical Center (UCDMC) and the Union Pacific Railroad (UPR) yards. If installed, these two facilities will provide approximately 5-year protection for the two wet areas. These facilities will not address more localized constrictions at drop inlets and within collection systems inside the wet areas. ICALS or upsized pipes would need to be placed where the constrictions are located to solve these local drainage problems. If additional regional storage facilities are constructed throughout the CSS service area, the level of flood protection would be increased, to a 10-year level of protection. Refer to Chapter 6, Related Projects, for more information on the potential use of the UCDMC and UPR sites.

3. Upsized Sewers

Upsized sewers are gravity-flow pipelines installed to relieve existing sewers that do not have adequate capacity to convey peak flows. Upsized sewers improve conveyance for reducing outflows and flooding in streets, and also provide in-line storage of flows. Upsized sewers are usually installed within the existing sewer line to be relieved from the location where the deficient capacity exists to a downstream location where sufficient flow capacity exists. They may extend to adjacent laterals in an area of an interceptor that may be deficient for several blocks.

It is proposed that upsized sewer alignments be placed to take advantage of where CIPs for brick sewer replacement are being planned to minimize construction impacts. They may also be installed in conjunction with new development projects. Currently, the feasibility of a network of large upsized sewers in the Central Business District (CBD) in lieu of ICALS is under evaluation by the City. This upsized sewer network would drain to Pump Station 1/1A. Another is being considered for the Land Park area near the City Zoo, which will drain to Pump Station 2. A third location is under consideration along 21st Avenue. Other upsized sewer projects currently under consideration are shown in Table 4-3. Also refer to Chapter 6, Related Projects.

4. Sewer Replacement

Sewer replacement is utilized when an existing sewer is damaged beyond repair and there is inadequate space to install a upsized sewer. The new sewer is often larger than the old sewer. To avoid excavating large areas, trenchless technology is often used and includes a technique called "sewer bursting." This technique breaks and expands the existing pipe in order to insert a new pipe in the expanded line.

CWTP Modifications

This component of Phase 2 is in the early stages of the preparation of a pre-design report for CWTP modifications. Evaluation of various designs will consider the following nine system items:

- Mechanical equipment to be rehabilitated or replaced.
- Improved sedimentation and biosolids removal process.
- Improved performance of sodium hypochlorite/sodium bisulfite disinfection system.
- Potential to increase the hydraulic capacity above 130 MGD.
- Improve control of gaseous (hydrogen sulfide, VOC, and methane) emissions.
- Improve process control and instrumentation system.
- Correction of deficient structural conditions.
- Equipment and sections of piping needing repair or replacement due to corrosion.
- Improvement to the No. 2 water system to meet demands and insure reliable operation.

In addition, the evaluation will present a schedule for design and construction and provide cost estimates.

Public Education and Early Response Action Plan

Developing a public education and early response plan is an important non-structural component of the CSS Plan. The public education program would be implemented to persuade property owners to make needed repairs in order to help remove sources of inflow to the CSS from private property. The early response action plan would implement rain patrols, which would monitor street curb gutters for potential sewer backup from yard and other debris.

TABLE 4-3

CSS PROJECT (UPSIZED SEWER) PRIORITY RANKING LIST

Location	Description
Land Park	A large upsized sewer project is planned for the Land Park community and will be combined as a component of future CIP work in this area to reduce the total cost of the Land Park project. No benefits will be seen in this area until Pump Station 2 improvements are constructed.
20th/21st Broadway	A large upsized sewer project is planned for the 20th/21st and Broadway corridor and will be combined as a component of future CIP work in this area to reduce the total cost of the 20th/21st and Broadway project.
Lagomarsino	Lagomarsino is in a separated sewer location that discharges to the CSS. Backups in the CSS can result in discharges of raw sewerage to the street under storm conditions.
41st Street from H to J Streets	New upsized sewer project location for future ranking.
1201 K Street	The upsized sewer Project for this area of downtown will reduce localized flooding in this alley from an estimated 23,000 cu-ft to 5000 cu-ft. A portable floodgate will be constructed as an interim solution to block overflows from basements.
Renaissance Tower	The upsized sewer Project for this area of downtown will reduce localized flooding in this alley from an estimated 9000 cu-ft to 3500 cu-ft. A portable floodgate will be constructed as an interim solution to block overflows from the basements.
Central Business District (CBD)- 7th Street from H Street to S Street	This section contains some brick sewer lines that are old and need immediate attention and have a high replacement priority. The existing 7th Street brick lines range from 24-inches to 16-inches in diameter, the proposed upsized sewer diameters will be 54-inches from H Street to L Street, 60-inches from L Street to P Street, and 72-inches from P Street to S Street.
U Street from Interstate 5 to 5th Street, then 5th Street from U Street to S Street, then S Street from 5th Street to 7th Street	This section requires upsizing the existing 54-inch and 60-inch lines in S Street and 5th Street, respectively, with a 90-inch diameter main. This phase will also require constructing a second 84-inch main in U Street from 5th Street to Pump Station 1, which includes tunneling under Interstate 5 (I-5) or replacing the 84-inch main with a 96-inch main to I-5 and a second 84-inch main under I-5.
S Street from 7th Street to 17th Street	This section of S Street contains brick sewer main in need of replacement. The replacement work of the brick sewer should be done as part of the upsized sewer project. The replacement work will require constructing 84-inch upsized sewer from 7th Street to 11th Street and 72-inch upsized sewer from 11th Street to 17th Street.
15th Street from S Street to J Street, and J Street from 13th Street to 15th, and J Street from 18th Street to 15th Street	This section requires constructing 36-inch and 54-inch upsized sewers in 15th Street and 24-inch and 30-inch lines in J Street as follows: In 15th Street, a 36-inch upsized sewer will run from J Street to L Street where it changes to a 54-inch line then continues from L Street to S Street. Two separate J Street Lines will convey flows to the new 15th Street upsized sewer through a 30-inch line designed to flow from 13th Street to 15th Street, and through a 24-inch line placed to carry flows from 18th Street to the 15th Street upsized sewer.

TABLE 4-3

CSS PROJECT (UPSIZED SEWER) PRIORITY RANKING LIST

Location	Description
G Street from 13th Street to 9th Street, then 9th Street from G Street to H Street, then H Street from 9th Street to 7th Street	This section will consist of installing in G Street, a 21-inch sewer line to flow from 13th Street to 11th Street, then upsize to a 30-inch in G Street from 11th Street to 9th Street, then take the 30-inch line south in 9th Street to H Street. In H Street Construct a 36-inch line from 9th Street to 7th Street.
L Street from 13th Street to 7th Street, and E Street from 17th Street to 18th Street	This is the final segment of the CBD upsized sewer network. This section requires installing a 36-inch diameter upsized sewer in L Street from 13th Street to 7th Street. There is also a minor recommended improvement to install a 21-inch sewer line in E Street from 17th Street to 16th Street.

SOURCE: Priority Ranking System for the Combined Sewer System (March 1996) Revised, City of Sacramento Department of Utilities, May 1996; and Combined Sewer System Technical Memorandum: Upsized Sewers in the Central Business District, City of Sacramento Department of Utilities, February 1996.

In-Situ Sewer Lining

In some locations, sewers need not be increased in diameter and only need rehabilitation, to provide additional flow capacity and reliability. In these cases "in-situ lining" is often utilized which involves inserting liners inside the existing cracked or broken sewer. This technique does not require excavation of the entire street.

PROJECT FINANCING

The City would use debt financing through sale of revenue bonds to construct the improvements and rehabilitation of the two pump stations and Pioneer Reservoir. The rehabilitation of the combined sewers would be funded on pay-as-we-go basis. The City is committed to spend approximately $10 million per year to improve and rehabilitate the CSS. Approximately $3.5 million per year of this amount would be used to finance revenue bonds to pay for large projects and the remaining $6.5 million per year would be spent on smaller pay-as-you-go projects. It is anticipated that sewer and storm drainage utility rates may need to increase 2 to 5 percent per year through year 2000 in order to pay for the entire CSS Improvement and Rehabilitation Program.

PROJECT SCHEDULING

Completion of the entire CSS Improvement and Rehabilitation Program would extend over a 20-year period. The City plans to complete Phase 1 within the first ten years and Phase 2 over the remaining 10 years. The replacement and rehabilitation of the underground piping system would occur throughout and beyond Phase 1 and Phase 2, over a 30-year period. Improvement and rehabilitation of the CSS will be coordinated with sewer replacement and street paving projects and will begin during Phase 1 with the brick sewers in the downtown area. The sequence of Phase 2 project implementation will be determined by a project evaluation system after the reductions in flooding and outflows from the Phase 1 improvements are evaluated.

Pump Station 1/1A Rehabilitation and improvements would be combined with Pioneer Reservoir modifications to form a single project. The design phase would last approximately six months, with a construction period of one year and three months anticipated. Project design is anticipated to be completed by the end of 1996, with construction completed by March 1998.

The decision regarding the structural modifications to convert Pioneer Reservoir to a set of three parallel primary sedimentation basins will depend on the results of the EDP. The EDP will be completed in the spring of 1997. Design of the structural modifications, if necessary, would take approximately six months. A 15-month construction period is anticipated, with completion occurring by March 1999.

Pump Station 2 rehabilitation and improvements would be designed and constructed in two separate phases. The first phase would include construction of the 190 MGD station and include some rehabilitation items that are required for the pumping station or because their construction would not be simplified by waiting for the second phase. The second phase would include most of the rehabilitation items (which are simplified in their construction by waiting until the 190 MGD station is operational). The first phase design would take approximately one year. The construction period would take about one to one and one-half years and would be completed by March 1999. The second phase would be designed during construction of the first phase and be completed by April 2000.

Certain local storage projects (ICALS) and upsized sewer construction may be implemented early during Phase 1 due to public concern about frequent flooding and outflows. These projects would require additional project-specific environmental review since the evaluation of ICALS in this EIR is programmatic.

Large-scale implementation of regional storage facilities would be deferred until the actual amounts of flood reduction achieved by increasing the capacities of the pump stations during Phase 1 can be evaluated.

REQUIRED DISCRETIONARY ACTIONS

Implementation of the proposed CSS Plan is two-phased. The first phase includes project level environmental review and approval of Pump Station 1/1A, Pump Station 2 and Pioneer Reservoir; the second phase includes programmatic level environmental review and conceptual approval of the ICALS and subregional and regional storage facilities, upsized sewers, sewer replacement, CWTP modifications and the public education and early response action plan. The subject of this EIR is the approval of both Phase 1 and Phase 2 CSS improvements and rehabilitation items. The following section describes the discretionary actions which are required at this time for project approval.

Lead Agency Approval

The City of Sacramento shall consider approval of the following discretionary actions:

- *Certification of the EIR.* The City Department of Utilities, as the project proponent, is requesting acceptance of this environmental document as having been prepared in compliance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines, the City of Sacramento CEQA Guidelines and certification that the data was considered in final decisions on the CSS Improvement and Rehabilitation Plan and that the EIR is adequate and complete.

- *Approval of Phase 1.* The City Department of Utilities, as the project proponent, is requesting project-level approval for Phase 1. Phase 1 includes Pump Station 1/1A, Pump Station 2, Pioneer Reservoir, and rehabilitation and replacement of the sewers. Approval of Phase 1 would allow the City Utilities Department to proceed with final design and construction of the Phase 1 improvements; obtain various federal and state reviews, approvals and permits; obtain temporary construction easements and negotiate the relocation of affected utilities. It should be noted that modifications and additions to historically significant structures are subject to review and approval by the City's Design Review and Preservation Board.

- *Approval of Phase 2.* The City Department of Utilities, as the project proponent, is requesting conceptual approval for Phase 2. The CSS Improvement and Rehabilitation Plan serves as the City's proposed Long-Term Control Plan called for in EPA's National CSO Control Policy, which includes various system improvements and rehabilitation items to be implemented during Phase 1 and Phase 2 to reduce CSOs, outflows, and local flooding. Phase 2 includes the ICALs and subregional and regional storage facilities, upsized sewers, sewer rehabilitation and replacement, CWTP modifications and the public education and early response action plan. As with any project subject to CEQA, additional environmental analysis of the Phase 2 projects would be undertaken at the time future discretionary actions are considered. It should be noted that the CIPs related to the CSS Plan (refer to Table 6-1 in Chapter 6, Related Projects) are considered categorically exempt under CEQA (§ 15301(b)), when the operation, repair, maintenance or minor alteration of these existing facilities involves only the negligible or no expansion of use beyond previously existing. An exception is the 42nd Street Improvement Project, which has already undergone separate environmental review.

ENDNOTES

1. City of Sacramento, City of Sacramento General Plan Update, Draft EIR, March 1987, p. I-10.

2. Ibid. p. J-6.

3. Brown and Caldwell, *Preliminary Design Report Pioneer Reservoir Improvements,* April 1996, Appendix A, p. 4.

5. ALTERNATIVES

5.1 INTRODUCTION TO THE ALTERNATIVES

5.1 INTRODUCTION TO THE ALTERNATIVES

INTRODUCTION

The purpose of this chapter is to identify and describe the alternatives to the CSS Plan, or proposed project. Project alternatives are developed to reduce or eliminate the adverse environmental effects of the proposed project, while attempting to meet the project objectives. The California Environmental Quality Act (CEQA) requires that a No Project Alternative also be analyzed within the EIR.

California Environmental Quality Act (CEQA) Requirements

An EIR is required to contain a discussion of a reasonable range of alternatives to the proposed project, or to the location of the proposed project that would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project (CEQA Guidelines, Section 15126(d)). The comparative merits of the alternatives also should be presented. CEQA provides the following guidelines for discussing alternatives to a proposed project:

- The discussion of alternatives shall focus on alternatives capable of eliminating significant adverse effects or of reducing them to a level of insignificance, even if these alternatives would partially impede the attainment of the proposed objectives, or would be more costly (CEQA Guidelines, Section 15126(d)(1)).

- The choice of alternatives to be discussed in the EIR should be explained as well as why other alternatives that were considered in developing the proposal were rejected as infeasible in favor of the proposal (CEQA Guidelines, Section 15126(d)(2)).

- 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 (CEQA Guidelines, Section 15126(d)(3)).

- The specific alternative of the "no project" also shall be evaluated along with the impacts of this alternative. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines, Section 15126(d)(4)).

- The range of alternatives required in an EIR is governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives fosters informed decision-making and informed public participation (CEQA Guidelines, Section 15126(d)(5)). Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic visibility, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site. No one of these factors establishes a fixed limit on the scope of the reasonable alternatives (CEQA Guidelines, Section 15126(d)(5)(A)). An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (CEQA Guidelines, Section 15126(d)(5)(C)).

5.2 ALTERNATIVES CONSIDERED WITHIN THE EIR

5.2 ALTERNATIVES CONSIDERED WITHIN THE EIR

INTRODUCTION

To determine a range of alternatives for an EIR, CEQA states that the "rule of reason" should be used, and that an EIR need not consider an alternative whose implementation is remote and speculative (CEQA Guidelines, Section 15126(d)(5)).

EIR Alternatives

Two alternatives have been selected to be evaluated in this EIR. These alternatives will be analyzed at an equal level to the proposed Phase 1 and Phase 2 components. The two alternatives are compared to the CSS Plan in Table 5.2-1 on the following page and described in detail below.

No Project Alternative

The No Project Alternative does not include the outflow, local flood or CSO control improvements identified in the CSS Improvement and Rehabilitation Plan, dated July 1995. Under this alternative, the CSS would remain as presently functioning. Any changes to the CSS are purely rehabilitative in nature and consist solely of the rehabilitation items identified in the CSS Plan. Rehabilitation items are defined as those which will improve the reliability, operations and maintenance of the system. These items are considered a priority by the City from a public safety and infrastruction protection standpoint. This alternative will be the baseline by which the proposed project and other alternatives are measured. It is assumed that implementation of this alternative would result in a permanent CDO and may cause a moratorium on new development within the CSS service area.

The basic objective of the rehabilitation items proposed for the CSS is to arrest future deterioration of the system. Portions of the CSS are considered old, worn out, and in need of rehabilitation or replacement. If rehabilitation is not undertaken, there is danger that the CSS will fail or collapse, which could endanger public safety (resulting in increased outflows and stormwater flooding) and could cause substantial community and business disruption. These facilities need rehabilitation to insure the reliability, future integrity and hydraulic capacity of the CSS for continued economic development of the City and public safety and welfare. Rehabilitation of the CSS will also provide a safe and efficient work environment for City operation and maintenance crews.

Rehabilitation will generally include replacing worn or obsolete equipment, repairing corroded equipment or structures, and providing additional equipment and controls to improve system operations. Rehabilitation construction techniques will range from repair or stabilizing the existing pipe to major in-place construction of linings or full replacement (which will usually occur at site-specific locations only). The rehabilitation items will be coordinated with various City street improvement projects to derive the greatest benefit from existing fund sources as well as to minimize community disruption during construction activities.

TABLE 5.2.1

COMPARISON OF PROJECT AND EIR ALTERNATIVES

Alternative Project	Affordable Cost	Improves Street Flooding Conditions	Improves Outflow Conditions and Public Health	Improves CSOs and Sacramento River Water Quality	Minimizes Construction Impacts and Disruptions
No Project	✓✓				✓✓
Sanitary Sewer Separation	✓✓		✓✓	✓✓	
Rehabilitation and Improvement Project	✓✓	✓✓	✓✓	✓✓	✓✓

SOURCE: City of Sacramento Department of Utilities, May 1996.

In general, the No Project Alternative will consist of the following items:

- Pump Stations 1/1A and 2 were constructed in the early 1900s and require significant rehabilitation work. Much of the equipment is outdated, no longer serviceable, or excessively worn and no longer operates properly. Tables 4-1 and 4-2 in Chapter 4, Project Description, identify Pump Stations 1/1A and 2 rehabilitation needs.

- Pioneer Reservoir rehabilitation work will include replacement of the flush water pumping system and valve operator for the 120-inch outfall valve.

- The City of Sacramento Combined Wastewater Treatment Plant (CWTP) was completed in 1983 as a major modification of the previous City Main Wastewater Treatment Plant. Currently, the CWTP has not been evaluated to determine rehabilitation needs. An assessment is expected in late 1996.

- All of the pipes in the CSS are at least 50 years old. A significant portion of the CSS is 80 years or more in age. Although many of the existing sewers are in sound condition, the design life of the system is "spent." However, only isolated areas were found to require immediate rehabilitation or replacement. Foremost are the brick sewers in the downtown area (where the oldest sewers exist). These sewers will require a major rehabilitation effort for life extension. Structural defects include cracked pipes, corrosion, deteriorated and missing grout at pipe joints that results in excessive infiltration, and root intrusion that clogs sewers and limits the hydraulic capacity of the system. Some sewers may be close to collapsing, creating a public safety concern. For other portions of the CSS, an intensive, ongoing sewer inspection program will monitor the condition of the pipes.

- The SRCSD has jurisdiction and service responsibility for conveyance, treatment, and disposal of wastewater generated within the City of Sacramento, City of Folsom, and the Sacramento County Sanitation District No. 1 (CSD-1). To plan for future facilities to accommodate the projected growth demands and changing environmental regulations, the SRCSD prepared the Sacramento Regional Wastewater Treatment Plant Master Plan (SRWTP Master Plan) and the along with CSD-1 prepared the Sacramento Sewage Expansion Master Plan (Expansion Master Plan). The SRWTP Master Plan was developed by the District to "mitigate" the potential effects of planned growth on sewer service.[1] The Expansion Master Plan focuses on the expansion of SRCSD's sewer conveyance system that conveys the wastewater from within the service area.

  The City has an agreement with the SRCSD to convey a maximum of 60 MGD to the SRWTP for secondary treatment and disinfection prior to discharge. Implementation of the No Project Alternative would allow the current CSS system to continue operating with only rehabilitative improvements scheduled to maintain the integrity of the system. The improvements to SRCSD's conveyance system and the SRWTP are based on flow rates derived from the City's SGPU.

- In addition, if a proposed development project is determined to have a significant impact on the CSS, the project proponent is required to develop a mitigation plan which is acceptable to the City. The mitigation plan may include on-site storage with retention, sewer main up-sizing, diversion of flows, rerouting or replacement of pipes, connection to separated areas, and/or other mitigation measures depending on the site. If full mitigation of system-wide impacts is not accomplished because of site constraints or other factors, the development must enter into a Mitigation Agreement.

<u>No Project Environmental Analysis</u>

This following is an overview of the CEQA checklist items as they relate to the No Project Alternative. Any significant impacts or effects are analyzed in Chapter 7. Significant impacts include Water Quality, Noise, and Cultural Resources.

Land Use and Planning

Under the No Project Alternative the proposed routine rehabilitative upgrades to the existing CSS system would not conflict with the City's General Plan or any other applicable environmental plans or policies. All of the proposed rehabilitation items associated with the No Project alternative would occur within areas already designated on the City's Land Use Map for public utility uses and zoned accordingly. However, the No Project Alternative would not help to implement the City's General Plan goals and policies that deal with reducing local flooding and minimizing potential public health risks. The No Project Alternative would attempt to rehabilitate certain areas of the existing CSS to insure the reliability, future integrity and hydraulic capacity of the current system for the continued economic development and public safety of the community. It is anticipated that implementation of this alternative would result in a permanent Cease and Desist Order (CDO) from the California Regional Water Quality Control Board (RWQCB) that would result in a building moratorium within the CSS service area. From a land use and planning perspective, similar to the proposed project, the No Project Alternative would not create any potentially significant impacts.

Population and Housing

The No Project Alternative would support the current proposed development of the property within the CSS service area, but would not generate additional population as would a residential project, for example. As mentioned above, under Land Use and Planning, implementation of this Alternative would result in a permanent CDO that would essentially halt any future development from occurring in the CSS service area. This alternative would not be considered growth inducing because it would not change the current operation of the system with the exception of routine rehabilitation and maintenance of the existing infrastructure. The growth-inducement associated with the No Project Alternative is discussed in Chapter 8.

Similar to the proposed project, any rehabilitation to the current system would occur within areas designated for public utility uses. As such, the displacement of existing housing would not be considered an impact.

Geology

The CSS service area is located within a developed area of the City of Sacramento. The No Project Alternative would not involve exposing people to a potentially hazardous or unsafe situation, related to the geologic stability of the area. However, construction activities related to routine rehabilitation and maintenance could pose some risks. The City requires that all public works projects conform to standards outlined in the City's *Standard Specifications for Public Works Construction*. These standards are designed to ensure that all structures are built to current City code and that appropriate erosion control measures are implemented during construction. In addition, the State also requires certain conditions be met in order to avoid any potentially hazardous conditions from occurring. All construction activity would conform to the applicable local, State or federal requirements and/or standards set forth in the California Code of Regulations (Title 8), the Occupational Safety and Health Act (OSHA), the Uniform Building Code (UBC) (Section A33, Excavation and Grading), and the American Society for Testing and Materials (ASTM) standards. Any potentially significant impacts related to construction activities would therefore be reduced to less than significant levels through conformance with the applicable local, State, and federal regulations, the same as the proposed project. Applicable regulations are summarized in Appendix 15-3.

Water

The No Project Alternative would not increase the amount of impervious surface cover that already exists, therefore, implementation of this Alternative would not result in an increase in the amount or rate of surface runoff. In addition, the No Project Alternative would not alter the manner in which storm water runoff is currently collected and discharged. The amount of storm water entering the Sacramento River would not change or be significantly altered, if at all, as a result of the No Project Alternative. The current water quality impacts related to the unpermitted combined sewer outflows (CSOs) would continue. This would be considered a potentially significant impact and is discussed in Section 7.1, Water Quality. It should be noted that under existing conditions, up to 92 percent of CSS flows receive disinfection, thus reducing the pathogenic content of the stormwater component as well as the sanitary component.

Similar to the proposed project, due to the implementation of existing regulations potential water quality impacts and any dewatering activities related to routine rehabilitative construction would be minimized and there would be no significant impacts relative to the change in the quantity of groundwater, and/or direction or rate of flow, and groundwater quality. Groundwater is not a source of public water supply for the City of Sacramento. However, groundwater is used in lieu of treated water for park irrigation. Implementation of regulations would minimize any potential impacts on groundwater.

Air Quality

The No Project Alternative would not create any potentially significant long or short-term air quality impacts, because this alternative does not include any changes to the current system that could potentially impact air quality. The existing seasonal odor issues would not change due to the implementation of this alternative.

Similar to the proposed project, the short-term emissions of particulate matter resulting from routine rehabilitative construction work would be controlled through existing City and SMAQMD regulations. It is anticipated that construction activities could involve ground disturbance of unpaved areas. Compliance with City requirements would reduce any potentially significant short-term construction-related impacts to less than significant levels.

Transportation/Circulation

The No Project Alternative, similar to the proposed project would not generate an increase in traffic, therefore any long-term traffic impacts would be considered less than significant. During any short-term construction activities to rehabilitate portions of the system that need repair, the contractor would be required to comply with the City's adopted *Standard Specifications for Public Works Construction*, as well as prepare a traffic control plan in accordance with the Work Area Traffic Control Handbook (WATCH) program. Compliance with City requirements would reduce any potentially significant short-term construction-related impacts to less than significant levels.

Biological Resources

As mentioned earlier under Geology, the CSS service area is located in a developed, urban environment. No sensitive habitat, wetlands or designated natural communities exist. Any construction would be limited to existing roadways and pumping facilities. In contrast to the proposed project, the No Project Alternative would not contribute to any changes in the current treatment capacity of the system. Due to the amount of untreated combined wastewater currently being directly pumped into the Sacramento River during the wet season, this undesirable condition would remain; thereby, contributing to human health impacts and impacts to water quality and aquatic biota.

Similar to the proposed project, any construction activities associated with routine rehabilitative maintenance, may adversely impact the existing root systems of the mature street trees. Under the City's Tree Ordinance, prior to the removal of any tree or any activity that may injure an existing street tree, approval is required by the Director of City Neighborhood Services (refer to Appendix 15-3). In addition, in the event tree pruning is required this would occur during the non-breeding season to avoid disturbing potential nest sites of any migratory birds. Compliance with existing City requirements would reduce any potentially significant biological impacts to less-than-significant levels.

Energy and Mineral Resources

The No Project Alternative would not involve changing the overall energy consumption of the current system. Therefore, no impacts would result. Any energy consumed during the short-term construction activities related to rehabilitative activities would not create any potentially significant impacts to the existing energy supply.

Hazards

The No Project Alternative would not change the current operation of the system, including the use and storage of chemicals. In contrast to the proposed project, it is anticipated, that the continuation of the current system would result in a permanent CDO from the RWQCB due to the unpermitted CSOs to the Sacramento River and the outflows to City streets. This impact is evaluated in section 7.1, Water Quality. The City must implement and comply with existing State and federal regulations, however, due to the current unacceptable situation a potentially significant threat to public health would persist.

Similar to the proposed project, temporary construction activities related to the proposed rehabilitative efforts of the CSS may interfere with emergency response plans or routes within the CSS service area, in part by closing portions of streets and intersections. The City's *Standard Specifications for Public Works Construction* addresses this issue. The guidelines require that the contractor furnish, install, and maintain all warning signs and devices necessary to safeguard the public, and to provide for safe routing of vehicular and pedestrian traffic during construction. In addition, the contractor would be required to comply with the WATCH program. Based on compliance with existing City regulations, potentially significant short-term construction impacts would be reduced to less-than-significant levels (refer to Appendix 15-3).

Noise

Under the No Project Alternative, short-term construction activity associated with the routine rehabilitation to the current system could create short-term noise impacts. However, City Code Chapter 66, "Noise Control", exempts activities including erection, excavation, demolition, alteration or repair of any building or structure between certain specified hours. Construction activities would not exceed accepted vibration standards. Therefore, any potentially significant noise impacts associated with construction activities would be reduced to less-than-significant levels through compliance with the City's noise ordinance. Any short-term noise impacts are evaluated in section 7.2, Noise. Implementation of this alternative would not change the existing long-term noise levels as compared to the proposed project.

Public Services

As mentioned above under Population and Housing, similar to the proposed project, implementation of the No Project Alternative would not, in and of itself, result in an increase to the projected or existing population of the CSS service area or region. Therefore, the demand for government services including new schools, fire and police protection would not change. Maintenance of the system and related facilities would continue. This routine maintenance would involve replacing old, worn out pipes and other rehabilitative type work for a system this old. The City's *Standard Specifications for Public Works Construction* require that any damage to public roadways as a result of project construction would be repaired by the contractor.

Utilities and Service Systems

As mentioned above, the No Project Alternative does not include increasing the population within the CSS service area. Therefore, implementation of this alternative would not result in the need for any new utility or service system. The improvements scheduled to replace old and worn out portions of the system may disrupt existing sewer and stormwater drainage systems within the service area, but this would occur only on a temporary basis during construction. In addition, the City would implement procedures developed by the Joint Utilities Coordination Committee that assist cities and utility companies in coordinating public improvement projects to avoid potential utility conflicts. All contractors are required by the City to implement these procedures, therefore the potentially significant impacts to utilities and service systems, similar to the proposed project, would be reduced to less-than-significant levels.

Aesthetics

Similar to the proposed project, under the No Project Alternative many of the improvements proposed to the current system involve replacing old and worn out underground pipelines or rehabilitating facilities within existing structures. Therefore, no potentially significant visual or aesthetic impacts would occur due to implementation of this alternative.

Cultural Resources

Implementation of the No Project Alternative would involve rehabilitation efforts to replace old and worn out underground pipelines and routine maintenance to the existing facilities. These construction activities could impact the City's original sewer system that is estimated to be between 60 to 100 years old, as well as any buried archeological resource. According to the State Office of Historic Preservation (SHPO) any resource older than 45 years is considered potentially historic and must be evaluated for its historic significance. The treatment of cultural resources is governed by federal, State, and local laws and regulations. Any modifications or changes to any buildings or structures determined to be of significant cultural or historic merit and any undiscovered archeological or prehistoric resource unearthed during construction activities would be required to conform with applicable laws and regulations. This issue is evaluated further in section, 7.4, Cultural Resources. Similar to the proposed project, any significant impacts would be reduced to less than significant through compliance with appropriate measures.

Recreation

As mentioned previously, the No Project Alternative would not generate an increase in population which would increase the demand for recreational facilities in the short-term, nor would implementation of this alternative affect existing recreational resources in the long-term. Any short-term interference with park activities due to construction would not be considered an adverse impact on recreational uses since the City's *Standard Specifications for Public Works Construction* requires that any damage to existing park facilities resulting from construction activities would be repaired by the contractor. Therefore, similar to the proposed project no potentially significant adverse impacts would occur to recreational facilities due to implementation of this alternative.

Sewer Separation Alternative

This alternative would include the construction of a new sanitary sewer system in the CSS service area and conversion of the existing CSS pipelines to a storm drainage system conveying only storm water runoff. It should be noted that this alternative does not meet the project objective of providing an improved level of local flood control for the existing CSS area. The Separate Sanitary Sewer Alternative includes only a minor flood control upgrade beyond the capacity of the existing system. The existing system provides flood control to a 2-year event in most areas. Under this alternative, CSOs are reduced or eliminated and flood control is slightly improved by removing the sewage portion of flow from the conveyance system. This alternative also reduces outflows.

The three major components of the Sewer Separation Alternative are: (1) the rehabilitation of the existing combined wastewater conveyance system to serve as the separate storm drainage system; (2) monitoring and data collection focused on determining the severity and extent of the outflow problem; and (3) the construction of a new sanitary sewer system.

<u>Rehabilitation of Existing System</u>

Under this alternative, the existing combined wastewater conveyance system would remain in service for the long-term. If sewer separation is implemented, then the existing piping would be converted to serve as the separate storm drainage system. No major capacity upgrades to the existing piping system for improving the level of local flood control are included in the alternative. However, for this system to continue to be serviceable, a significant root control and grouting program, along with rehabilitation of portions of the existing CSS is necessary (as described under the No Project Alternative). The recommended rehabilitation program also provides reliability upgrades to existing Pump Stations 1/1A, Pump Station 2 and Pioneer Reservoir. These upgrades would be necessary even though the existing facilities would be converted to stormwater management.

<u>Monitoring and Data Collection</u>

All of the benefits of this alternative (i.e., existing outflows that would be reduced) have not been thoroughly quantified at this time. Therefore, implementation of the capital improvements associated with sewer separation would be phased (as with the proposed CSS Plan) while the degree of the flooding problem is quantified through a monitoring and data collection program.

The proposed monitoring and sampling program has five key objectives: (1) to quantify the occurrence of combined wastewater outflows through flow monitoring and street floodwater sampling; (2) to improve the accuracy of the Sacramento SWMM input data through model calibration; (3) to provide accurate sanitary flow information for NPDES reporting; (4) to develop changes to existing CSS operational plans; and (5) to develop the preliminary design and engineering for the new sanitary sewer system.

In addition, a detailed investigation would be undertaken to determine potential problems associated with re-routing individual service connections, especially those in the oldest areas of the CSS, to a new sanitary sewer system located in the street. Difficulties and costs associated with sanitary and combined sewers located in backyard easements would be investigated in-depth. Also, potential use of the CWTP and Pioneer Reservoir for stormwater management would also be investigated during this initial period.

Concurrent with this monitoring program, the City would implement the rehabilitation and reliability improvements to the existing system, as outlined in the No Project Alternative. Thus, the overall alternative would be phased to allow for a period of data collection and rehabilitation work during the initial five year period, prior to implementing sewer separation.

New Sanitary Sewer System

The size of the proposed sanitary sewer system is based on estimates of average sanitary flow rates. The new sanitary sewer system would have 246,000 linear feet of new sewers ranging in size from 8-inch to 102-inch diameter pipes. The separate sanitary sewers would be aligned to facilitate the connection of existing sanitary services. The new separated system alignments are, therefore, with the exception of a few deviations, parallel to the existing combined sewer system. In order to comply with the depth requirements of service connections, the invert elevations of individual lines would be set equal to or deeper than the existing CSS. The collection system sewers include an additional 951,000 linear feet of new 8-inch sewer. In assessing the new sewer requirements, it is assumed that all combined sewer backyard easements would be abandoned and left in place, with new sanitary sewers installed in the street right-of-way.

Other deviations from the alignment of the existing CSS are due to construction considerations. The alignments of the main interceptors in the separate sanitary system would avoid crossing the alignments of main interceptors in the CSS. Installing the new pipe system may result in the crossing of sensitive areas such as the State Capitol Grounds and Southside Park. In-street pipe replacement would occur in front of the City Convention Center, within William Land and Curtis Parks, and U.C. Medical Center. In addition, piping would be placed within the streets of residential, commercial, office, and school areas throughout the service area.

The separate sanitary system would be installed by way of conventional trenching and trenchless technology. The conventional method of pipe placement involves digging open trenches and placing new pipes in the ground. This trench method would be the most disruptive form of replacement especially in heavily urbanized areas, stemming from the need to reserve the open trench area and adjoining area for periods of time thereby disrupting traffic and potentially destroying the root systems of nearby street trees and possibly some subsurface cultural resources. The alternative method to the trench method is the "trenchless" method of directing new piping into the system for a single area. A number of trenchless methods exist including "microtunnelling," "directional drilling," and "fluid jet cutting."

The proposed separation would require a new wet-well and 190 MGD pumping facility to be constructed at the Pump Station 2 facility. A "wet-well" is the below ground sump that receives flows from the conveyance system. These flows are then pumped out of the wet-well by pumps for transport. The wet-well is located within the Pump Station 2 building. The new wet-well required as part of the proposed project will be located within the new pumping structure on-site. The new facility would include a housing structure which contains the wet-well and pumps. This new facility would be located in close proximity to the existing Pump Station 2 structure.

As mentioned earlier, the SRCSD has prepared the Sacramento Regional Wastewater Treatment Plant Master Plan (SRWTP Master Plan) and the Sacramento Sewage Expansion Master Plan (Expansion Master Plan). These plans work together to identify new facilities for wastewater treatment and disposal needs as well as future sewer capacity and expanded sewer system needs. The City has an agreement with the SRCSD to convey a maximum of 60 MGD to the SRWTP for secondary treatment and disinfection prior to discharge. The new sanitary sewer system would convey wastewater to the existing Pump Station 2 site, without surcharge and/or overflows, from which it would be pumped to the SRWTP. Stormwater runoff would be conveyed by the existing system (after rehabilitation) and discharged to the CWTP, Pioneer Reservoir, and the Sacramento River as before. However, in this case, only stormwater and not combined sewage would be discharged to the Sacramento River. In addition, initial and first flush flows would be treated at the CWTP.

Schedule

The alternative would be constructed in two major phases. The first phase is the upgrade and rehabilitation of existing infrastructure. Concurrent with the rehabilitation work would be a monitoring and collection program of additional water quality and flow data over several years to confirm the need for the sewer separation work. The second phase is the construction of a new separated sanitary sewer system.

A 27-year schedule is assumed for this alternative. This schedule represents a moderate rate of construction in which there would be at least one construction project scheduled every year throughout the 27-year period. The primary assumption used in this alternative is that average installation rate of both small-diameter and larger sanitary mains and interceptors is approximately 200 feet per day, considered an acceptable rate in the construction of collection sewers within the downtown area. This volume of work would minimize traffic and utility service disruptions due to construction activities.

A decision on the final schedule would be based on financial considerations and the monitoring information that would be collected during the initial five year period. One assumption used in preparing the schedule is that the City will defer the construction of the new sanitary sewer system for several years, during which time the water quality and flow data would be collected to confirm the need for the alternative.

Rehabilitation and repair of the existing pumping stations, Pioneer Reservoir and the combined sewer conveyance system are scheduled concurrently with this data collection and analysis period. Pending refinements to this alternative during the monitoring and data collection period, the construction of the new sanitary sewers would proceed initially from the lower, downstream portions of the CSS. This is not only preferred from a constructibility standpoint (sewer systems are generally constructed from downstream to upstream), but also allows new connections to be placed into service immediately. To receive the sanitary flows contributed by the new sewers, the sanitary sewer pumping station near Pump Station 2 must also be scheduled as one of the first components of the new sanitary sewer system to be completed. To avoid staging two major construction projects within the vicinity of Pump Station 2, the major earthwork and structural modifications to Pump Station 2 will be deferred until the construction of the new sanitary sewer pumping station near Pump Station 2.

Required Discretionary Actions

To implement the Sewer Separation Alternative, the City of Sacramento would need to consider approval of the following discretionary actions:

- *Certification of the EIR.* The City Department of Utilities, as the project proponent, is requesting acceptance of this environmental document as having been prepared in compliance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines, the City of Sacramento CEQA Guidelines and certification that the data was considered in final decisions on the CSS Improvement and Rehabilitation Plan and that the EIR is adequate and complete.

- *Obtain various CVRWQCB reviews.* The City Department of Utilities, as the project proponent, would need to request an approval to amend the existing CSS Operations Plan to account for the changes in service and facility operations; request an amendment to the existing Waste Discharge Report from the CVRWQCB; and request an amendment to the City's current municipal NPDES permit (No. CAD0082597), under Order No. 90-158 (June 22, 1990) to include the additional stormwater flows that are discharged under this alternative to the Sacramento River, heretofore covered under the existing CSS NPDES permit. In addition, the SRCSD's NPDES permit may need to be amended to account for the increased volume of flows conveyed to the SRWTP.

- *Obtain agreement with SRCSD.* The City Department of Utilities, as project proponent, would need to request an amendment to the existing City of Sacramento/SRCSD agreement covering the 60 MGD flow limitation conveyed to the SRWTP.

Related Projects

The Sacramento County Regional Sanitation District has prepared the Sacramento Sewerage Master Plan for expanding its interceptor system. The routing of these new sewers could impact the layout and scheduling for the Separate Sanitary Sewer Alternative. In addition, other major projects (refer to Chapter 6, Related Projects) identified as being considered for the foreseeable future include: 1) the construction of a new light rail extension south to Meadowview Road along the UPR corridor; and 2) the Southern Pacific/Richards Boulevard redevelopment. No single project identified here or in the Related Projects chapter is seen as slowing the development of the Sanitary Sewer System Alternative.

Sewer Separation Environmental Analysis

The following is an overview of the CEQA checklist items as they relate to the Sewer Separation Alternative. Any significant impacts or effects are analyzed in Chapter 7. Significant impacts include Water Quality, Noise, and Cultural Resources issues.

Land Use and Planning

Under the Sewer Separation Alternative the construction of a new sanitary sewer system and the conversion of the existing CSS infrastructure to a storm drainage system would not conflict with the City's General Plan or any other applicable environmental plans or policies. The proposed improvements associated with the Sewer Separation Alternative would occur within areas already designated on the City's Land Use Map for public utility uses and zoned accordingly. Although, the Sewer Separation Alternative would not help to implement all of the City's General Plan goals and policies that deal with reducing local flooding and minimizing potential public health risks. The Sewer Separation Alternative provides only minor flood control beyond the capacity of the existing system. Under this alternative, similar to the proposed project, the CSOs are reduced or eliminated and outflows to City streets are reduced. From a land use and planning perspective the Sewer Separation Alternative would not create any potentially significant impacts.

Population and Housing

Implementation of the Sewer Separation Alternative would support the existing proposed development and buildout of property within the CSS service area, but in and of itself, would not generate additional population as would a residential project, for example. This alternative would not be considered growth inducing because similar to the proposed project, the future growth within the service area is already planned for and has been approved by the City Council. The same as the proposed project, the separated system would allow this development to occur per the General Plan. This is discussed further in Chapter 8, Growth-Inducing Impacts.

Any rehabilitation to the current system would occur within areas designated for public utility uses. The new sanitary sewer system would be parallel to the existing combined system. As such, the displacement of existing housing would not be considered an impact.

Geology

The CSS service area is located within a developed area of the City of Sacramento. The Sewer Separation alternative would not involve exposing people to a potentially hazardous or unsafe situation, related to the geologic stability of the area. However, construction activities could pose some risks. The City requires that all public works projects conform to standards outlined in the City's *Standard Specifications for Public Works Construction.* These standards are designed to ensure that all structures are built to current City code and that appropriate erosion control measures are implemented during construction. In addition, the State also requires certain conditions be met in order to avoid any potentially hazardous conditions from occurring. All construction activity would conform to the applicable local, State or federal requirements and/or standards set forth in the California Code of Regulations (Title 8), the Occupational Safety and

Health Act (OSHA), the Uniform Building Code (UBC) (Section A33, Excavation and Grading), and the American Society for Testing and Materials (ASTM) standards. Similar to the proposed project, any potentially significant impacts would therefore be reduced to less than significant levels through conformance with the applicable local, State, and federal regulations. Applicable regulations are summarized in Appendix 15-3.

Water

Similar to the proposed project, the Sewer Separation Alternative would not increase the amount of impervious surface cover, therefore it would not result in an increase in the amount or rate of surface runoff. However, this alternative would involve converting the existing CSS pipelines to a storm drainage system which would not significantly alter the manner in which storm water runoff is currently collected and discharged. The amount of storm water entering the Sacramento River would not change or be significantly altered, if at all, as a result of this alternative. However, since the system would be separated, all stormwater would be discharged to the river without disinfection, unlike the No Project alternative, which would continue to disinfect both stormwater and sanitary flows.

Due to the implementation of existing regulations, potential water quality impacts related to water going directly into the river is discussed in section 7.2, Water Quality. Any dewatering activities related to construction would be minimized and there would be no significant impacts relative to the change in the quantity of groundwater, and/or direction or rate of flow, and groundwater quality. Construction of the new sanitary sewer system would involve using conventional trenching methods as well as trenchless technology. In addition, implementation of this alternative would not involve major capacity upgrades to the existing CSS pipelines; therefore, flood control is only slightly improved over the existing system. Groundwater is not a source of public water supply in the City of Sacramento. However, groundwater is used in lieu of treated water for park irrigation. The same as the proposed project, implementation of federal, State and local regulations would minimize any potential impacts on groundwater.

Air Quality

The Sewer Separation Alternative would not create any potentially significant long-term air quality impacts. Implementation of this alternative includes the same components as discussed under the proposed project. This alternative would therefore also reduce odors and not create any additional odors. This is considered a beneficial impact.

The magnitude of the construction activities to install a parallel pipeline for the sanitary sewer is substantially greater than the construction necessary for the proposed project. Therefore, the short-term emissions of particulate matter during construction work would be greater than the proposed project. These emissions would be controlled through existing City and SMAQMD regulations. It is anticipated that construction activities could involve ground disturbance of unpaved areas. Compliance with City requirements would reduce any potentially significant short-term construction-related impacts to less than significant levels although the duration of these emissions would be substantially longer than the proposed project.

Transportation/Circulation

The Sewer Separation Alternative would not, in and of itself, generate an increase in traffic, therefore any long-term traffic impacts would be considered less than significant. Implementation of this alternative would, however, significantly impact traffic during the short-term construction activities; more than the proposed project. Installation of the new sanitary sewer system would involve digging a parallel trench to the CSS in street right-of-ways. This activity would be considered the most disruptive activity because the trenches would need to remain open for a period of time. If deemed feasible, a trenchless method of directing new piping into the system would be utilized. It is important to note, during short-term construction activities the contractor would be required to comply with the City's adopted *Standard Specifications for Public Works Construction*, as well as prepare a traffic control plan in accordance with the Work Area Traffic Control Handbook (WATCH) program. Compliance with City requirements would reduce any potentially significant short-term construction-related impacts to less than significant levels.

Biological Resources

As mentioned earlier under Geology, the CSS service area is located in an urban environment. No sensitive habitat, wetlands or designated natural communities exist. Any construction would be limited to existing roadways and pumping facilities. The Sewer Separation Alternative would not contribute to any changes in the current treatment capacity of the system. Similar to the proposed project, this alternative would eliminate the CSOs entering the Sacramento River during the wet season; thereby, providing a direct benefit to the health of the public and aquatic biota.

As discussed under the proposed project, any construction activities associated with this alternative, may adversely impact the existing root systems of the mature street trees. The new sanitary sewer system would be installed parallel to the existing system. Installation of this new system may result in the crossing of sensitive areas such as the State Capitol Park and Southside Park. This may result in the destruction of root systems of adjacent trees. Under the City's Tree Ordinance, prior to the removal of any tree or any activity that may injure an existing street tree, approval is required by the Director of City Neighborhood Services (refer to Appendix 15-3). In addition, in the event tree pruning is required this would occur during the non-breeding season to avoid disturbing potential nest sites of any migratory birds. Compliance with existing City requirements would reduce any potentially significant biological impacts to less-than-significant levels.

Energy and Mineral Resources

The Sewer Separation Alternative includes a majority of the improvements discussed in chapter 4, Project Description, such as upgrading existing pumps and constructing a new 190 MGD pumping station. Similar to the proposed project, these improvements would increase the overall energy consumption over current levels, but this increase in energy would not be carried out in a wasteful or inefficient manner. Therefore, an increase in energy usage would be considered less-than-significant. Any energy consumed during short-term construction activities would not create any potentially significant impacts to the existing energy supply.

Hazards

The Sewer Separation Alternative involves converting Pioneer Reservoir into a stormwater management facility which may entail using chemical sodium hypochlorite to provide disinfection. Before treated water is released into the Sacramento River it must first be dechlorinated to remove all traces of disinfectant. The chemical, sodium bisulfite would be used to remove all residual traces of disinfectant. The chemicals would be stored in 10,000 gallon above ground tanks. One component of the Sewer Separation Alternative includes a detailed investigation to determine if Pioneer Reservoir would be considered feasible for a stormwater management facility. The potential water quality impacts including stormwater to the river associated with this alternative are evaluated in section 7.3, Water Quality. Similar to the proposed project, implementation of this alternative would result in the elimination of combined sewer outflows (CSOs) to the Sacramento River and contribute to a reduction in outflows to City streets. Cal/OSHA requires a site specific health and safety plan be prepared to ensure the protection of workers from hazardous materials and substances during construction. In addition, the City must implement and comply with existing State and federal regulations, therefore, any potentially significant impacts related to the safety of public health and the use and storage of hazardous materials would be reduced to less than significant levels.

Temporary construction activities related to the Sewer Separation Alternative may interfere with emergency response plans or routes within the CSS service area, in part by closing portions of streets and intersections. This alternative would require trenching a parallel line to the CSS which may create more of a construction-related interference to emergency routes. The City's *Standard Specifications for Public Works Construction* addresses this issue. The guidelines require that the contractor furnish, install, and maintain all warning signs and devices necessary to safeguard the public, and to provide for safe routing of vehicular and pedestrian traffic during construction. In addition, the contractor would be required to comply with the WATCH program. Based on compliance with existing City regulations, potentially significant short-term construction impacts would be reduced to less-than-significant levels (refer to Appendix 15-3).

Noise

Similar to the proposed project, long-term noise impacts associated with the Sewer Separation Alternative would be considered negligible related to project operations because the engines and motors would be housed within existing structures. Under the Sewer Separation Alternative, short-term construction activity associated with the new sanitary sewer system could create considerable short-term noise impacts due to concurrent construction activities to install a parallel pipeline to the CSS and rehabilitation of the existing pipeline. However, City Code Chapter 66, "Noise Control", exempts activities including erection, excavation, demolition, alteration or repair of any building or structure between certain specified hours. Construction activities would not exceed accepted vibration standards. This issue is evaluated further in section 7.3, Noise.

Public Services

Similar to the proposed project, implementation of the Sewer Separation Alternative would not result in an increase to the projected or existing population of the CSS service area or region.

Therefore, the demand for government services including new schools, fire and police protection would not change. However, there would be a greater coordination effort required under this alternative due to the extensive construction activities. The long-term maintenance of the facilities would not increase with the exception of maintaining a new sanitary sewer pipeline. A majority of the project components were developed to reduce the level of maintenance and operation that is currently required at the existing facilities. The City's *Standard Specifications for Public Works Construction* require that any damage to public roadways as a result of project construction would be repaired by the contractor.

Utilities and Service Systems

As mentioned earlier, the same as the proposed project, the Sewer Separation Alternative does not include increasing the population within the CSS service area. Therefore, implementation of this alternative would not result in the need for any new utility or service systems. The construction of a new sanitary sewer system would temporarily disrupt sewer and stormwater drainage systems within the service area and may create considerable utility disruptions. In contrast to the proposed project, this alternative assumes that all combined sewer backyard easements would be abandoned and the new sanitary sewer installed in the street right-of-way. The City is a member of the Underground Services Alert (USA) one-call program. The contractor is required to contact USA 48 hours prior to any excavation work. USA would locate and identify all existing utility lines and services in the area. In addition, the City would implement procedures developed by the Joint Utilities Coordination Committee that assist cities and utility companies in coordinating public improvement projects to avoid potential conflicts. All contractors are required by the City to implement these procedures, therefore the potentially significant impacts to utilities and service systems would be reduced to less-than-significant levels.

Aesthetics

Under the Sewer Separation Alternative the construction of a new sewer system and proposed changes to the current system involve underground pipelines or rehabilitating facilities within existing structures. Similar to the proposed project, the construction of new tanks, administration building and modifications to the roof to install equipment hatches would be subject to review by the City's Design Review and Preservation Board if any of these modifications were proposed on historically significant structures or blocked the view of any structure. In addition, any new lighting would be shielded to avoid disturbing adjacent uses. Therefore, no potentially significant visual or aesthetic impacts would occur due to implementation of this alternative.

Cultural Resources

The improvements proposed to the CSS under the Sewer Separation Alternative are very similar to the proposed project with the exception of constructing a new sanitary sewer line. Any modifications or changes to buildings or structures would be subject to review by the City's Design Review and Preservation Board and/or formal recordation with the State Office of Historic Preservation. The City's original sewer system is 60 to 100 years old and would be replaced under this alternative. The treatment of cultural resources is governed by federal, State, and local laws and regulations. Any modifications or changes to any buildings or structures determined to be of significant cultural or historic merit would be required to conform with applicable laws and regulations. This issue is evaluated further in section, 7.4, Cultural Resources. Any significant impacts would be reduced to less than significant through compliance with appropriate measures.

Recreation

As mentioned earlier, similar to the proposed project, the Sewer Separation Alternative would not generate an increase in population that would increase the demand for recreational facilities, nor would implementation of this alternative affect existing recreational resources in the long-term. Construction activities would impact Capitol Park and Southside Park, these short-term construction-related disruptions to park activities would not be considered an adverse impact on recreational uses since the City's *Standard Specifications for Public Works Construction* requires that any damage to existing park facilities resulting from construction activities would be repaired by the contractor. Therefore, no potentially significant adverse impacts would occur to recreational facilities due to implementation of this alternative.

ENDNOTES

1. County of Sacramento, Sacramento Regional Wastewater Treatment Plant Master Plan, Draft EIR, April 1996. p. 7-15.

5.3 ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER ANALYSIS WITHIN THE EIR DISCUSSION

5.3 ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER ANALYSIS WITHIN THE EIR DISCUSSION

INTRODUCTION

The following section identifies those alternatives previously considered but dismissed by the City and identifies the justifications for their dismissal.

Between 1990 and 1992 numerous alternatives were evaluated by the City of Sacramento Department of Utilities in order to determine the most cost effective way to address project objectives, City drainage goals, and federal and State requirements. These alternatives consisted of the following: sewer separation; large underground tunnels; and offline storage and treatment facilities.

Each of these alternatives was evaluated for the ability to achieve the two major requirements of the Central Valley Regional Water Quality Control Board (CVRWQCB) Cease and Desist Order (CDO) (i.e., elimination of outflows and control of combined sewer overflows [CSOs]). A cost/benefit analysis was used to determine the most cost-effective individual projects to implement. Benefits were defined as the expected annual reduction in street flooding.

Several additional alternatives were evaluated in order to comply with EPA's National CSO Control Policy, the NPDES permit, the Clean Water Act and the City's adopted goals for storm drainage systems. These additional alternatives considered a full range of structural and non-structural components.

Several combinations were evaluated, including increasing the pump capacity at Pump Stations 1/1A and 2 in conjunction with additional storage and/or treatment capacity downstream of the Pump Stations to avoid increasing CSOs. In addition, several alternatives for improvements within the CSS service area upstream of the two pump stations were considered. These included construction of ICALS with regional storage facilities; construction of ICALS with partial sewer separation in selected areas only; construction of ICALS with regional storage facilities and relief sewers; among others.

The CDO required that the City prepare a technical report documenting the results of the combined sewer improvement and implementation analysis. This report is summarized below.

Combined Wastewater Control System Phase 2 Detailed Technical Report

The *Phase 2 Detailed Technical Report,* prepared by HDR Engineering, Inc., was submitted to the RWQCB in July, 1991. As the Phase 2 work was undertaken by the City, it became apparent that a large number and variety of alternative projects and plan combinations were potentially available for solving the overflow and flooding problems in the CSS service area. In addition, a wide range of design storm criteria could be applied in the sizing of projects. Therefore, the City Utilities Department petitioned the RWQCB in April 1991 to allow the City to determine the least-cost alternative for a single "target" set of criteria as the objective for the July, 1991 submittal. The results and cost information were then used to determine a reasonable range of design criteria for evaluation in a subsequent phase, and allow for the development of a cost/benefit curve. The RWQCB concurred that a phased approach was the appropriate course of action.

Alternative Improvement Plans

The Phase 2 Study used a step-wise process for determining flooding and CSO problems, and then developing alternative improvement plans to solve these problems. Alternative improvement plans (i.e., combinations of projects) were sized to a 10-year, 6-hour design storm for flood control purposes and to a 1.5-year storm for CSO control and treatment. The latter criterion approximates an allowance of one CSO per year on an average annual basis. These criteria are referred to as the "10/1 Criteria."

First Level Screening of Alternatives

Flood and CSO control alternatives were first identified during Phase 1 (see *Combined Wastewater Control System, Technical Overview Report*, October, 1990). These alternatives and potential candidate project sites for locating new storage and treatment facilities and for aligning new conveyance systems are summarized in Table 5.3-1. This information was presented to the City Utilities Department at an April 1991 project coordination meeting. This meeting served as a "pre-screening" workshop. Alternatives, such as adding parallel conveyance to existing sewers or replacing them entirely, upgrading the existing pumping capacity at Pump Stations 1/1A and 2, additional treatment facilities and sewer separation were retained for further consideration in the Phase 2 Study. The first level screening was completed based on feasibility factors other than cost.

Based on discussions at that meeting, several sites were dropped from further consideration. Use of the Old City Landfill was considered impractical due to difficulties with structural foundations on the site and because of development plans along the American River Parkway. Development within McKinley Park, William Land Park and Oak Park was discounted as impractical due to potential opposition from local residents regarding traffic, noise, destruction of trees, disruption of park activities, and other construction-related impacts. The Meadowview Wastewater Treatment Plant (MWTP) site, which was used in the 1950's and 1960's before the regional system was implemented and is now defunct, was considered impractical for use as a storage site but was retained for consideration as a treatment plant site.

Second Level Screening of Alternatives

Following completion of the first level screening, an analysis was made to determine conveyance improvements required to provide flood protection for the 10-year, 6-hour event. These conveyance improvements consisted of providing additional sewer system capacity so as to keep the wastewater in the sewer system, such that the 10-year storm could be conveyed without flooding. To achieve this objective, nearly every pipe in the system would need to be replaced with a larger size or have a new parallel sewer installed. The general approach was to replace

TABLE 5.3-1

PHASE 1 FLOOD AND CSO CONTROL ALTERNATIVES AND CANDIDATE PROJECT SITES

Storage
New Storage Facility Adjacent to Pioneer Reservoir
Deep Tunnels for Storage and Conveyance
Storage Tank/Reservoir Near Hughes Stadium and Union Pacific Railroad Yard
Storage Tank/Reservoir Near Executive Airport
Storage Tank Beneath William Land Park Near Pump Station 2
Storage at the Regional Wastewater Treatment Plant
Storage at the Closed City Landfill Site
Storage at Granite Park
Storage at Oak Park
Storage at UCDMC
Treatment
Treatment Facilities Near Pump Station 1A/Pioneer Reservoir Area
Additional Treatment Facilities at CWTP
Additional Treatment Facilities at SRWTP
Treatment Facilities at Old Meadowview WTP Site
Conveyance
Add Parallel Gravity Lines or Replace Existing Interceptors
Add Pumping Stations and Force Mains
Convert 42nd Street 54-Inch Interceptor to a Force Main
Expand the Capacity of Pump Station 2
Lower Hydraulic Grade Line at Pump Station 1A
Separation
Complete Separation with New Storm Drainage System
Richards Boulevard Area (North Core)
Northeast Area Adjacent to Existing Separated Areas
Larkin Road Area Adjacent to Sacramento River

SOURCE: City of Sacramento Combined Wastewater Control System, Phase 2, Detailed Technical Report, HDR Engineering, Inc., et al., July 1, 1991.

rather than parallel laterals/mains wherever possible. This analysis provided peak flows and volumes of combined sewage needed in the analysis of all other alternatives.

Storage volumes needed to provide flood control for the 10-year event at various locations amount to between 50 and 75 MG. The analysis indicated that this volume could be provided by one of a combination of candidate project sites within the immediate vicinity of the CSS service area. Also, if it was assumed that the 60 MGD allowance to the Sacramento Regional Wastewater Treatment Plant (SRWTP) was available immediately following a storm event, then the volume of stored wastewater could be returned to the existing collection system. Given this assumption, constructing a new dedicated pumping and conveyance system (from the storage site to the SRWTP) for the new storage sites was not necessary to control flooding for the 10-year event, because sufficient time was assumed to exist between successive rainfall events to allow transfer of stored wastewater to the existing conveyance system. Since flood control storage sites could be located within the immediate vicinity of the CSS service area, the more remote sites (such as Granite Park, Executive Airport, Campbell Soup Company, MWTP and the SRWTP) were viewed as having higher development costs. Not only would they have the cost of constructing the storage facilities, but also the cost of conveying the wastewater to the site. These remote storage sites could only be cost effective if sites closer to the service area (Pioneer Reservoir, the Union Pacific Railroad [UPR] yards, and UC Davis Medical Center [UCDMC]) were not available. Therefore, the more remote candidate project storage sites identified during the Phase 1 Study were determined to not be cost-effective and were eliminated from further consideration during Phase 2.

Remaining Alternative Flood Control Plans

Alternative improvement plans remaining after the secondary screening were developed in sufficient detail (and described below) to estimate total project costs. The remaining alternative flood control improvement plans are listed in Table 5.3-2.

Alternative A - Conveyance Improvements for Flood Control

Alternative A consisted of an improved conveyance system (collection system, laterals/mains, interceptors) such that the 10-year storm could be conveyed without flooding. To achieve this objective, nearly every pipeline in the system had to be either replaced with a larger size and/or a new parallel sewer installed. The general approach was to replace rather than parallel laterals/mains wherever possible.

Alternative B - Tunnel System Alternative

Alternative B consisted of an interconnected network of circular tunnels constructed at elevations well below existing building foundations and buried utilities. Wastewater surcharging the existing collection system during wet weather is transferred into the network of consolidation conduits through new diversion structures. The consolidation conduits would convey the wastewater to the tunnel system drop shafts. The proposed tunnel network would drain by gravity towards Pump Station 2 where the tunnel terminates with a subterranean pumping station. The pumping

TABLE 5.3-2

REMAINING ALTERNATIVE FLOOD CONTROL IMPROVEMENT PLANS FOLLOWING SECOND LEVEL SCREENING

Alternative	Description
A	Conveyance Flood Control Alternative
B	Tunnels Beneath the Combined Sewer Study Area with a Network of Connecting Consolidation Conduits
C	Tunnels in Conjunction with Storage Reservoir at UCDMC
D	Storage at UCDMC and Pioneer Reservoir Sites
E	Storage at Union Pacific Railroad (UPR) Site
F	Storage at UPR and Pioneer Reservoir Sites
G	Storage at UPR and UCDMC Sites
H	Storage at UPR, Pioneer Reservoir, and UCDMC Sites
I	Complete Separation of Storm Sewer and Sanitary Sewer Systems

SOURCE: City of Sacramento Combined Wastewater Control System, Phase 2, Detailed Technical Report, HDR Engineering, Inc., et. al., July 1, 1991.

station would transfer stored wastewater from the tunnel to Pump Station 2 during periods of off-peak flow. Firm capacity of this pump station would be 60 MGD.

A geotechnical investigation was conducted within the CSS service area to establish the character of the soils at depths of up to 120 feet below the surface. The results of that investigation indicated a mixture of thin layers of unconsolidated saturated silts and clays with some sands. Based on these findings, a tunnel depth of approximately 50 feet below ground surface was recommended. The required tunnel storage volume was estimated to be 55.8 MG. This would be provided with 14- to 20-foot diameter tunnels, with a length of 8.9 miles (47,000 feet).

Alternative C - Tunnel Alternative with Storage at UC Davis Medical Center

Alternative C is similar to Alternative B, with the exception that the segment of the tunnel alternative crossing Highway 99 serving the southeast quadrant of the CSS is deleted. Combined sewage flows in the Upper Donner Trunk area are handled by both the existing conveyance system and new consolidation conduits. The new consolidation conduits would receive the overflow from the existing conveyance conduits through a system of control weirs similar to that described for Alternative B. The existing collection system would be at capacity during peak flows. The new network would convey flows in excess of that maximum capacity by gravity to a 9.8-MG above-ground storage facility at the UCDMC site. This would include a new 202 MGD pumping station to lift the wastewater into the storage reservoir.

This alternative was configured to see if the cost of the tunnel system could be offset somewhat by above ground storage. The result of the analysis showed that inclusion of an above ground storage facility with the tunnel alternative increased the overall project cost due to the additional pumping station cost.

Alternative D - Storage at UCDMC and Pioneer Reservoir Sites

Alternative D makes use of two above-ground storage reservoirs, one located at the UCDMC site and the other at a site just to the north of the existing Pioneer Reservoir. A new network of consolidation conduits would be used to collect flows in excess of the maximum capacity of the existing conveyance system and deliver wastewater to these two storage facilities. Flows from the Alhambra Trunk and the downtown area would be conveyed to the Pioneer Reservoir site where a new 30 MG storage reservoir would be provided in addition to the existing 23 MG facility. A new 505 MGD pumping station would be required in addition to the existing 85-124 MGD station at Pump Station 1A. Flows from the Upper Donner Trunk would be conveyed to a new 18 MG reservoir at the UCDMC site constructed with a new 265 MGD pumping station. Flows in the southwest quadrant of the CSS service area (south of Highway 50/Interstate 80 and west of Highway 99) would be conveyed to Pump Station 2 by means of an upgraded network of laterals, mains, and interceptors for ultimate delivery to the SRWTP and the City of Sacramento's Combined Wastewater Treatment Plant (CWTP).

Alternative E - Storage at UPR Site

Alternative E makes use of a single above-ground 52.2 MG storage reservoir and 870 MGD pumping station located at the UPR yard. It was assumed that the storage reservoir and pumping station would be sited at the northern end of the yard, north of the 114-inch Donner Trunk. A new network of consolidation conduits would be used to collect flows in excess of the maximum capacity of the existing conveyance system from Alhambra Boulevard, downtown, Land Park Drive, and the Upper Donner Trunk areas for interim storage at the UPR yard. Flows in the Riverside Drive area would be conveyed to Pump Station 2 by means of an upgraded network of laterals, mains, and interceptors for ultimate delivery to the SRWTP and the CWTP.

Alternative F - Storage at UPR and Pioneer Reservoir Sites

Alternative F makes use of a pair of storage reservoirs, one located at the UPR yard and the other at the Pioneer Reservoir site. The 24.5 MG UPR facility with 364 MGD pump station receives flows in excess of the existing conveyance capacity from the Upper Donner Trunk and from the Land Park Drive area. The new 28 MG Pioneer facility with a new 516 MGD pumping station would receive flows from Alhambra Boulevard and downtown. Flows in the Riverside Drive area would be conveyed to Pump Station 2 by means of an upgraded network of laterals, mains, and interceptors for ultimate delivery to the SRWTP and the CWTP.

Alternative G - Storage at UPR and UCDMC Sites

Alternative G makes use of an above-ground storage reservoir at the UPR yard and the UC Davis site. The 35.2 MG UPR storage facility with 645 MGD pump station would receive flows in excess of the existing conveyance capacity from the downtown area, Alhambra Boulevard, and from the Land Park Drive area. The new 18 MG UCDMC facility with new 264 MGD pumping station would receive flows from the Upper Donner Trunk area. Flows in the Riverside Drive area would be conveyed to Pump Station 2 by means of an upgraded network of laterals, mains, and interceptors for ultimate delivery to the SRWTP and the CWTP.

Alternative H - Storage at UPR, Pioneer Reservoir, and UCDMC Sites

Alternative H makes use of three storage reservoirs, one located at the UPR yard, one at the Pioneer Reservoir site, and a third at the UCDMC. In this alternative a 10 MG UPR facility with 158 MGD pump station would receive flow in excess of the existing conveyance capacity from a portion of the Upper Donner Trunk and from the Land Park Drive area. A new 28 MG Pioneer facility with new 506 MGD pumping station would receive flows from Alhambra Boulevard and downtown. A new 14.5 MG UCDMC storage facility with a 258 MGD pumping station would receive flows from the remainder of the upper Donner Trunk. Flows in the Riverside Drive area would be conveyed to Pump Station 2 by means of an upgraded network of laterals, mains, and interceptors for ultimate delivery to the SRWTP and the CWTP.

Alternative I - Complete Separation of Storm Sewer and Sanitary Sewer Systems

Alternative I does not employ any storage facilities or tunnels. Alternative I was reviewed in depth in a study prepared for the City by Robert E. Young Engineers in 1988. That study recommended four new storm drainage pump stations, a new sanitary pump station, and a new storm drainage collection system. With this alternative, the existing CSS would become a dedicated sanitary collection system. New conveyance for storm drainage would be provided for the entire CSS service area. All drop inlets and other storm drainage connections would be disconnected from the existing conveyance system and reconnected to the new storm drainage sewers.

Costs for Flood Control Alternatives

Capital costs for the nine alternative flood control improvement alternatives outlined above are summarized in Table 5.3-3.

Combined CSO and Flood Control Alternatives

Combined CSO control and flood control alternatives are listed in Table 5.3-4. These alternatives were configured based on a combination of the flood control alternatives discussed in the previous section and new combined wastewater treatment/storage projects.

In developing CSO control alternatives, it was assumed that Pump Station 1A would be upgraded with its present capacity intact. In addition, it was assumed that the 130 MGD plus the 60 MGD would be delivered to the CWTP and SRWTP, respectively. The remaining peak flow rate at Pump Station 2 of 362 MGD, with a corresponding volume of 37 MG, were used in the evaluation of CSO control alternatives.

Alternative J - Combined Treatment/Storage at Pioneer Reservoir Site

Alternative J would upgrade the entire network of laterals, mains, and interceptors to prevent street flooding for the 10-year event in accord with Alternative A. The collection system would also be upgraded to assure runoff would not be prevented from entering the collection system. All collected flows would remain below the streets and be received at Pump Stations 1A, 2, and new pump stations at McKinley Park, Curtis Park, and William Land Park areas. Flows to Pump Station 1A would peak at 125 MGD. Flows to Pump Station 2 would be 552 MGD peak, with 190 MGD being delivered to the CWTP and SRWTP and 362 MGD being diverted to the existing 23 MG capacity reservoir at the Pioneer Reservoir site, and to a new 30 MG combined treatment/storage facility operated in series with the existing Pioneer Reservoir.

This new combined treatment/storage facility would be a covered reinforced concrete basin. Storm flows above the capacity of the treatment/storage facility would be spilled at Pump Stations 1A and 2. Pump Station 1A would be upgraded with a 350 MGD station capacity and Pump Station 2 would be replaced by a new 1136 MGD station, so as to handle flows from the 10-year event.

TABLE 5.3-3

FLOOD CONTROL ALTERNATIVES COST SUMMARY

Alternative	Description	Estimated Total Cost
A	Conveyance Flood Control Alternative	$737,530,000
B	Tunnel System	$575,374,000
C	Tunnel System and Storage Site at UCDMC	$616,863,000
D	Storage at UCDMC and Pioneer Reservoir Sites	$676,704,000
E	Storage at Western Pacific Railroad (WPRR) Site	$691,661,000
F	Storage at WPRR and Pioneer Reservoir Sites	$698,338,000
G	Storage at WPRR and UCDMC Sites	$702,511,000
H	Storage at WPRR, Pioneer Reservoir, and UCDMC Sites	$716,927,000
I	Complete Separation of Storm Sewer and Sanitary Sewer Systems	$718,106,000

NOTE: Costs are in 1991 Dollars.

SOURCE: City of Sacramento Combined Wastewater Control System, Phase 2, Detailed Technical Report, HDR Engineering, Inc., et. al., July 1, 1991

TABLE 5.3-4

COMBINED CSO CONTROL AND FLOOD CONTROL ALTERNATIVES

Alternative	Description
J	Combined Treatment/Storage at Pioneer Reservoir Site
K	Expand Primary Treatment Facilities at CWTP
L	Construct New Primary Treatment Facilities at Meadowview WTP
M	Construct New Primary Treatment Facilities at SRWTP

SOURCE: City of Sacramento Combined Wastewater Control System, Phase 2, Detailed Technical Report, HDR Engineering, Inc., et. al., July 1, 1991.

Alternative K - Expand Primary Treatment Facilities at CWTP

Alternative K involves expanding the existing primary treatment system of the CWTP. The existing conveyance system would be modified in accord with Alternative A. From Pump Station 2 peak flows of 362 MGD would be pumped to the CWTP through a new 108-inch force main. However, the treatment facility would require 302,000 square feet of area. This is larger than the remaining available area at the CWTP. Therefore, this alternative was eliminated from further consideration.

Alternative L - Construct New Primary Treatment Facilities at MWTP Site

Alternative L would require a collection system similarly configured to Alternative E, in which all flows in excess of the existing conveyance system capacity would be collected and diverted to the UPR yard. Inflows to the UPR yard would peak at 868 MGD for a 10-year event. Instead of a new storage facility at the UPR yard, a new 868 MGD pumping station would be constructed to transfer the wastewater to a flow control structure. This structure would divert up to 362 MGD (from the 1.5-year event) to the treatment facility at Meadowview and spill any additional flows to a new outfall at Pump Station 2. Pump Stations 1A and 2 would be upgraded to handle peak capacity flows delivered to them. The SRWTP and the CWTP were assumed to receive flows at peak flowrates of 60 and 130 MGD, respectively.

New rectangular covered primary clarifiers would be provided to treat a peak of 362 MGD at the MWTP site. The existing process units at the site would have to be demolished to make room for the new clarifiers. Flow into the clarifiers would be disinfected with detention provided within the clarifiers themselves. To conserve space on the site, a central distribution/collection channel and sludge collection gallery would be used. Sludge collected would then be pumped back into the 96-inch County Interceptor near the MWTP site for treatment at the SRWTP. Effluent from the new clarifiers would be pumped to the Sacramento River after dechlorination. A new flushwater intake structure would be constructed for use in cleaning out the clarifiers following a storm event. Odor control would also be included as a part of the process equipment.

Alternative M - Construct New Primary Treatment Facilities at SRWTP

Alternative M is identical to Alternative L except that the new primary treatment facility would be located near the SRWTP instead of at the MWTP site.

<u>Other CSO Control Alternatives</u>

Alternative B is configured to provide storage for the 10-year flood event. For CSO control, the 1.5-year event would be confined primarily to the existing conveyance system and relatively little flow would be expected to enter the new consolidation conduits designed to divert larger storm events. However, the flows from the 1.5-year event ultimately reach Pump Stations 1/1A and 2. Flows that reach Pump Stations 1/1A would be stored in the existing Pioneer Reservoir. Flows reaching Pump Station 2 which exceed the capacity of the 60 MGD SRWTP allowance, the 130 MGD CWTP capacity, and the remaining capacity in Pioneer Reservoir, would be diverted into the tunnel system at Pump Station 2 for interim storage. As a result of this ability to divert Pump Station 2 wastewater to storage in the tunnels, the tunnel alternative meets the CSO control criteria.

Alternative I is also a CSO control measure by definition in that no sanitary wastewater is allowed to spill to the Sacramento River. Since the new conveyance system would be sized to prevent flooding, this is another alternative which provides both flood and CSO control.

Additional alternatives for CSO control were not examined in the Phase 2 Study once it became clear that Alternative B provided the least cost of all the flood control alternatives investigated, and also satisfied the criteria for CSO control at no additional cost. Other alternatives for CSO control would be more expensive because of the conveyance costs associated with transporting the excess flows at Pump Station 2 to remote treatment sites.

Identification of the Least-Cost Alternative

Table 5.3-5 provides a summary of the estimated total project costs for the Phase 2 Study alternatives meeting both CSO and flood control criteria. The least cost alternative is Alternative B, with a total estimated project cost of $575,374,000.

Affordability of Least-Cost Alternative

The City Utilities Department conducted an assessment of the financial impact to the City's rate payers in financing Alternative B. The assessment was completed by estimating future monthly sewer and storm drainage fees associated with the implementation of Alternative B, and then comparing these fees to the EPA threshold affordability index for sewer-related construction projects and to 1991 sewer fees for California cities of comparable population size.

<u>Comparable California Sewer Service Charges</u>

The 1991 survey results of sewer fees for California cities and districts, of comparable population size, showed that monthly charges averaged $10.04, with the highest charge at $30.09. The survey indicated that the EPA Threshold Affordability Index was significantly higher than actual rates. The highest rate was only 67 percent of the 1991 EPA affordable fee of $45.00. The average charge was only 22 percent of the 1991 EPA affordable fee. It was concluded that in comparison to other similarly sized cities within California, Alternative B would impose unusually high monthly service charges.

<u>EPA Threshold Affordability Index</u>

In the 1970s, the EPA issued a memorandum which included an index of household affordability for sewer-related charges based upon median household income. This memorandum used an index equal to 2 percent of the median household income as being the threshold for determining financial hardship. Though this memorandum is no longer officially endorsed by the EPA, the Office of Municipal Pollution Control still uses this index as an informal guideline in reviewing mandated sewer-related expenditures.

TABLE 5.3-5

**SUMMARY OF ALTERNATIVE PLAN COSTS
FOR 10-YEAR 1-CSO DESIGN CRITERIA**

Alternative	Description	Estimated Total Alternative Cost
B	Tunnel Storage Only	$575,374,000
I	Complete Separation	$718,106,000
J	Treatment at Pioneer Reservoir Site	$759,160,000
L	Treatment at Meadowview Site	$739,377,000
M	Treatment at SRWTP	$740,846,000

SOURCE: City of Sacramento Combined Wastewater Control System, Phase 2, Detailed Technical Report, HDR Engineering, Inc., et. al., July 1, 1991.

The EPA does not consider sewer-related expenditures within the range of 1 to 2 percent of median household income to be a financial hardship. For sewer-related expenditures beyond the 2 percent level, it is recognized that affordability varies by community, depending upon a community's individual mix of public expenditures and the relative importance of the sewer-related project. A rate increase to within 3 to 4 percent of the median income is considered to be a potential financial hardship, and would allow EPA to begin to consider alternative technical solutions or relaxation of standards (e.g., effluent limitations). A threshold index for hardship of 2 percent was assumed for the City of Sacramento during the Phase 2 Study.

Alternative B exceeded the EPA Threshold Affordability Index for the two financing plans under consideration, the pay-as-you-go plan and the bond financing plan. Implementation of Alternative B would not provide the margin for additional rate increases due to capital expenditures needed to accommodate growth within the CSS service area, and/or provide an allowance for increased Operation and Maintenance (O&M) requirements attributable to these improvements, or allow for rate increases for SCRSD's treatment and/or interceptor system improvements. Therefore, while Alternative B satisfied the Phase 2 Study 10/1 Criteria, it was not considered affordable by the City Utilities Department.

Based on the affordability analysis, the City proposed to the RWQCB to undertake a Phase 3 Study to analyze specific alternatives that met a range of flood and CSO control criteria less costly than the 10/1 Criteria using a cost/benefit analysis. With this approach, a range of storm events could be used to size and cost flood and CSO alternatives, and thus identify the level of flood and CSO control which City residents could fiscally support.

Combined Wastewater Control System Phase 3 Detailed Technical Report

A *Phase 3 Detailed Technical Report* prepared by HDR Engineering, Inc., evaluated eight alternatives designed to satisfy the requirements of the RWQCB CDO. The objective of the Phase 3 work was to define a recommended plan by: (1) evaluating alternative separation projects for all pertinent benefits, including the elimination of CSO discharges and combined sewage outflows onto streets; (2) evaluating alternative flood-control oriented projects for a sufficient number of design storm criteria so that a cost/benefit curve could be used in the selection process; and (3) providing a financial analysis of alternatives meeting various design storm criteria, to determine the cost feasibility or affordability of those alternative improvement plans. The alternatives used four flood control design storms and two CSO frequency controls levels to determine costs, benefits, and rate assessments. The information presented here summarizes the Phase 3 Report.

Alternative Improvement Plans

The eight alternatives evaluated in the *Phase 3 Detailed Technical Report* are discussed in the sections below.

Separate Storm Drain

The Separate Storm Drain alternative was configured by assuming the existing CSS would remain in service as a sanitary sewer system. The new system would provide drainage for the entire CSS service area, excluding the existing separated sewer service area. Sizing of new sewers was based on conveying the 10-year design storm. New storm sewers were configured to drain to two new stormwater pumping stations located near the existing pumping facilities at Pump Station 1A and Pump Station 2. Collected stormwater would be pumped to the Sacramento River.

Separate Sanitary Sewer System

The Separate Sanitary Sewer System alternative assumed the existing CSS would remain in service as a storm drainage system. The new sanitary sewers network was assumed to parallel the existing combined sewers. The new sewers were sized to convey the estimated peak flows generated by the routing of the sanitary hydrographs. New sewers were configured to drain to Pump Station 2 for conveyance to the SRWTP for secondary treatment.

A new sanitary sewer pumping station would be required with a capacity of 110 MGD. This capacity is higher than the City's allowance of 60 MGD in the City Interceptor, which conveys the City's wastewater to the SRWTP.

Tunnels

Several tunnel alternatives were configured for the 5-, 10-, and 25-year design storm events, which required variations in tunnel diameters, storage, and discharge control. This was done to determine the sensitivity of cost to these design parameters. For the 2-year design storm, tunnels were not considered cost effective, since most of the existing CSS can convey the 2-year storm without flooding.

For the tunnel alternatives, the individual conduits were sloped to drain to terminal points near Pump Stations 1A and 2. A portion of the total inflow into the tunnels was retained within the tunnels by discharge control structures located at the ends of the tunnels at Pump Stations 1A and 2. These discharge control structures were set to retain the design CSO control volumes within the tunnels. Provisions were also included to allow diversion of Pioneer Reservoir overflows into the tunnel network for CSO control.

Tunnel pumping stations would be required to pump tunnel flows in excess of the CSO control volumes out of the tunnels to the Sacramento River. Additional tunnel pumping stations would be provided to empty the tunnels to Pump Station 2 for conveyance to secondary treatment.

Storage

Several storage alternatives were developed, consisting of three candidate sites located at the UCDMC, the UPR yard, and Pioneer Reservoir. Five combinations were considered and are listed below:

- UCDMC and Pioneer Reservoir
- UPR Yard
- UPR Yard and Pioneer Reservoir
- UPR Yard and UCDMC
- UPR Yard, UCDMC, and Pioneer Reservoir

In addition, two conveyance alternatives were configured for the 2-year design storm. These consisted of using the Pioneer Reservoir and the UPR yard for locating storage facilities, with flow delivered by upsizing the existing CSS without using side overflow diversion weirs and consolidation conduits. These two alternatives are referred to as the "2-Year Upsized CSS" alternatives.

The UPR yard and the Pioneer Reservoir are close enough to the Sacramento River that combined wastewater exceeding the volume produced by the CSO design storm would be discharged to the river. River discharge configurations were found to be lower in cost than storing the entire design storm volume at these sites. By contrast, because it was much more remote from the river, all flow (from the flood or CSO storm) to the UCDMC would be stored at that site and discharged to the existing collection system during off-peak flow conditions for secondary treatment.

Overflow from the existing Pioneer Reservoir would be diverted back into the network of consolidation conduits for the 5- and 10-year alternatives in order to meet CSO control objectives. The exception would be for alternatives that include a facility at Pioneer Reservoir. For the 2-year alternatives, CSO control would be provided either by storage at the Pioneer Reservoir site and/or by storage at the UPR yard. A diversion structure would be located on the existing Donner trunk at the UPR yard to divert stormwater flow into the facilities.

Controlling the 5-year CSO design event did not require any additional storage except for those alternatives using the UCDMC. At this site, storage would be required for flood control. For all other alternatives, the 5-year CSO storm would be completely retained in Pioneer Reservoir with the CWTP operational and full use made of the available 60 MGD capacity to the SRWTP.

<u>Treatment</u>

The treatment alternatives considered four sites: Pioneer Reservoir, UPR yard, MWTP, and the SRWTP. Conveyance to the MWTP and the SRWTP sites would be provided by a pumping station at the UPR yard and a long force main connecting the pump station to the treatment sites.

For the treatment alternatives, flood control for the 2-, 5-, and 10-year design storms would be provided by upgrading the existing CSS and/or providing a network of weirs and consolidation conduits to divert flows to the treatment sites. These alternatives also considered storage at the UCDMC yard for flood control. Treatment facilities would be sized to control the 1-year CSO design storm. Flows in excess of that required for CSO control would be pumped to the Sacramento River without treatment.

Inflow Control

The Phase 3 study included a review of the feasibility of inflow control as an alternative to upsizing the existing conveyance system to control outflows. The Inflow Control alternative restricted stormwater inflow into the CSS, such that gravity flow conditions were maintained. This would serve to control surcharging and subsequent outflows to streets and structures during storm events.

Inflow control was accomplished by installing flow restriction devices at individual drop inlets in the collection system. The consequences of these drop inlet modifications are to increase the amount of runoff remaining on the City streets during a storm event. To handle the additional runoff in the streets, modifications to intersections would need to be made. These would consist of constructing mounds of berms at the intersections that act to retain or impound a portion of the runoff in the streets. This provides surface detention of the runoff and affords some degree of runoff control. This alternative was rejected by the City because it would exacerbate local flooding of streets, which is already a significant issue. Control improvements for CSOs were, therefore, not evaluated.

Localized Flooding Improvement Alternative

The City Utilities Department staff developed an alternative that provides limited flood control for six areas in the CSS with a high incidence of flooding. This alternative was developed in an attempt to determine whether improvement costs could be reduced by focusing on key problem areas in the CSS. Control improvements for CSOs were not evaluated because of their apparent limited benefit relative to their costs. This alternative used a diversion and consolidation conduit system, similar to the other alternatives, to draw off excess flows from the existing sewer system. These conduits lead to underground storage facilities that consisted of parallel 12-foot diameter pipes.

Baseline Rehabilitation Alternative

This alternative represented the minimum that would be required to keep the existing facilities and the conveyance system reliable. No outflow, local flood, or CSO control improvements were included in this alternative.

Least-Cost Alternatives

The least-cost alternatives were identified for each of the 2-, 5-, and 10-year flood control design storms and for both the 1-year and 5-year CSO control storms. Tunnel alternatives were considered the least-cost alternatives for the 5-year and 10-year design storms for both CSO control levels. For the 2-year event, treatment at the Pioneer Reservoir site was the most cost-effective alternative for the 1-year CSO control design storm. For 2-year flood control and 5-year CSO control storm, the least-cost alternative was to simply upsize the existing CSS. Of the two separation alternatives, the least-cost was the Separate Sanitary Sewer alternative.

Affordability of the Least-Cost Alternatives

The basic approach to the affordability analysis was to compare generalized increases required in citywide residential sewer fees to an EPA Threshold Affordability Index, as an indicator of the severity of rate impacts.

Using the 2 percent index as a guide, the results of the analysis showed that the Baseline Rehabilitation Alternative, the alternatives for 2- and 5-year flood control, and the Separate Sanitary Sewer alternative have estimated residential fees that were less than the EPA Threshold Affordability Index and were judged to be affordable by the guidelines. The analysis did not, however, include the rate impacts of other large capital costs that the City has been considering. All of the alternatives became less affordable when these costs were factored in. In addition, the alternatives for 10- and 25-year flood control, all significantly exceeded the EPA threshold index.

Affordability analyses were also performed for shorter construction periods. All of the alternatives become less affordable as the construction period was shortened. The most important result from the analysis for the shorter period was that the relative affordability of the least-cost alternatives remained the same (i.e., all the projects become less affordable or more affordable as the construction period was shortened or lengthened, respectively).

Benefit/Cost Analysis

A benefit/cost analysis was prepared for each of the least-cost alternatives. The purpose of the analysis was to select a recommended alternative for the CSS based on a benefit/cost comparison for controlling outflows, CSOs, and flooding within the CSS service area. The benefit/cost analysis was based on the RWQCB Cease and Desist Order No. 90-198 and local flooding in the streets during wet weather. The analysis focused on three criteria, in order of importance: (1) outflow control; (2) CSO control; and (3) flood control.

The recommended alternative in the Phase 3 Report is the Separate Sanitary Sewer alternative. The Separate Sanitary Sewer alternative is the only improvement plan that ensures all system outflows would be controlled during wet weather and that all CSOs would be eliminated.

<u>**CSS Alternative Analysis Study Project**</u>

The Phase 3 Study recommended that the City separate the existing combined sewers and construct a new separate sanitary sewer system. This Separate Sanitary Sewer System would eliminate outflows and CSOs, but would not alleviate existing local flooding problems in the CSS area.

One of the several alternatives evaluated during the Phase 3 Study was Inlet Control. As a stand-alone option, Inlet Control was not considered feasible. City staff, however, considered that the initial findings regarding the Inlet Control alternative were favorable. The City informed the RWQCB of their intentions to investigate the Inlet Control alternative in combination with other improvements in more detail, as part of an overall plan to mitigate outflows and CSOs and to improve flooding within the CSS area.

The City, therefore, initiated the Alternative Analysis Study Report. The primary objective of the study was to develop an alternative to the earlier proposed sewer separation project. This alternative would need to address the items raised in the CDO, and also raise the level of flood protection within the CSS area to newly defined levels. This alternative was documented in the CSS Alternative Project Report prepared by Harza Environmental Services in June 1995. The information presented here summarizes the Alternatives Analysis Study Report.

Major Options Evaluated

Five major options were developed and evaluated in detail by the City. Each option was developed using the Sacramento SWMM computer model to identify potential facility arrangements and sizes. Preliminary costs of all options were then computed and compared. Potentially viable options were then subdivided into phases and further compared on the basis of the expected annual flood reductions for the entire project and for the individual project phases. As a final measure, each potentially viable option was also sized to accommodate a 2- and 5-year rain event and the capital costs for the modified option developed.

<u>Option 1: Inlet Control Coupled with Underground Storage</u>

Option 1 used the entire existing CSS to convey both sanitary sewage and stormwater runoff from all areas up to the capacity of the sewers. Excess flows which could not be accommodated would be stored in underground detention basins or regional storage systems and gradually released to the sewers after the storm event as sewer capacities became available. Inlet flow restrictors are used to limit stormwater inflows into the sewers so that the sewer capacity was not exceeded under any circumstances. This would prevent outflows and limit CSOs.

For this option, approximately 16,900,000 cubic feet of storage would be required to accommodate the excess flows which could not be handled by the existing sewers. There are few site opportunities within the CSS service area to construct such a regional storage system. Due to these reasons, it was concluded that the Inlet Control with Underground storage was infeasible as a stand-alone option, but could be considered as part of a hybrid.

<u>Option 2: Inlet Control Coupled with Partial Sewer Separation</u>

Option 2 would use the existing combined sewer to convey sanitary flows from all tributary areas plus stormwater flows from a limited, well-defined area. A new storm sewer system would be constructed to collect and convey stormwater from other areas with sanitary flows conveyed in the existing system; thus, the term "partial separation." Inlet flow restrictors are used to limit stormwater inflows into the sewers that remain combined so that their capacities are not exceeded. This would prevent a surcharge of the sewers and eliminate outflows of combined sewage to City streets and CSOs to the Sacramento River.

Sacramento SWMM model simulations confirmed that the existing CSS could receive sanitary flows from the entire service area plus stormwater flows from approximately 3,450 acres out of a total of 7,000 acres. It was also determined that for the sewers in the remaining CSS areas to function effectively, with maximum use of existing sewer capacities, it was not possible to identify a single 3,450-acre block that could remain combined. Rather, combined sewers would tend to be adjacent to trunk sewers, with upstream areas served by smaller diameter street sewers that were separated.

Option 2 would include the following facilities:

- A trunk storm sewer system with approximately 136,000 feet of sewers with diameters varying 24 to 168 inches;
- Approximately 50 MG of in-line storage;
- A 350 MGD stormwater pump station near Pump Stations 1/1A to discharge intercepted flows from the separated area to the Sacramento River;
- Improvements to the local combined sewer collection systems in approximately 160 drainage basins; and
- Local storm sewer systems to serve some 140 basins which are to be separated.

Option 3: Inlet Control Coupled with Storage and Relief Sewers (ICALS)

Option 3 uses a combination of the least-cost aspects of inlet control coupled with local and regional storage and relief sewers, in some areas, partial sewer separation with storm or sanitary sewers in other areas and relief combined sewers in yet other isolated areas. Under this hybrid option, the existing CSS is used to convey flows up to its capacity. Excess flows are stored in understreet or regional storage systems where feasible and/or collected and conveyed by new relief sewers where available storage opportunities are insufficient. In effect, in areas where new storm sewers are to be constructed, the sewer system would be separated and all storm flows diverted to it, with sanitary flows conveyed by the existing system. In some areas where specific bottlenecks are identified in the existing CSS, relief sewers would also be provided, which would be designed to serve as conveyance and in-line storage facilities. In general, it was noted that sewers in upstream areas could either be separated or relief combined sewers depending on the specific characteristics of the local system and the capacity of the receiving sewer. In the case of this option, inlet flow restrictors would be used to limit stormwater inflows into the combined sewers so that their capacities are not exceeded, thereby eliminating outflows and limiting CSOs. It was also noted that in order not to increase the frequency of CSOs under this option, the proposed downstream facilities, including the pump station, could only be used when the 5-per-year CSO storm event was exceeded. In smaller events, the additional facilities would store excess flows until after the storm.

Option 3 would require the following facilities:

- Total underground storage of 6,500,000 cubic feet (approximately 50 MG) throughout the CSS area;

- Two regional near surface storage sites with a total volume of approximately 270,000 cubic feet (2.5 MG) were considered feasible in this option.

  - The UCDMC site at 65,000 cu. ft. (approximately 0.5 MG) or an alternative using in-line storage systems to replace the regional facility at this site, if not feasible;

  - The UPR yards at 200,000 cu. ft. (approximately 1.5 MG).

- A new relief trunk sewer system consisting of approximately 31,000 feet of sewers with diameters varying from 18 to 114 inches;

- Approximately 415,000 cubic feet (3.1 MG) of in-line storage;

- A 10 MGD pump at Pump Station 1/1A for dewatering the in-line storage. No additional pump capacity was assumed at Pump Station 1/1A because the proposed relief sewers would provide all conveyance improvements necessary to allow for full use of Pump Station 1 pumps;

- Hybrid system improvements including underground storage and some upsized sewers in all local combined sewer collection systems, or approximately 300 basins, to minimize outflows in upstream areas.

<u>Option 4: ICALS Coupled with Increased Pumping Rates at Pump Stations 1 and 2</u>

Option 4 uses the facilities required to achieve the project objectives under Option 3 assuming increased pumping rates at Pump Stations 1 and 2. At Pump Station 1, the pump capacity was assumed to be increased from 130 MGD to 200 MGD, while at Pump Station 2, the capacity was assumed to be increased from 530 MGD to 690 MGD.

Option 4 would require the following facilities:

- Total underground street storage of 5,225,000 cubic feet (40 MG approximately) throughout the CSS area;

- Two regional near surface storage sites, one at UCDMC and the other at the UPR yard, with a total volume of 200,000 cubic feet (1.5 MG);

- A new relief trunk sewer system consisting of approximately 24,000 feet of sewers with diameters varying from 18 to 114 inches;

- Approximately 200,000 cubic feet (1.5 MG) of in-line storage; and

- Hybrid system improvements including underground storage and some upsized sewers in all local combined sewer collection systems.

Option 5: Inlet Control Coupled with Downtown Relief Sewers and ICALS Facilities in Other Areas

Option 5 was developed to use a combination of the least-cost aspects of Option 3, but with combined relief sewers in the downtown area instead of local storage systems. In this case, the existing CSS in the downtown area would be upsized, and/or replaced with modifications of some existing sewer connections, to convey all storm flows from the local tributary area. The new downtown system would eliminate existing bottleneck conditions, provide in-line storage, and convey excess storm flows from upstream areas. In all other areas, proposed facilities would be the same, as per Option 3 described above. Inlet flow restrictors would be used to limit stormwater inflows into the combined sewers so that their capacities are not exceeded, thus eliminating outflows and limiting CSOs.

Option 5 would require the following facilities:

- Total underground storage of 6,000,000 cubic feet (45 MG) throughout the CSS area;
- Two regional near surface storage sites with a total volume of 270,000 cubic feet (2.5 MG);
- A new relief trunk sewer system consisting of approximately 31,000 feet of sewers with diameters varying from 18 to 114 inches;
- Approximately 415,000 cubic feet (3.1 MG) of in-line storage;
- A 10 MGD pump at Pump Stations 1/1A for dewatering the in-line storage; and
- Hybrid system improvements including underground storage and some upsized sewers in all local combined sewer collection systems.

Conclusion

The cost of the ICALS options using both local storage and relief sewers in the downtown area was determined to be less than the cost of Option 2 because the storage and conveyance capacities of the relief sewers made up for lack of suitable sites for regional storage facilities. The ICALS options compared favorably with the $381 million cost of the Sewer Separation alternative recommended in the Phase 3 Study. The Sewer Separation alternative would eliminate outflows and CSOs, but would do nothing to improve drainage within the CSS area. The ICALS option, on the other hand, would achieve the objectives of the CDO and also improve the level of flood protection in the CSS area. The ICALS options could also be implemented in phases to reduce flooding in the site wet areas. The ICALS option would be capable of conveying all flows from up to the 10-year storm event. During the review of Option 5, it was determined that by installing new sewers in the downtown area near Pump Station 1, flows from other upstream areas could be prevented from reaching Pump Station 1, thus creating additional flooding in those areas. Consequently, the upstream facilities required to implement the ICALS Option would be inadequate to achieve the 10-year level of projection with Option 5. Option 2 proved to be more expensive than sewer separation, primarily because new storm drains would be required in approximately 3,500 acres of the CSS Service Area. It was concluded that under Option 1 there were very few sites available for regional storage in the CSS Service Area.

__Real-Time Monitoring and Control Study__

The feasibility of using real-time monitoring and control to reduce flooding and outflows within the CSS service area and the feasibility of reducing the frequency of CSOs to the Sacramento River was evaluated in Technical Memorandum No. H by Harza Environmental Services in January 1995. The information presented here summarizes that memorandum.

Typical equipment to be included in a real-time monitoring and control system for the CSS would include a Supervisory Control and Data Acquisition (SCADA) system, level monitoring stations, flow monitoring stations, rainfall gages, and remote-operated sluice gates or inflatable dams. It was estimated that the real-time monitoring and control system for the CSS would probably include at least 20 level monitoring sites, 4 flow monitoring sites, 8 rain gages, 13 control gate/dam locations, and 1 SCADA system.

Available Storage

The amount of storage available within the CSS was determined by reviewing hydraulic profiles of the major trunk sewers using the Sacramento SWMM model for various storm events. For a 5-year storm event, the hydraulic profiles indicated there was no storage available in the major trunks. For a 2-year storm event, there was approximately 260,000 cubic feet of storage, which represents 8 percent of the total volume within the major trunks. For a 5-per-year storm event, which can be described as a typical CSO storm, there was approximately 880,000 cubic feet of storage or 26 percent of the total volume within the major trunks. For the 2-year and 5-per-year storm events, the majority of the available storage was shown to be in the Donner and Land Park trunks.

Flooding and Outflows

In general, the Sacramento SWMM model indicates that significant flooding and/or outflows occur during storms larger than a 2-year storm event. The hydraulic profiles of the major trunk sewers indicates that surcharging was minimal during a 2-year event. The flooding that does occur during a 2-year or smaller storm event was due to local conditions or restrictions (i.e., low-lying areas or undersized connector pipelines).

Combined Sewer Overflows

Historically, the City of Sacramento experiences approximately five CSOs per year. The Donner, Land Park, Alhambra Boulevard, and H Street trunks have significant storage volume available for the 5-per-year storm event. Using real-time monitoring and control to utilize the storage available in these four major trunks, the total flow to Pump Station 2 could be reduced, which would reduce the frequency of CSOs to the Sacramento River. A total of approximately 680,000 cubic feet (5 MG) of storage could be used by installing gates or inflatable dams and raising the hydraulic gradelines. In terms of reducing the frequency of CSOs, this storage volume would have the equivalent effect as increasing the storage volume of Pioneer Reservoir by 5 MG.

Typical Operating Scenario

Pump Station 2 would operate as it currently does until capacity of the CWTP and the allotted capacity at the SRWTP was used (approximately 190 MGD). Prior to reaching a pumping rate of 190 MGD, operators of the real-time monitoring and control system would predict the strength of the storm event. Operators would use doppler radar to forecast the strength of the storm. Real-time rain gages would be used to calibrate the doppler radar. If the storm event is expected to be a 2-year storm event or stronger, real-time monitoring and control would not be implemented and the CSS would continue to operate as it currently operates. If the operators estimate that the storm would be less than a 2-year event, real-time monitoring and control system would be implemented.

With Pump Station 2 operating at approximately 190 MGD, real-time monitoring and control would begin operating by restricting flow in the major trunk sewers to Pump Station 2. Flow to Pump Station 2 would be restricted in an effort to maintain the flow to Pump Station 2 at 190 MGD. The amount of flow restriction for each trunk would be proportional to the available storage in each trunk. Flow would be restricted by closing or throttling sluice gates or raising inflatable dams installed within the CSS. The real-time monitoring and control system would continuously monitor levels within the CSS to anticipate potential for flooding. The gates or inflatable dams would open to relieve areas that were in danger of flooding.

Conclusion

The analysis of real-time monitoring and control revealed that it was not a cost-effective option for improving the CSS. A real-time monitoring and control system would not reduce flooding or outflows because there was no storage available within the CSS for storms larger than a 2-year event, and flooding and outflows for smaller storm events are caused by local conditions or restrictions.

A real-time monitoring and control system could be utilized to reduce the frequency of CSOs, particularly for the 2-year storm. Its effect is, however, limited to reducing CSOs to possibly 3 to 4 events per year, and CSOs are not the highest priority of the RWQCBs Cease and Desist Order. The CDO requires the elimination of outflows. The historical frequency of five CSOs per year lies within the current EPA guidelines of four to six CSOs per year. In addition, the uncertainty in operating such a system and the potential that it may aggravate flooding/outflows was seen as significantly higher using real-time monitoring and control. Raising levels in the trunk sewers using real-time monitoring and control would reduce the storage capacity within the CSS system and increase the risk of flooding/outflows.

The effectiveness of real-time monitoring and control could be enhanced by installation of additional storage as proposed with the ICALS alternative. Real-time control may be considered in the future development of the City's Long-Term CSO Control Plan after other improvements are implemented.

Northwest Regional Interceptor Flow Diversion

The SRCSD owns and operates the SRWTP and a series of interceptors that convey flow to the plant. In 1994, an update to the Sacramento Sewerage Expansion Study recommended that future flows from the Natomas area north of the American River be conveyed to the SRWTP via a new Natomas Pump Station and a new Northwest Interceptor.

The new Natomas Pump Station would pump up to 127 MGD through a 72-inch force main across the American River and along 24th Street to Deeble Street. Downstream from Deeble Street at Fruitridge Road, 19 MGD of additional wastewater would be diverted from the local collection system into a 102-inch gravity sewer that would convey the total flow to the SRWTP. These facilities are intended to handle future flows and are not scheduled for construction until 2004. As currently envisioned, these facilities would not handle flow from the CSS.

The *Phase 3 Detailed Technical Report* by HDR included a preliminary analysis of increasing the size of the Northwest Interceptor and diverting combined flows into the interceptor. The proposed alignment of the Northwest Interceptor was along the UPR right-of-way instead of 24th Street. The anticipated peak flow was 135 MGD instead of the currently planned flow of 147 MGD. HDR concluded that transferring combined wastewater to the Northwest Interceptor was most feasible if a wet weather flow storage program was adopted by the City for the CSS. The primary benefit identified was emptying the storage facilities quickly when multiple storms occurred. The report did not consider storing combined wastewater at the SRWTP or in the interceptor.

Technical Memorandum No. I identified four options for using the proposed Northwest Interceptor to store and/or convey wet weather flows from the CSS to the SRWTP. This memorandum was prepared by Harza Environmental Services in January 1995. The information presented here summarizes that memorandum.

Four Options

Four options for diverting flow from the CSS to the proposed Northwest Interceptor are presented below. Peak wet weather flow from the entire CSS was limited by the agreement the City has with SRCSD (60 MGD). If wet weather flow from the CSS was diverted to the Northwest Interceptor, the total flow would exceed 60 MGD. Storage would be provided either in the interceptor or at the plant in the Emergency Storage Basin A (ESB A).

Option 1: Storage at SRWTP

Under Option 1, the oversized 108-inch interceptor would be constructed to convey flows to the SRWTP for storage in ESB A. Either primary effluent or raw wastewater would be stored in the basin. ESB A has a concrete lining and wash down facilities. The basin would need to be cleaned after the flow was stored. ESB A has a capacity of 10 MG before overflowing into ESB

B. It was assumed that the capacity of ESB A could be increased to 12 to 15 MG by constructing a low concrete wall on the top of the berm that separates ESB A from ESB B.

The gravity portion of the interceptor would begin at 9th Avenue and would receive flow from the Donner Trunk sewer through a new 54-inch gravity sewer. The capacity of the gravity portion of the interceptor would be 198 MGD. With a projected flow peak flow in the lower portion of the interceptor (downstream of Fruitridge Road) of 147 MGD, a maximum of 52 MGD can be diverted to the interceptor from the CSS. A new influent pump station would be needed because the downstream end of the interceptor would be below the influent channel at the SRWTP.

Option 2: Storage in Interceptor Between Donner and SRWTP

Option 2 has the same modifications to the proposed Northwest Interceptor as Option 1. However, the enlarged interceptor would be used to store 7.1 MG of combined wastewater instead of conveying it to the SRWTP for storage. A new influent pump station would still be needed at the SRWTP. The in-line storage in the interceptor would be controlled by nine inflatable dams. The dams could be inflated to partially block the flow in the pipelines causing it to back up and be stored. Careful control would be required to prevent overflows if the flow rate rapidly increased.

Option 3: Storage at SRWTP and in Interceptor Between H Street and Fruitridge

Under Option 3, the oversized interceptor would be extended to H Street to provide in-line storage of combined wastewater in the portion of the interceptor between Donner and H. Approximately 2.7 MG of in-line storage would be available in the extension to H Street. Another 12.1 MG of storage would be needed at the SRWTP. The in-line storage would be controlled by five inflatable weirs. A new influent pump station and modifications to ESB A would also be required.

Option 4: Storage in Interceptor Between H Street and SRWTP

Under Option 4, the amount of in-line storage would be maximized by constructing a 108-inch interceptor from the SRWTP to H Street and limiting the flow to the SRWTP to the 147 MGD currently planned from separated sewer areas. The entire space above the flow surface would be used to store about 8.1 MG of combined wastewater. A series of 12 inflatable dams would be needed to control the storage. No storage of combined wastewater would occur at the SRWTP. A new influent pump station would still be needed at the SRWTP.

Conclusion

Four options were evaluated which involved various combinations of storage in the interceptor and at the SRWTP. In each of these options, the interceptor would provide both storage and conveyance capacity. However, based on the incremental capital cost for increasing capacity and providing appurtenances (i.e., pump station at the SRWTP, inflatable dams, and inverted siphon to be constructed at the Donner Truck sewer crossing), all of the options had estimated storage unit cost at least 50 percent greater than ICALS. The analysis of using the Northwest Interceptor revealed that it is not a cost-effective alternative for improving the CSS. Therefore, use of the Northwest Interceptor was abandoned by the City as a viable alternative.

6. RELATED PROJECTS

6. RELATED PROJECTS

INTRODUCTION

This Related Projects Chapter is included as supplemental information to this environmental document. The projects that are related to the City's CSS Improvement and Rehabilitation Plan include other City sewer projects, such as the 42nd Street Drainage Area Improvement Project, and related land use plans. The land use plan discussion addresses the Union Pacific Railyards planning effort and the University of California, Davis Medical Center Long Range Development Plan (UCDMC LRDP) plans since these two areas are under consideration for Phase 2 components of the CSS Plan. In addition, the Sacramento Riverfront Master Plan, the Sacramento River Parkway Plan and the Master Plan for the Docks Area are discussed since these planning areas geographically include components of the CSS.

CAPITAL IMPROVEMENT PROJECTS

City projects include "rehabilitation" projects and "improvement" projects that have been identified in the five-year Capital Improvement Plan (CIP). These projects are identified in Table 6-1. Improvement items are defined as those which will increase the pumping capacity to reduce flooding within the CSS. All improvements will be designed to ultimately provide 10-year outflow and flood protection when the entire program is completed. Rehabilitation items are defined as those which will improve the reliability, operations and maintenance of the system. Rehabilitation will generally include replacing worn or obsolete equipment, repair corroded equipment or structures, and providing equipment and controls to improve operations. These consist of current rehabilitation projects that either are in design, have funding for construction or have begun construction. Two improvement projects are identified, the "42nd Street Drainage Area Improvement Project" and the "20th Street Sewer Main Project" currently in the planning stage, pre-design, no environmental review has been completed at this time. The environmental effects of the 42nd Street Drainage Area Improvement Project were analyzed in an Initial Study and Negative Declaration (March 1995).

It should be noted that the CIPs on Table 6-1, with the exception of the 42nd Street project, have been identified by the City as being categorically exempt from CEQA. This is because these projects involve the minor alteration of existing public facilities in order to provide public utility services, and would therefore be considered as a Categorical Exemption under CEQA (Section 15301[b]).

SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

The Sacramento Regional County Sanitation District (SRCSD) is an independent political entity formed in 1973 under the provisions of the County Sanitation District Act. The SRCSD provides a region-wide wastewater conveyance, treatment, and disposal system for the entire urbanized area of Sacramento County, approximately 91 percent of the County's population.[1] Each contributing agency (including the City of Sacramento) maintains and operates its own wastewater collection system that ultimately delivers its wastewater to SRCSD's conveyance system for transport to the

TABLE 6-1

CAPITAL IMPROVEMENTS PROJECTS FISCAL YEAR (FY) 1996/1997

Project No.	Project Title	FY Funded	Status	Comments
XM06	Sewer Main College/ 19th-12/13	95/96	P	Replace deteriorating sewer
XC81	Reconstruct Misc. Sewer Manholes Citywide**	95/96	D	Replace deteriorating manholes city-wide
XM03	Alley Sewer Alhambra/ 30th-N/O Streets	95-96	D	Replace deteriorating sewer
XF31	Sewer Main 48th Street - J Street North	95/96	D	Replace deteriorating sewer
XM12	15th Street Sewer Replacement, N/L	96/97	P	Replace deteriorated sewer mains/ services/ D.I.s
XM20	DI Replacement Combined System	96/97	P	Type B boxes for flooding/ maintenance
XF21	Edgewater-Southgate Insit.	94/95	F	Change order work
XE81	Alomas-Belasco Insituform	94/95	F	Change order work
XM16	25th Street Brick MnF/G All-N	96/97	P	Replace/upgrade existing deteriorate brick sewer main/service
XM 13	Alley Sewer, I/K & 18th/19th	96/97	P	Replace deteriorated sewer main/services/D.I.s
XM17	Alley Sewer, Capitol/L - 25th/26th	96/97	P	Replace deteriorated sewer main/services/D.I.s
XM14	Alley Sewer, Capitol/L 0 15th/17th	96/97	P	Replace deteriorated sewer main/ services/ D.I.s
XM15	Land Park SWR Sutterville-15th	96/97	P	Replace deteriorated sewer main/ services/ D.I.s
XD91	20th Street Brick Main Replacement	94/95	D	Replace deteriorating brick sewer main
XM08	28th Street Drainage Improvements**	95/96	C	Extend separate combined sewer to prevent flooding in street
XM04	Alley Sewer 24th/26th - R/S	95/96	P	Replace deteriorating sewer
XM02	Alley Sewer 21st/24th - T/U	95/96	P	Replace deteriorating sewer
XF56	Alley/Sewer May/Belden	96/97	P	Replace deteriorated sewer main/ services/ D.I.s
XM10	Alley Sewer, 27th/28th & J/K	96/97	P	Replace deteriorated sewer main/ services/ D.I.s
XM11	Alley Sewer, 20/21 & O/P	96/97	P	Replace deteriorated sewer main/services/D.I.s

TABLE 6-1

CAPITAL IMPROVEMENTS PROJECTS FISCAL YEAR (FY) 1996/1997

Project No.	Project Title	FY Funded	Status	Comments
XM21	20th Street Sewer Main Broadway	96/97	P	Replace undersized main with larger, include retention
XM05	Alley Sewer 19th/20th - H/I	94/95	D	Replace deteriorating sewer
XM07	Alley Sewer C/D, 13th - 16th	95/96	D	Replace deteriorating sewer
XF11	Sewer Service Lining Citywide**	95/96	C	Insitu-line broke/offset services to prevent excavation at residences
XF11	Phase 2 - Sewer Service Lining Citywide	96/97	P	Second year phase of insitu service replacement
XM01	42nd Street Detention**	94/95/96	C	Under construction
XD41	Pump Station 2 Rehabilitation/ Improvements	96/97	P	Design project
XM23	Pump Station 1/1A/Pioneer Reservoir Rehabilitation/ Improvements	96/97	P	Design project
XC41	Sewer Main 13th - C to J Street	95/96	D	Replace deteriorating brick sewer downtown
XE56	2nd Avenue Main, Stockton - Santa Cruz	95/96	F	Replace deteriorating sewer main
XC81	Reconstruct Misc Sewer Manholes	96/97	P	Ongoing annual manhole replacement
XM22	North C Street Sewer, N. 12th to Ahern	96/97	P	Relieve flooding and rehab pipe
XM18	Alley Sewer K/L, 10th/11th	96/97	P	Replace deteriorated sewer main/ services/ D.I.s

NOTES:
* With carryover from 1993/1994, 1994/1995 and 1995/1996.
** Current year CIP projects.
P = Predesign
D = Design
C = Construction (to bid)
F = Construction (finished)

SOURCE: Current Capital Improvement Projects FY 1996/1997, City of Sacramento Department of Utilities, May 1996.

SRWTP for treatment. The SRWTP is a secondary treatment facility that serves approximately one million residents within a 220 square mile area. Currently, sewage collection service in the greater Sacramento area is provided by the County Sanitation District No. 1 (CSD-1), and the Cities of Sacramento and Folsom. The SRCSD provides conveyance, treatment, and disposal of the wastewater generated within the three collection systems.

To comprehensively plan for the future and comply with existing regulations, the SRCSD has developed the Sacramento Regional Wastewater Treatment Plant Master Plan, and the Sacramento Sewerage Expansion Master Plan. These plans identify future sewer capacity needs and expanded sewer systems, as well as new facilities for wastewater treatment and disposal needs. Both plans constitute the District's overall Master Plan for wastewater treatment facilities and sewer conveyance systems.

Sacramento Regional Wastewater Treatment Master Plan

The Sacramento Regional Wastewater Treatment Plant Master Plan (SRWTP Master Plan) is comprised of six volumes of technical memorandums (1990-1992), a Master Plan Summary Report (1992), and a Master Plan Update (1994). The SRWTP Master Plan establishes a framework for the SCRSD to comply with existing and future effluent discharge requirements for Sacramento County, and the Cities of Sacramento and Folsom through the year 2010; and identifies new facilities. The SRWTP Master Plan has not yet been adopted nor has the EIR been certified, but the project is scheduled to go before the SRCSD Board of Directors early next year and adoption of the project and certification of the EIR is anticipated.

Sacramento Sewerage Expansion Master Plan

The Sacramento Sewerage Expansion Master Plan (Expansion Master Plan) establishes the wastewater flow criteria and land use densities from which sewer design capacity requirements have been developed and identifies future sewer capacity needs and conveyance system for the service area through the year 2014. The facilities outlined in the Master Plan includes a network of interceptor pipelines and trunk sewers. Phase I, scheduled for completion by 1999, includes several projects that would eliminate existing capacity problems, such as the Bradshaw, Sunrise, and Folsom East interceptors.[2] The Expansion Master Plan in conjunction with the Phase I interceptor Projects is scheduled to go before the SRCSD Board for adoption of the project and certification of the EIR in late October 1996.

LAND USE PLANS

The University of California, Davis, Medical Center, Long Range Development Plan (UCDMC LRDP) (1989) and the proposed Union Pacific Railyards (UPR) Master Plan are plans that oversee two sites currently being proposed as potential sites for the Phase 2 regional underground storage tank facility. Both sites are large enough to contain this underground storage facility and are currently designated in the City's General Plan Land Use Map for public/quasi public uses. Although not considered as potential sites for the CSS Plan components, the planning areas for the Sacramento Riverfront Master Plan, Sacramento River Parkway Plan and Master Plan for the Docks Area are also discussed since components of the CSS Plan are within those planning areas.

UCDMC LRDP

The LRDP adopted in March 1989 is the first long range plan approved for the UCDMC. The LRDP encompasses a 15 to 20-year buildout of the approximately 120 acre site. The UCDMC campus is currently bounded by V Street to the north, 49th Street on the east, the Second Avenue extension and Marian Anderson School property on the south, and Stockton Boulevard and 39th Street on the west (see Figure 6-1, TO COME). The site, which included the existing UCDMC hospital which was transferred from the County to the University in 1972 as a result of the 1965 Medi-Cal Act, was purchased by the University in 1973. When the University purchased the site it also acquired a hospital in need of upgrading. The LRDP provides a framework for the future physical development of the site.

The LRDP outlines the development of functional Zones (i.e., Hospital Zone, Ambulatory Zone, Specialized Clinical Services Zone) to organize the various uses in a logical fashion on the site. The site has the capacity to accommodate the demands that include the growth of new programs, consolidation of off-site facilities on site, and replacing temporary facilities with permanent structures. The plan was developed to be updated periodically as needs change and individual projects are approved. The first Amendment to the plan is anticipated to get underway sometime this year (1996). At this time, it is anticipated to take up to two years before the Amendment is formally adopted by the Board of Regents. According to UCDMC, the Amendment to the LRDP will not incorporate a dedicated site for the proposed regional underground storage facility.[3] Due to the conceptual nature of the Phase 2 improvements of the CSS Improvement and Rehabilitation Plan and the amount of development proposed for the site, the UCDMC is not in favor of making the commitment to preserve a portion of the site for this type of use.

Proposed Union Pacific Railyards Master Plan

In 1991, the City Council assigned a Union Pacific Land Use Committee (UPLUC) to study the 94-acre Union Pacific Railyards site located in south Sacramento. The site, owned by the City, is located south of Broadway, north of Sutterville Road, east of Freeport Boulevard, and west of Curtis Park. The UPLUC was charged with identifying goals and policies to guide the redevelopment of the site and to provide direction for the designation of future land uses on the site. Of the total 94-acre site, 63 acres is slated to be developed under the Master Plan leaving the remaining 31 acres as a Union Pacific switching yard.

Based on the report prepared by UPLUC, the preliminary land uses were identified as being residential with limited neighborhood serving commercial uses. Due to the site's proximity to the Curtis Park neighborhood, the Committee felt that a limited mixed use development plan including some neighborhood serving commercial uses would be the most compatible to the surrounding area. As part of the Master Plan, a 0.7 acre site will be dedicated for construction of an approximately 40-foot wide by 800-foot long, up to 200 MG underground regional storage facility. A 2-acre detention basin has also been identified for the site. Preliminary studies conducted by the Department of Utilities determined the site to be highly favorable due to its relatively central location and that it is down gradient of the combined sewer collection service. A market study is currently being prepared to assess the economic feasibility of developing the land use plan proposed by UPLUC. The market study is expected to be completed in August

1996. The next stage of the plan development process is to further analyze UPLUC's recommendations and, based on this information the land use plan will be finalized and submitted to the City for adoption. The UPR Master Plan is anticipated to be adopted by February 1997.

Sacramento Riverfront Master Plan

In August 1994, the Sacramento Riverfront Master Plan was adopted which sets forth a land use plan to develop approximately 160 acres along the Sacramento River from Miller Park north to the confluence of the Sacramento River and American River. The Master Plan includes various elements designed to restore access and provide amenities along the riverfront. The main objective of the Master Plan is to make the riverfront attractive and accessible to foster an environment that facilitates development and encourages people to the area. The Master Plan area includes Pioneer Reservoir and Pump Station 1/1A which were both taken into account during the planning process and considered as potential incompatible land uses. The plan recognizes the presence of the Pioneer Reservoir site and proposes that the roof of the facility incorporate public art expressive of the 'River District' area.

Master Plan for the Docks Area

The Master Plan for the Docks Area adopted in 1987 encompasses an approximately 30 acre site along the Sacramento River from I-80 north to the Tower Bridge. The Plan Area is located immediately adjacent to Pioneer Reservoir and Pump Station 1/1A. The Master Plan proposes a mixed-use land use concept that includes office, hotel, restaurant, visitor serving commercial, and public amenities. The Master Plan addresses the close proximity of these facilities and has developed a land use plan that assumes these CSS components will be permanently in place.

Proposed Capital City Marketplace

The proposed Capital City Marketplace project is a 500,000 square foot retail center located on a 51-acre parcel south of the Capital City Freeway (Business 80) across from the City's now closed 28th Street Landfill (formerly the "Centrage" project site). The project includes two retail anchors and 13 smaller stores oriented to regional, community and neighborhood serving uses. The project will require connection into the City's sewer and storm drainage system. The project is currently going through the environmental review process and should come before City Council for approval in mid 1997.

R Street Corridor Plan

In September, the City Council passed an "Intent Motion" to certify the EIR and adopt the R Street Corridor Plan (R Street Plan) at the October 22, 1996 council meeting. The R Street Plan establishes a mixed-use development plan for the underutilized 54-block area along R Street between Q and S Streets, I-5 and 29th Streets. The Plan includes a blend of condominiums, apartments, retail stores, and offices in a mixed-use environment linked to light rail transit. The primary objective of the Plan is to facilitate the development of a range of housing opportunities as well as transform and revitalize the existing character of the area from an underutilized heavy commercial, warehouse, and office district to an active mixed-use environment that contains a variety of land uses. The area included within the R Street Plan is within the City's CSS service area. Implementation of the R Street Plan requires extensive upgrades to the existing CSS facilities in order to accommodate proposed development. The EIR prepared for the project identified impacts to the CSS and included appropriate mitigation measures.

Proposed Crystal Ice Office Building

The proposed Crystal Ice Office Building project entails developing a 2.35 acre site located on R Street between 16th and 18th Street, within the R Street Corridor Plan area. The project consists of developing two office buildings for a total of 400,000 square feet of office space. The Crystal Ice project would require an amendment to the R Street Plan from the City because the project is not in conformance with the recently adopted R Street Plan. The project site is located within the City's CSS service area and construction of the project would require connection to the CSS. The City Council has not yet taken action on the Crystal Ice project, but is expected to do so at the October 22, 1996 council meeting. At that time, the City Council may decide to adopt an "Intent Motion" before taking final action on the project.

Railyards Specific Plan/Richards Boulevard Area Plan

The Railyards Specific Plan area encompasses 240 acres immediately north and west of downtown Sacramento. The former Southern Pacific railyards site now includes a plan that will develop new housing, office space, retail and commercial uses, hotel and cultural uses, and over 25 acres devoted to park uses. To date, no development has occurred on the site due to the ongoing toxic remediation efforts. The site is anticipated to be fully remediated before the year 2005. The plan includes over 2,000 residential units, 9.6 million square feet of retail/commercial space, and 320,000 square feet for cultural uses.

The Richards Boulevard Redevelopment Area comprises approximately 1,170 acres immediately north of the Railyards area. The Richards Boulevard Area Plan includes establishing a mixed-use district that combines retail/commercial, residential and office space uses with the existing industrial and service-oriented commercial uses that exist in the area currently. The plan includes over 3,000 housing units, 6 million square feet of office space, 540,000 square feet of retail/commercial space, and over 30 acres devoted to parks and recreation. Development of the site has been delayed due to ongoing toxic cleanup efforts.

Both the Railyards Specific Plan EIR and the Richards Boulevard Area Plan EIR identified impacts to the CSS and included appropriate mitigation measures. Implementation of both projects would require upgrades to the CSS system to accommodate the planned development.

Midtown Neighborhood Preservation Transportation Plan (NPTP)

The recently adopted NPTP is the outcome of a ten year planning process to resolve the conflicting goals between the SGPU and the Central City Community Plan. The NPTP is designed to reduce and slow traffic within the Midtown neighborhoods. The Plan includes new traffic signals, stop signs, traffic circles, half-street closures, diverters, pedestrians islands and intersection portals, which are all designed to be traffic calming. The primary goal of the plan is to better facilitate the flow of traffic through the midtown neighborhoods to reduce traffic speeds and create safer neighborhoods. The City Public Works and Utilities Departments will work closely together to coordinate construction activities related to the NPTP and downtown sewer system rehabilitation projects.

Regional Transit South Line LRT Expansion

Regional Transit's proposed south line LRT expansion project is a federally funded project. The locally preferred alternative for the southline LRT expansion, approved at the federal level, uses the existing Union Pacific Railroad (UPRR) right-of-way. The entire line is a total of 11 miles long from downtown Sacramento to the terminus of the line at Highway 99 and Calvine Road. Phase 1 of the project consists of constructing a 6 mile stretch, from downtown to Meadowview Road. Rehabilitation and upgrades to the CSS would be coordinated with RT's construction of Phase 1. Phase 2 would be constructed later in the future once additional federal funds become available. The Draft EIR/EIS is currently in the public review period until October 28, 1996. The Federal Transportation Administration (FTA) is expected to issue a Record of Decision (ROD) in support of the project in December 1996. Final design would begin in the spring of 1997.

ENDNOTES

1. Sacramento County, Final Environmental Impact Report for the Sacramento Regional Wastewater Treatment Plant Master Plan, August 1996, p. 4-1.

2. Sacramento County, Sacramento Sewerage Expansion Master Plan and Bradshaw, Sunrise, and Folsom East Interceptor Projects Draft Environmental Impact Report, April 1996, p. ES-5.

3. Tom Rush, University of California, Davis, Medical Center, personal communication, July 24, 1996.

7. ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

7.1 INTRODUCTION TO THE ANALYSIS

7.1 INTRODUCTION TO THE ANALYSIS

SCOPE OF THE ENVIRONMENTAL IMPACT REPORT

This document is considered both a Project and Program EIR, designed to analyze the environmental impacts of the proposed project on both a Project Specific and Program level analysis, per CEQA Guidelines Section 15161 and 15168. On July 30, 1996, the City of Sacramento's Environmental Services Division issued a Notice of Preparation (NOP) and Initial Study (IS) for the proposed Combined Sewer System (CSS) Improvement and Rehabilitation Plan Draft EIR. The NOP and IS, public comments on the NOP, and City staff's preliminary evaluation of the proposed project identified the following environmental issue areas to be evaluated in the EIR:

- Water Quality
- Noise
- Cultural Resources

The environmental effects listed above are discussed in the following sections 7.2 through 7.4. In addition, Section 15125(b) of the CEQA Guidelines requires that the existing land use setting of the EIR discuss any inconsistencies that result when the proposed project is compared with adopted land use plans. This consistency discussion is presented in Appendix 15-1, Notice of Preparation/Initial Study and in Chapter 6, Related Projects of this EIR, and is not treated as a physical environmental impact.

The impacts and mitigation measures identified as part of Phase 1 are considered Project level and are designed based on the proposed CSS Improvement and Rehabilitation Plan defined in the Project Description, Chapter 4. The mitigation measures identified for Phase 2 of the project are designed from a program level and will apply depending on what particular facilities are ultimately used to alleviate specific local flooding concerns. Future environmental analysis of the impacts and mitigation measures proposed for Phase 2 will be undertaken at the time future discretionary actions are proposed. This program EIR will serve as a master document to be "tiered off" of for these future environmental reviews for Phase 2.

No final commitment will be made, and no work will be undertaken, unless and until the City has either: 1) prepared and committed itself to mitigation measures that will reduce to a level of insignificance any significant impacts; or 2) if, after further analysis, one or more of the mitigation measures prove to be infeasible or it is determined that the mitigation measures will not reduce the significant impacts to a level of insignificance, the City will have to reconsider whether or not it wishes to proceed with the project and make required findings if it decides to proceed.

ISSUES NOT INCLUDED IN THIS EIR

Several issues were determined not to be significant and are not discussed in this EIR. These issues are identified below:

- Land Use and Planning
- Population and Housing
- Geology/Earth
- Water/Hydrology
- Air Quality
- Transportation/Circulation
- Biological Resources
- Energy and Mineral Resources
- Hazards/Human Health
- Public Services
- Utilities and Service Systems
- Aesthetics/Light and Glare
- Recreation

These issues were dismissed for one of three reasons: (1) existing regulations will assure that the impact will be reduced to a less than significant level, (2) the issue is social or economic and not a physical environmental impact, or (3) the issue does not apply to the planning area evaluated in this Draft EIR. Section 15125(b) of the CEQA Guidelines requires that the existing land use setting of the EIR discuss any inconsistencies that result when the proposed project is compared with adopted land use plans. This consistency discussion is presented in Appendix 15-1, Notice of Preparation/Initial Study and in Chapter 6, Related Projects of this EIR, and is not treated as a physical environmental impact.

EVALUATION OF ALTERNATIVES IN THE EIR

As required by Section 15126(d) of the CEQA Guidelines, this EIR evaluates the comparative impacts of a "range of reasonable alternatives to the project". This EIR considers two alternatives for the proposed CSS Improvement and Rehabilitation Plan, the CEQA mandated "No Project" Alternative which would require that the CSS remain in its current state with the exception of the proposed rehabilitation of the system, and the "Sewer Separation Alternative."

CUMULATIVE IMPACTS

According to CEQA "cumulative impacts refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines, Section 15355). CEQA requires that cumulative impacts be discussed when they are significant (CEQA Guidelines, Section 15130, subd. [a]). Chapter 8 of this Draft EIR compiles the cumulative impacts that are significant and unavoidable.

The analysis in the technical environmental sections includes an assessment of the environmental impacts of the proposed CSS Improvement and Rehabilitation Plan as they relate to the planned cumulative development of the region. The cumulative development for the planning area includes the buildout projected in the General Plan for the City of Sacramento.

PRESENTATION OF THE IMPACT ANALYSIS

Chapter 7 is divided into sections which provide the environmental setting, standards of significance, impacts to the environmental setting, and feasible mitigation measures for significant impacts. This analysis is conducted for water quality, noise, and cultural resources.

The environmental setting and standard of significance discussion establishes the base and threshold by which the preferred plan and alternatives are measured and analyzed. The setting discussion addresses the conditions that will exist prior to planning area development (e.g. water quality conditions, noise conditions, etc.). This setting is the base by which the preferred plan and alternatives are measured for environmental impacts. A standard of significance is identified for each environmental category to determine if the development of the proposed CSS Rehabilitation and Improvement Plan will result in a significant environmental impact when evaluated against the environmental setting. This standard of significance varies depending on the environmental category.

Impacts and feasible mitigation measures are presented, where appropriate, for each environmental category. The preferred plan and cumulative impacts are listed in one of three ways throughout the discussion: (1) no impact, (2) less-than-significant, or (3) significant. Feasible mitigation measures are always identified for those impacts found to be significant, but may or may not be present for those found to be less-than-significant. An impact will be considered significant and unavoidable if there are no feasible mitigation measures available to reduce the impact to a less-than-significant level. Each mitigation measure presented in this Draft EIR is feasible from a technological standpoint.

7.2 WATER QUALITY

7.2 WATER QUALITY

INTRODUCTION

This section of the DEIR describes the water quality characteristics of the Sacramento River, water quality characteristics of existing Combined Sewer System (CSS) discharges, and analyzes the potential effects on water quality that could occur as a result of implementation of the proposed CSS Plan.

Results of a five-year study by the City of Sacramento have shown that no significant adverse impacts on beneficial uses of the Sacramento River have occurred as a result of current CSS operation. With the exception of mercury, no violations of applicable water quality objectives or federal policies for combined wastewater systems have been identified. The proposed CSS Plan would not add new discharges to the system, but it would improve the ability of the system to provide for better flow-through, solids removal, and disinfection of currently untreated Combined System Overflows (CSOs) and reduce outflows and flooding in the CSS service area for existing and planned development.

The impact analysis evaluates potential environmental effects on water quality as a result of operation of the proposed CSS Plan with respect to suspended solids, pathogens, disinfection by-products, and mercury. Mercury was selected for analysis because it has been identified as a major water quality issue for the Sacramento River and was specifically identified as a compliance issue in the recently approved Waste Discharge Requirements (WDR) for the CSS. The remaining three constituents were identified because water supply agencies that rely on Sacramento River water for drinking water have expressed concern to the Central Valley Regional Water Quality Control Board (CVRWQCB) regarding the levels of these constituents in the Sacramento River and their potential effects on water supply. Water quality-related federal, State, and local regulations and plans applicable to operation of the proposed CSS Plan provide the regulatory context for the discussion.

Issues related to surface water flow and quantity, flooding and drainage, groundwater quantity and quality, and short-term impacts on water quality as a result of CSS Plan construction were evaluated in the Initial Study and were found to be less than significant or there was no impact (please see Appendix 15-1, Initial Study and Notice of Preparation). Therefore, these issues will not be addressed in the EIR.

ENVIRONMENTAL SETTING

Surface Water Resources

The City of Sacramento is located in the Sacramento River Basin, which encompasses approximately 26,500 square miles and is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Delta-Central Sierra area to the south. The Sacramento River is the principal river in the basin. The principal tributaries to the Sacramento River include the Pit, Feather, Yuba, Bear, and American Rivers to the east. By law (*California Water Code* Section 12220), the Sacramento River, beginning at the "I" Street Bridge and including all portions downstream, are considered part of the Sacramento-San Joaquin Delta (Delta).

The Sacramento River has been classified by the CVRWQCB as having numerous beneficial uses, including providing municipal, agricultural, and industrial water supply. Other beneficial uses include groundwater recharge, navigation, recreation, shellfish harvesting, and aquatic life and wildlife.

Surface Water Quality

Sacramento River Water Quality

The reach of the Sacramento River that flows through the Sacramento urban area is generally considered to be of high quality. Ambient water quality in the Sacramento River appears to be significantly influenced by flow volumes. Flows are influenced by regulated dam releases, precipitation throughout the watershed, and urban runoff events. The influence of flows on water quality is complex and not easily definable, but water quality is generally believed to be more degraded under higher flow conditions due to increased sediment loads.[1]

Mercury presents the greatest water quality compliance problem for the Sacramento River. Copper, cadmium, and lead may also present compliance problems if compliance is assessed on the basis of the total recoverable metals criteria for freshwater aquatic life.

To characterize existing ambient water quality conditions in the Sacramento in the vicinity of the CSS discharge locations, relevant data from the Sacramento Coordinated Water Quality Monitoring Program and the Combined Sewer System Effluent and Receiving Water Quality Monitoring Program are summarized below.

Sacramento Coordinated Water Quality Monitoring Program Data

The Sacramento Coordinated Water Quality Monitoring Program (CMP) was formed by the Sacramento Regional County Sanitation District (SRCSD), Sacramento County Water Agency, and the City of Sacramento in July 1991. A long-term Ambient Water Quality Monitoring Program (AMP) for the Sacramento and American Rivers was implemented in 1992. Since then, water quality samples have been collected biweekly from six sites on the Sacramento and American Rivers. Sacramento River quality is monitored at three sites: Veterans Bridge, Freeport, and River Mile 44 (approximately two miles downstream from Freeport, near Clarksburg). The Veterans Bridge location is upstream of the CSS discharge locations, and the Freeport location is downstream.

Water quality constituents monitored as part of the AMP include twelve trace metals (antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc), eight conventional parameters (temperature, dissolved oxygen, pH, conductivity, hardness, total suspended solids, and total and dissolved organic carbon), and cyanide. A special study addressing the herbicides diuron and simazine were performed during 1995 because these compounds are currently being monitored under the 1995-96 Sacramento Stormwater Monitoring

Program. The study concluded that adding these herbicides to the list of chemicals monitored under the CMP was not warranted at this time. Results of the CMP are presented in the *Sacramento Coordinated Water Quality Monitoring Program 1995 Annual Report*[2], from which the following discussion of Sacramento River ambient water quality conditions has been summarized.

Additional water quality monitoring has been performed by the SRCSD in support of an NPDES Effluent and Receiving Water Quality Assessment, by the San Francisco Bay Regional Monitoring Program (RMP), and the State Department of Water Resources. Where such information supplements CMP data, water quality data from these programs for parameters relevant to this analysis are incorporated into the summaries below.

Conventional Parameters

Total dissolved solids (TDS), hardness, salinity, and conductivity are measures of the mineral content of water. Higher concentrations of dissolved solids and minerals are observed in the Sacramento River as a result of agricultural and urban runoff, but the water is still considered to be of desirable quality for municipal, agricultural, and industrial uses.

Total suspended solids (TSS) is a non-specific measure of suspended matter (e.g, clay, silt, organic particulates, plankton, and microorganisms in water). TSS concentrations vary seasonally in the Sacramento River due to unregulated tributary flows and agricultural return flows, and have been as high as 250 milligrams per liter (mg/L) at River Mile 44. Geometric mean concentrations for TSS at the three CMP monitoring locations ranged from 27.0 mg/L at Freeport (downstream of CWTP discharges) to 34.6 mg/L at Veterans Bridge (upstream of CWTP discharges).

Total organic carbon (TOC) is a measure of the organically bound carbon in a water or wastewater sample. TOC is not a regulated constituent under adopted federal or State water quality protection regulations or plans that apply to the Sacramento River. No criteria have been established to evaluate the significance of its concentration in water, although TOC may be regulated in the future as part of the proposed Enhanced Surface Water Treatment Rule proposed by the federal Environmental Protection Agency (EPA). It is not routinely monitored by wastewater dischargers subject to NPDES permitting requirements or WDRs issued by the CVRWQCB.[3] Limited data for the Sacramento River is available from monitoring performed by the SRCSD as part of its NPDES Effluent and Receiving Water Quality Study. Reported TOC grab sample results from 48 sampling events during 1991 to 1993 at Freeport generally ranged from less than 3 mg/L to 6.5 mg/L. One anomalous concentration was reported at 22 mg/L.[4] The geometric mean for reported TOC levels at the CMP Freeport monitoring location was 2 mg/L, while the maximum concentration was 6.8 mg/L. Similar levels were reported at Veterans Bridge and River Mile 44.

Metals

Ambient metals concentrations in the Sacramento River are significantly influenced by flow rates. Flow-related variables that influence metals concentrations include dam releases, precipitation throughout the watershed, and urban runoff. Mercury has been identified as a significant compliance issue both above and below the Sacramento urban area. Elevated mercury concentrations in the Sacramento River are considered to be largely the result of historical gold and mercury mining practices and from natural mercury sources within the watershed. Compliance with human health criteria for total mercury was estimated to be 59 percent at River Mile 44, decreasing to 62 percent and 63 percent for upstream locations. Compliance frequencies for other metals in dissolved form detected in the Sacramento River were estimated at greater than 99 percent, or less than one exceedance in three years, on average. Mercury data from the San Francisco Bay RMP in 1993 was generally consistent with AMP findings. Copper, cadmium, and lead may also present compliance problems if compliance is assessed on the basis of total recoverable metals criteria for freshwater aquatic life. Arsenic may present a compliance issue due to a revised human health criterion.

Arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc have been identified as constituents of concern to the Sacramento Stormwater Program.[5]

Synthetic Organic Chemicals and Other Priority Pollutants

With few exceptions, priority pollutant trace organic compounds are typically not detected in the Sacramento River at concentrations exceeding or approaching water quality criteria. Dichloromethane and bis(2-ethylhexyl)phthalate were the only trace organics detected at levels that approached water quality criteria. As noted in the AMP, data for synthetic organic chemicals are relatively scarce. However, based on existing data, trace organic pollutants are not believed to present a serious water quality problem.

Pathogens

Pathogens are primarily of concern due to their potential effects in municipal drinking water supplies, although they may also have some effects on other beneficial uses (primarily water contact recreation, fishing, and shellfish harvesting). The microorganisms are all carried and transmitted by many species, including humans, domestic cattle, and wildlife. A variety of pathogens may be present in water: pathogens of particular concern in drinking water include coliform bacteria, *Giardia*, and *Cryptosporidium*, but *E. coli*, *Salmonella*, *Shigella*, and numerous other viruses and parasites are also monitored and controlled to reduce water-related health risks.

Total coliform bacteria measurements are an indicator of the level of urban and animal contamination of a water supply. Total coliform may also be an indicator of *Giardia* and *Cryptosporidium* levels, as well as other pathogens; however, specific correlations between coliform levels and all pathogens that may be present in wastewater have not been developed. Scientific research is ongoing to confirm and quantify such relationships. The need for gathering more data and evaluating the results so that disease-causing microbial contaminants in water supplies can be effectively controlled has been identified as a priority both by regulatory agencies and water supply agencies alike.

Data for total coliform concentrations in the Sacramento River at Freeport show the counts to be quite variable, ranging from less than 3 to 3,500 most probable number per 100 milliliters

(MPN/100 ml). The U.S. Geological Survey has monitored fecal coliform and streptococcal bacteria at a few selected locations in the Sacramento River, but the results are not sufficiently conclusive to evaluate.[6]

Coliform bacteria and *Giardia* in drinking water are effectively controlled by standard disinfection processes; however, *Cryptosporidium* is extremely resistant to standard disinfection processes and has been found in wastewater, treated wastewater, and receiving waters in other watersheds. At this time, the Basin Plan does not require testing discharges to surface water or groundwater for specific microorganisms, such as viruses or protozoa (e.g., *Cryptosporidium* or *Giardia*), nor is such testing routinely performed due to the lack of consistently accurate and reliable test methods and federal or State-adopted criteria upon which to evaluate results.[7] The State Department of Water Resources is currently developing a study to investigate sources of *Giardia* and *Cryptosporidium* in the Sacramento River and the Delta. Potential sources of these pathogens to be investigated include wastewater treatment plants, urban runoff, agricultural drainage, water contact recreation, dairy farm discharges, and wildlife.

Because *Cryptosporidium* is difficult to detect and treat, EPA has taken a series of steps to resolve a number of scientific uncertainties that will enable the agency to set specific safety standards for the organism. As a first step, the EPA has initiated an 18-month program to collect information that will help the agency set standards. Under the agency's Information Collection Rule, which was finalized in May 1996, public water systems serving populations greater than 100,000 and use surface waters as a source of drinking water will be required to determine through monitoring information on how often *Cryptosporidium* enters the water supply, sources of the organism, and the effectiveness of various treatment techniques.[8]

City of Sacramento Combined Sewer System Effluent and Receiving Water Monitoring Program Data for the Sacramento River

In addition to ambient water quality data from the locations sampled as part of the AMP and other monitoring programs described above, ambient conditions in the Sacramento River have also been monitored by the City of Sacramento since February 1991. Ambient water quality conditions are monitored at four locations along the Sacramento River from just below the confluence of the Sacramento and American Rivers to just south of the CWTP primary effluent discharge site. Samples are analyzed for metals (antimony, arsenic, cadmium, chromium, copper, cyanide, lead, mercury, nickel, selenium, silver, thallium, and zinc), conventional parameters (temperature, pH, dissolved oxygen, biological oxygen demand, chemical oxygen demand, hardness, nitrogen, phosphorus, oil and grease, total dissolved solids, total suspended solids, and turbidity), microbiological (total and fecal coliform and fecal streptococcus), volatile and semi-volatile organic chemicals, and pesticides.

Conventional parameters detected at upstream sites at least 30 percent of the time included total and fecal coliform, fecal streptococci, chemical oxygen demand, nitrate, dissolved and total phosphorus, total dissolved and total suspended solids, and turbidity. Ambient metals data from the AMP and from the Stormwater Monitoring Program were combined with the City's CSS data to create an extended metals database.[9] A statistical analysis of the extended database showed that metals detected at least 30 percent of the time included dissolved and total recoverable arsenic, total recoverable cadmium, dissolved and total recoverable chromium, dissolved and total recoverable copper, total recoverable lead, dissolved and total mercury, dissolved and total recoverable nickel, and total recoverable zinc. Under ambient conditions, mercury appears to be the only compliance problem.

CSS Effluent Water Quality

The City has monitored 19 wet-weather storm events and seven dry-weather events from discharges taken from CWTP, Pump Station 2 and Pioneer Reservoir, and upstream and downstream sites to determine compliance with EPA water quality criteria and to identify similarities or differences between CSS discharges and CSOs. The results of the study were included in a report prepared in 1995 and submitted to the CVRWQCB (City of Sacramento Utilities Division, *Effluent and Receiving Water Quality and Toxicity Summary Report for 1991-1995 and Proposed Sampling Program for 1995-1996*). Conclusions presented in the report are summarized below.

<u>Statistical Analyses of CWTP Discharges and Untreated CSOs</u>

Water quality results for CSS discharges were evaluated using statistical methods to determine if there is a significant difference between CWTP discharges and untreated CSOs from Pioneer Reservoir and Pump Station 2. The statistical comparison showed that CWTP discharges are not statistically similar to CSOs. CWTP discharges are significantly lower in bacteriological parameters (i.e., fecal and total coliform bacteria and fecal streptococci), which is a result of disinfection. However, CWTP discharges are higher in dissolved phosphorus, copper, mercury, silver, zinc, hardness, nitrate, and TDS than CSO discharges. This is believed to occur as a result of timing of the discharges during a storm event. CWTP discharges occur early in a storm event when influent concentrations are higher, stormwater dilutional effects in the CSS are minimal, and first flush stormwater runoff effects are still present. CSOs, however, occur much later in a storm event, after the system has attained full stormwater dilution and the stormwater runoff first flush has passed through the SRWTP and CWTP. Based on a statistical comparison, it was determined at the 95 percent confidence level that, except for BOD, Pioneer Reservoir and Pump Station 2 CSOs are similar.

<u>Comparison of Downstream and Upstream Samples</u>

Water quality results for CSS discharges were also evaluated using statistical methods to establish an appropriate data set for Sacramento River water quality at CSS monitoring locations upstream and downstream of CSS discharges to determine if there were any significant increases in constituent levels downstream of CSS discharges. If such increases were found, this would be an indicator that CSS discharges may have contributed to the measured constituent levels. The results of this analysis, as presented in the *Effluent and Receiving Water Quality and Toxicity Summary Report for 1991-1995*, are summarized in the following discussion.

Conventional Parameters

All conventional water quality parameters, with the exception of nitrite, were consistently detected in CSS discharges. Chemical oxygen demand (COD) concentrations were determined to be significantly greater downstream of the CWTP discharge only. However, the median downstream COD concentration was 6.6 mg/L and was determined not to be a water quality concern. All other conventional parameters were determined to be statistically equivalent between upstream and downstream monitoring locations, indicating that CSS discharges have not caused or significantly contributed to solids or mineral loading in the Sacramento River.

Metals

Metals that were consistently detected greater than 30 percent of the time in CSS discharges included dissolved and total recoverable arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc. Lead and zinc were the only metals detected at statistically greater concentrations downstream of CSOs only. No statistically significant increase in metals levels were identified in the CWTP downstream monitoring location. The reported levels at the downstream locations complied with EPA objectives to the same extent as upstream locations, and violations of water quality objectives did not exceed the allowable EPA excursion frequency of once every three years.

Pathogens

Median fecal coliform and total bacteria concentrations in CWTP discharges during the five-year study were 7.29 MPN/100 ml and 83.8 MPN/100 ml, respectively. At Pioneer Reservoir, the median concentration for fecal coliform was 1,050,000 MPN/100 ml, and total coliform was 2,500,000 MPN/100 ml. Median concentrations of fecal coliform and total coliform at Pump Station 2 were 230,000 MPN/100 ml and 36,300,000 MPN/100 ml, respectively.

CSO upstream median fecal and total coliform levels were 450 MPN/100 ml and 4,325 MPN/100 ml, respectively. CSO downstream median fecal and total coliform levels were 11,000 MPN/100 ml and 37,000 MPN/100 ml, respectively.

The Sacramento River monitoring results indicated that bacterial parameters were statistically significantly greater downstream than upstream of the CSO locations only. This is attributable to the lack of disinfection facilities at the Pioneer Reservoir and Pump Station 2 CSO sites.

Synthetic Organics

Synthetic organic constituents were analyzed at CWTP and Pump Station 2 in 1993 and 1994, respectively. Except as noted in the following discussion, there were no other reported detections of synthetic organic compounds that exceeded laboratory detection limits for the constituents analyzed. For constituents detected, the significance of the detection is noted.

In addition to the two sampling events in 1993 and 1994, other sampling for organic compounds has been performed at the CWTP, Pump Station 2, and Pioneer Reservoir. The most significant organic compound detected was chloroform in CWTP discharges, with a median value of 87 μg/L or greater. Dichloromethane and bromodichloromethane were detected at lower levels in CWTP discharges. The presence of these compounds in the discharges are likely a by-product of the disinfection process at CWTP.[10]

Water Quality Criteria Compliance

A comparison to water quality objectives for water quality constituents monitored by the CSS, as presented in the *Effluent and Receiving Water Quality and Toxicity Summary Report for 1991-1995*, is summarized in the following discussion.

Metals

The EPA one-hour criteria to protect fish and wildlife was selected for water quality objective comparison for metals. The only potential violation with EPA criteria for metals appears to be mercury. Effluent from the CWTP has exceeded the EPA 30-day average criteria of 0.012 microgram per liter (μg/L) to protect human health (due to bioaccumulation of mercury in fish tissue).

The mercury sampling technique the City used in 1991 may not have been able to detect to a level necessary to make an absolute determination. As such, in addition to the requirements summarized above, the WDR required the City to conduct "clean technique" sampling for mercury. The clean technique allows quantification of mercury at lower concentrations using more sensitive analytical methods.

As stated in correspondence from the City Utilities Department to the CVRWQCB dated May 23, 1996, during the 1994-95 wet season clean techniques (including lower detection limits) were used on eleven discharge samples. These results indicate lower mercury levels using clean techniques. However, the CWTP still exceeds the EPA 30-day criteria for the dissolved and total fractions, and Pioneer Reservoir and Pump Station 2 for the total fraction only. An assessment was undertaken to determine if the mercury levels in the CSS discharges have a "reasonable potential" to cause or contribute to an exceedance of the water quality criteria in the Sacramento River. The City concluded that the mercury loadings from CSS discharges do not have a reasonable potential to cause or contribute to an exceedance of the water quality criteria in the Sacramento River. This determination is currently under review by the CVRWQCB.

Synthetic Organics

The EPA 30-day average human health objective for bis(2-ethylhexyl)phthalate and tributyltin were exceeded in the CWTP discharge sampled on November 11, 1993. The EPA four-day objective for the protection of freshwater aquatic life was exceeded for tributyltin. However, the dilution factor for this discharge to the Sacramento River was approximately 64 to 1. Therefore, it was determined unlikely that any EPA objectives would have been exceeded due to this CWTP discharge.

EPA objectives for the protection of human health (30-day average) were exceeded for bis(2-ethylhexyl)phthalate, tributyltin, tetrachloroethylene, 1,1-dichloroethane and gamma BHC at Pump Station 2 CSO sampled on February 17, 1994. The EPA four-day objective for the protection of freshwater aquatic life was exceeded for tributyltin. Because the dilution factor for this discharge was approximately 130 to 1, it was determined unlikely that any EPA objectives would have been exceeded.

Pathogens

Fecal coliform levels in CSOs and downstream locations were significantly greater than the Basin Plan Objective of 200 MPN/100 ml. However, upstream levels of fecal coliform were also in excess of this criteria. The 200 MPN/100 ml criteria was established for the protection of contact recreational use of the Sacramento River. Due to the intermittent and short-term duration of these discharges and that they occur during periods of minimal public contact with these waters (winter months with significant storm events), the potential health impact is considered insignificant.[11]

There have been no documented outbreaks of pathogen-related waterborne diseases associated with CSS outflows. A Public Health Risk Assessment (1994) was conducted over a two-year period and consisted of a statistical analysis or work records of outdoor workers to see if there was a correlation between outflow events and increased absences from work. The analysis showed that absenteeism was not significantly greater among personnel working in the CSS service area than among personnel working outside the area. From the health assessment, the City concluded that outflows of combined wastewater do not pose a major health risk.[12]

Aquatic Toxicity

Biotoxicity test results of CSS discharges to the Sacramento River have been variable. However, based upon the dilutional capacity of the Sacramento River during CSS discharges, it was determined that toxicity impacts to aquatic life in the Sacramento River during these discharges was negligible.

Water Quality Assessment of CSS Discharges

Results of the five-year study, as summarized in the preceding discussion, indicate that CSS discharges have had a negligible or non-existent effect on water quality and beneficial use of the Sacramento River. This is due to the City's CSS program, which provides an adequate level of control to meet the water-quality based requirements of the Clean Water Act (CWA). Four factors were identified to support this conclusion:

1. The dilutional capacity of the Sacramento River is high during CSS discharge events. Over the last five years, CSS discharge volumes have averaged only 1.4 percent of the Sacramento River volume during discharge periods. Discharge constituent concentrations and "No Observable Toxicity Effect" dilutions have been at sufficiently low levels to ensure that EPA water quality objectives are not violated and toxicity effects are not experienced in the Sacramento River.

2. The low constituent concentrations and toxicity in the CSS discharges is due to the combined treatment capacity of the Sacramento Regional Wastewater Treatment Plant (SRWTP) and CWTP, which over a four-year period (1990-94) treated 92 percent of the total CSS storm flow volume prior to discharge. Therefore the untreated portion of the CSS flow volume consisted primarily of very diluted stormwater runoff.

3. Over the last five years, CWTP discharges averaged 15 events per year, while CSO events average seven events per year. Discharge durations from the CSS over this period averaged 4.8 hours. Any potential public health impact due to elevated levels of bacteria downstream of the CSOs is, therefore, minimized due to the intermittent and short-term nature of the CSOs. In addition, during extreme storm events causing CSOs, public contact with the Sacramento River is minimal.

4. Based on the four-year period, CSS discharges to the Sacramento River have been in compliance with the average percent capture criteria (greater than 85 percent) of the EPA CSO Control Policy (see Chapter 3, Overview of the Combined Sewer System, for more information), even though the number of CSOs averaged more than four to six per year.

REGULATORY CONTEXT

Federal Surface Water Quality Regulations

Water quality objectives for all waters in the State are established under applicable provisions of Section 303 of the federal CWA and the State Porter-Cologne Water Quality Control Act. The State Water Resources Control Board (SWRCB) and the CVRWQCB are responsible for assuring implementation and compliance with the provisions of the federal CWA and the Porter-Cologne Water Quality Act.

Federal Clean Water Act

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. Section 304(a) requires the EPA to publish water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. 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.

Section 303(c)(2)(b) of the CWA requires states to adopt numerical water quality standards for toxic pollutants for which EPA has published water quality criteria and which reasonably could be expected to interfere with designated uses in a water body.

National Toxics Rule

In December 1992, EPA promulgated the National Toxics Rule (NTR) to establish numerical criteria for priority toxic pollutants for California and 13 other states that were not in complete compliance with Section 303(c)(2)(b) of the CWA. For California, the NTR established water quality standards for 42 pollutants for which Section 304(a) water quality criteria exist, but which were not covered under California's statewide water quality regulations.

As a result of the court-ordered revocation of California's Inland Surface Waters Plan in September 1994 (see State Water Quality Regulations discussion below), EPA Region IX has begun efforts to promulgate additional federal water quality standards for California. The standards are expected to include all constituents for which EPA has issued 304(a) numeric criteria that are not already included in the NTR. In 1995 the EPA issued an Interim Final Rule promulgating new aquatic life metals criteria.

National Pollutant Discharge Elimination System Permits

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the CWA to regulate municipal and industrial discharges to surface waters of the U.S. 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. The quality of effluent that can be discharged from the CWTP is established by the CVRWQCB through WDRs that implement the NPDES permit. WDRs are updated at least every five years. A new permit must be issued in the event of a major change or expansion of the facility.

Combined Wastewater Treatment Plant Permit

As described in Chapter 3, Overview of the Combined Sewer System, in March 1996 the CVRWQCB rescinded a Cease and Desist Order (CDO) that it had issued to the CSS because of violations of the previous WDR. The CVRWQCB drafted a new WDR in early 1996. The draft WDR, which described existing conditions, improvement plans, CSO strategies, and specified numerical and narrative effluent water quality limitations, was distributed to several federal and State agencies as well as to water agencies that rely on Sacramento River or Delta water supplies to serve their customers. A public hearing was held on March 22, 1996 to receive testimony regarding the draft WDR. The final WDR, issued as Order No. 96-090, was approved by the CVRWQCB on March 22, 1996 and is designed to implement the Sacramento and San Joaquin River Water Quality Control Plan. The CVRWQCB determined that the CSS discharge is consistent with the antidegradation provisions of the EPA (Title 40, Section 131.12 of the *Code of Federal Regulations*) and SWRCB Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). In conjunction with its approval of the WDR, the CVRWQCB determined that the Long-Term Control Plan for improvements is an acceptable solution to the problem of outflows from the combined sewer system.[13]

The City must comply with the Order, which established the City's new set of WDRs. Relevant water quality-related numerical and narrative monitoring and discharge provisions of the WDR 96-090 are excerpted below (refer to Appendix 15-4 for the entire NPDES permit):

Pump Station 2 Influent Monitoring

Constituent	Units	Type of Sample	Frequency
Flow	mgd	daily mean and range	continuous
Suspended matter	mg/L	flow-weighted composite over event	each storm
Settleable matter	ml/L	grab	each storm

CWTP Effluent Monitoring

Constituents	Units	Type of Sample	Sampling Frequency
Suspended Solids	mg/l	Flow-Weighted Composite over event	Each Event
Settleable Solids	ml/l	Grab	Each Event[1]
pH	pH Units	Grab	Each Event[1]
Fecal Coliform Organisms	MPN/100 ml	Grab	Each Event[1]
Chlorine Residual	mg/l	Grab	Each Event[1]
Flow	mgd	Meter[2]	Continuous
Temperature	°F	Grab	Each Event[1]
Dissolved Copper	μg/l	Grab	4 Events per year
Dissolved Lead	μg/l	Grab	4 Events per year
Dissolved Zinc	μg/l	Grab	4 Events per year
Diazinon[3]	μg/l	Grab	4 Events per year
Chlorpyriphos[3]	μg/l	Grab	4 Events per year
Diuron[3]	μg/l	Grab	4 Events per year

[1]At least one grab sample during the first four hours of an event. If the duration of the discharge event is greater that 24 hours, daily samples shall be collected. An event is defined as a period of continuous operation of the Combined Wastewater Treatment Plant with subsequent discharge to the Sacramento River.
[2]In addition, the number, duration, and total flow for each event shall be recorded.
[3]Analytical method shall have a detection level no great than 100 ng/l.

Pioneer Reservoir Effluent Monitoring

Constituents	Units	Type of Sample	Sampling Frequency
flow	mgd	Meter[1]	Continuous
pH	pH Units	Grab	Each Event[2]
Dissolved Oxygen	mg/l	Grab	Each Event[2]
Temperature	°F/°C	Grab	Each Event[2]
Suspended Solids	mg/l	Flow-Weighted Composite	Each Event[2,3]
Settleable Solids	ml/l	Grab	Each Event[2,3]
Fecal Coliform Organisms	MPN/100 ml	Grab	Each Event[2,3]
Chlorine Residual	mg/l	Grab	Each Event[2,3]
Dissolved Copper	μg/l	Grab	4 Events per year
Dissolved Lead	μg/l	Grab	4 Events per year
Dissolved Zinc	μg/l	Grab	4 Events per year
Diazinon[4]	μg/l	Grab	4 Events per year
Chlorpyriphos[4]	μg/l	Grab	4 Events per year
Diuron[4]	μg/l	Grab	4 Events per year

[1]In addition, the number, duration, and total flow for each event shall be recorded.
[2]At least one grab sample during the first four hours of an event. If the duration of the discharge event is greater than 24 hours, daily samples shall be collected. An event is defined as a period of continuous discharge from the Pioneer Reservoir to the Sacramento River.
[3]Monitoring to be implemented after completing upgrade to Pioneer Reservoir to a primary treatment facility with disinfection.
[4]Analytical method shall have a detection level no greater than 100 ng/l.

Sacramento River Monitoring

Station	Description
R-1	Upstream of CSO outfalls, at the Delta King
R-2	Downstream of outfalls 006 and 007, at Miller Park
R-3	Downstream of outfalls 004 and 005, at Captains Table
R-4	Downstream of outfalls 002 and 003, at Wooden Stairs

Precise locations shall be determined by agreement between Regional Board and Sacramento City staffs.

Samples shall be collected at stations R-1 and R-2 when discharge is occurring at outfalls 006 and/or 007 for the Pioneer Reservoir discharge or Pump Station 1 bypass, stations R-2 and R-3 when discharge is occurring at outfalls 004 and/or 005 for the Pump Station 2 bypass, and stations R-3 and R-4 when discharge is occurring at 002 and/or 003 for the Combined Wastewater Treatment Plant discharge, according to the following:

Constituent	Units	Type of Sample	Sampling Frequency
pH	pH units	Grab	Each Event[1]
Temperature	°F/°C	Grab	Each Event[1]
Dissolved Oxygen	mg/l	Grab	Each Event[1]
Turbidity	NTUs	Grab	Each Event[1]

[1]Within first four hours of beginning of storm causing discharge at the above discharge points (outfalls), daily if the discharge event is greater than 24 hours.

Discharge Prohibitions

1. Discharge to the Sacramento River is prohibited at the discharge points identified below unless the specified conditions are met, or authorization has been granted under WDR Provision E.7:

a. CWTP Discharge Points 002 and 003. No discharge is allowed unless a flow of 60 million gallons per day (mgd) is being sent to the SRWTP.

b. Pump Station 2 Bypass Discharge Points 004, 005, and Pump Station 1 Bypass Discharge Point 007. No discharge is allowed unless a flow of 130 mgd is being sent to the CWTP. After upgrade of Pioneer Reservoir, no discharge is allowed unless a flow in conformance with the current Operations Plan is also being sent to Pioneer Reservoir.

c. Pioneer Reservoir Discharge Point 006. Prior to completion of upgrades, no discharge is allowed unless a flow of 130 mgd is being sent to the CWTP. After completion of upgrades, no discharge is allowed unless a flow of 60 mgd is being sent to the SRWTP, and a flow in conformance with the current Operations Plan is being sent to the CWTP.

2. Other than as a result of wet weather, or as approved under Provision E.7., discharges from the CWTP, Pioneer Reservoir, or any sumps to surface waters or surface water drainage courses is prohibited.

3. Bypass of, or overflow from, the wastewater collection system to surface waters is prohibited, except as allowed by Standard Provision A.13. The exception to the Discharge Prohibition is the discharges at Discharge Points 004, 005, 006, and 007 to the Sacramento River, which are restricted by Discharge Prohibitions A.1. and A.2.

Effluent Limitations

1. The discharge of effluent from the CWTP (Discharge Points 002 and 003) in excess of the following limits is prohibited:

Constituents	Units	Storm Year[1] Average	Storm Maximum	Storm Year[1] Median
Total Suspended Solids	mg/l	100[2]		
Settleable Solids	ml/l		1.0	
Chlorine Residual	mg/l		0.1	
Fecal Coliform Organisms	MPN/100 ml			200[3,4]

[1]1 October through 30 September.
[2]In addition, two consecutive samples shall not exceed 150 mg/l.
[3]In addition, no three consecutive samples shall exceed 1,000 MPN/100 ml.
[4]The Discharger shall continuously operate the chlorination equipment when discharging to the Sacramento River.

2. The discharge of effluent from Pioneer Reservoir (Discharge Point 006) following upgrade in excess of the following limits is prohibited:

Constituents	Units	Storm Year[1] Average	Storm Maximum	Storm Year[1] Median
Chlorine Residual	mg/l		0.1	
Fecal Coliform Organisms	MPN/100 ml			200[2,3]

[1]1 October through 30 September.
[2]In addition, no three consecutive samples shall exceed 1,00 MPN/100 ml.
[3]The Discharger shall continuously operate the chlorination equipment when discharging to the Sacramento River.

3. The Discharger shall eliminate or capture for treatment, or storage and subsequent treatment, at least 85 percent by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis. Sewage captured for treatment shall receive treatment, at a minimum to include primary clarification or equivalent, and disinfection.

4. The discharge shall not have a pH less than 6.5 nor greater than 8.5.

5. The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.

Receiving Water Limitations

The discharge shall not cause the following in the Sacramento River:

1. Concentrations of dissolved oxygen to fall below 5.0 mg/L.

2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the river bottom.

3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.

4. Chlorine to be detected in the receiving water in concentrations equal to or greater than 0.01 mg/L.

5. Aesthetically undesirable discoloration.

6. Fungi, slime, or other objectionable growths.

7. Turbidity to increase more than 10 percent over background levels.

8. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.

9. Deposition of material that causes nuisance or adversely affects beneficial uses.

10. The normal ambient temperature to be increased by more than 5°F.

11. Aquatic communities and populations, including vertebrate, invertebrate, and plant species to be degraded.

12. Toxic pollutants to be present in the water column, sediment, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels that are harmful to human health.

13. Violations of any applicable water quality standard for receiving waters adopted by the CVRWQCB or SWRCB pursuant to the CWA and regulations adopted thereunder.

14. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

Industrial Pretreatment Program

NPDES provisions and CSO strategies necessary to implement the CWA also require establishment of an industrial pretreatment program to prevent release of industrial waste discharges to Publicly Owned Treatment Works (POTWs) such as the SRWTP and CSS. By controlling the quality of the wastewater entering a POTW, harmful contaminants that could affect the wastewater treatment process, present a health risk to plant workers, or become part of the effluent stream are minimized. All commercial and industrial firms located within the CSS service area, except those that are considered "domestic" businesses (e.g, restaurants, hotels, etc.), must obtain a permit and comply with the Sewer Use Ordinance adopted by the SRCSD. The SRCSD is responsible for the pretreatment program for the CWTP under a Master Interagency Agreement between Sacramento County and the cities of Sacramento and Folsom. Among other prohibitions, any discharge to the CSS that causes or inhibits the ability of the CWTP to meet receiving water quality standards is not allowed.

Municipal Stormwater Permit

In order to manage urban contaminants, such as suspended solids, in stormwater runoff, the Sacramento County Water Agency, City of Sacramento, City of Folsom, and the City of Galt applied for, and were granted, a joint NPDES permit (No. CAD0082597) on January 20, 1995. The permittees listed under the joint permit have the authority to develop, administer, implement, and enforce stormwater management programs within their own jurisdiction. The purpose of the NPDES program is to establish a comprehensive stormwater quality program to manage urban stormwater that minimizes pollution of the environment to the maximum extent practicable (MEP). The NPDES program consists of (1) characterizing receiving water quality; (2) identifying harmful constituents; (3) targeting potential sources of pollutants; and (4) implementing a Comprehensive Stormwater Management Program (CSWMP).

The goal of the NPDES permit is to evaluate the impacts of existing urban stormwater runoff on receiving waters and reduce the pollutants in urban stormwater runoff in the Sacramento area to the MEP. Urban stormwater runoff is defined in the permit as including stormwater runoff, dry weather surface runoff, wash water related to street cleaning or maintenance, infiltration, and drainage related to storm events. The permit regulates the discharge of all wet and dry weather urban stormwater runoff within the jurisdiction of the Discharger (the discharge consists of all urban stormwater runoff generated from urbanized watersheds within the boundaries of Sacramento County, excluding the City of Isleton). Agricultural runoff (defined as runoff from land zoned agricultural or used for agricultural purposes) is not considered part of urban stormwater runoff. Any discharger currently operating with a NPDES permit that already includes the regulation of urban stormwater runoff within the City is not regulated by this permit. The permit is intended to implement the Basin Plan.

As part of the conditions of the permit, dischargers are required to implement Best Management Practices (BMPs). BMPs could include but are not limited to: (1) educational programs on the impacts of potentially harmful chemicals dumped into the stormwater drainage systems, and good housekeeping procedures to prevent accidental discharge of harmful contaminants; (2) research, and enforce regulations giving local jurisdictions the legal authority to prevent the improper disposal of potentially harmful wastes and eliminate cross-connections, which allow sanitary sewage and/or commercial/industrial wastewater to enter storm sewers or drainage facilities; and (3) public agency control measures, such as implementing intensified street sweeping programs in strategic locations (i.e., major parking lots, shopping malls) and/or at strategic times (i.e., following extended periods of dry weather).

State Water Quality Regulations

The State has established water quality standards that are required by Section 303 of the CWA and the Porter-Cologne Water Quality Control Act. The Porter-Cologne Act states that basin plans consist of beneficial uses, water quality objectives, and a program of implementation for achieving water quality objectives (*California Water Code*, Section 13050[j]). The Water Quality Control Plan, or Basin Plan, prepared by the CVRWQCB, has established water quality numerical and narrative standards and objectives for rivers and their tributaries within its jurisdiction. In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria, such as EPA water quality criteria developed under Section 304(a) of the CWA, apply.

Sacramento and San Joaquin River Water Quality Control Plan

Because that portion of the Sacramento River beginning at the "I" Street Bridge is considered part of the Delta and historically was part of a larger estuary system associated with the Delta, water quality criteria for the Delta are applicable. However, monitoring and enforcement of water quality objectives for the Sacramento River is the responsibility of the CVRWQCB according to objectives identified in a plan developed specifically for the Central Valley Region (Region 5).

Water quality objectives for the Sacramento River 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.[15] 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. WDR Order No. 96-090 issued to the CSS and the SRCSD Sewer User Ordinance implement the Basin Plan.

Inland Surface Waters Plan and Bays and Estuaries Plan

The SWRCB has developed water quality objectives for inland surface waters and bays and estuaries (SWRCB, *California Inland Surface Waters Plan, California Bays and Estuaries Plan*, April 1991).

Due to legal action taken against the SWRCB, the SWRCB was forced to rescind the Inland Surface Waters and Bays and Estuaries Plans in September 1994. This took away the ability of the SWRCB to enforce the water quality objectives identified in either plan. SWRCB embarked on a three-year study to reestablish water quality standards identified in the plans. Until new plans are completed and adopted, Basin Plan objectives are still applicable and will continue to be so when the Inland Surface Waters and Bays and Estuaries Plans are reestablished. In the interim, federal National Toxics Rule standards for certain chemicals are applicable to CSS discharges. EPA Region IX is proposing an Interim Rule that would establish standards for trace metals and some organic compounds until the State-wide plans are reissued; however, no timeline has been established for their adoption.[16]

City of Sacramento General Plan and Environmental Plans Goals and Policies

Policies and objectives associated with applicable environmental plans and programs are described above.

Local policies related to surface water quality are contained in the Public Facilities and Services element of the City of Sacramento General Plan; however, there are no policies that specifically address the protection of surface water quality in conjunction with discharges to water bodies within the City.

General goals and policies related to public safety are contained in the Public Safety Element of the City of Sacramento General Plan. The following goals and policies contained in the Other Health and Safety Hazards Subelement are applicable to the proposed CSS Plan:

Goal A: **Eliminate health and safety hazards wherever possible.**

Policy:

2. Continue to support programs that reduce health and safety hazards.

The following additional public safety goal in the Public Safety Element Hazardous Materials Subelement is applicable to the proposed CSS Plan:

Goal A: **Provide for the health and safety of the citizens of Sacramento and for the protection of the environment by reducing, and where possible eliminating, exposure to hazardous materials.**

There are no associated implementing policies applicable to the proposed CSS Plan.

IMPACTS AND MITIGATION

Introduction

Results of a five-year study by the City of Sacramento have shown that no significant adverse impacts on beneficial uses of the Sacramento River have occurred as a result of CSS operation as it currently operates. With the exception of mercury, no violations of applicable water quality objectives or federal policies for combined wastewater systems have been identified. In addition, results of a health risk assessment for outflows from the CSS did not indicate a significant problem, nor have there been any documented outbreaks of waterborne diseases associated with CSS discharges. As stated previously, the discussion of potential water quality impacts is limited to suspended solids, pathogens, disinfection by-products, and mercury.

For purposes of the analysis, it is assumed that compliance with monitoring requirements and effluent limitations under the proposed CSS Plan would be performed in accordance with permit conditions. With the proposed addition of disinfection facilities at Pioneer Reservoir and planned capacity improvements, a reduction in the number of CSOs would further reduce the risk to public health from waterborne disease-causing organisms. Water supply agencies that commented on the draft WDR for the CSS are generally supportive of the City's efforts to implement the CSS Improvement Plan because such efforts would lead to better downstream water quality for their customers.[17]

Methodology

Data sources for ambient water quality conditions in the Sacramento River included various technical reports prepared by the City of Sacramento or its consultants, the Sacramento Regional County Sanitation District, and other recent reports describing ambient water quality conditions in the Sacramento River. Where appropriate and applicable, the reports incorporated water quality objectives or criteria into the discussion in the compliance analysis. For most parameters, evaluations comparing CSS effluent quality to ambient conditions or applicable regulatory criteria had already been performed and were presented in the reports reviewed. Statistical comparisons were used extensively in the reports, and in the case of Pioneer Reservoir, computer models were used to estimate solids loading. Discussions with staff from the City, CVRWQCB, and SRCSD provided additional background information. Comments submitted to the CVRWQCB regarding the proposed WDR and a review of related water quality protection issues (as identified in the *Federal Register* and literature searches) were used to identify key issues requiring analysis.

Except as noted, the impact analysis is qualitative in nature and draws its conclusions based primarily on information presented in the above-mentioned reports, supplemented as needed with information provided by knowledgeable personnel.

Cumulative Analysis

The context for evaluation of potential cumulative impacts is the Sacramento River Watershed, which receives discharges from urban and agricultural sources upstream of the CSS. Included within that context is the Sacramento-San Joaquin Delta because the portion of the Sacramento River that receives CSS discharges is legally considered part of the Delta.

Standards of Significance

For purposes of this EIR, an impact was considered significant if implementation of the proposed CSS Plan would result in the following:

- result in an increase in contaminants discharged to the Sacramento River that could cause substantial degradation of surface water quality; or
- cause new violations of applicable water quality objectives as a result of CSS Plan operation.

Impacts and Mitigation Measures

Impact

7.2-1 Effluent containing suspended solids would be discharged to the Sacramento River (Phase 1 and Phase 2)

Suspended solids is a pollutant of concern because it can increase turbidity in surface water and contribute to bottom deposits when the solids settle, and solid particles can also adsorb other pollutants such as metals and pathogens. The City's 1994-95 water quality monitoring reports show that the mean TSS concentration in CSOs from Pump Station 2 and discharges from Pioneer Reservoir are 168 and 83.3 mg/l, respectively. The mean TSS concentration in CWTP discharges during 1994-95 was 92.1 mg/L.[18] For the 10-year, 6-hour storm event, TSS loads to the Sacramento River from Pump Station 2 and

Pioneer Reservoir under existing conditions total 87,258 pounds, and Pioneer Reservoir provides significant solids removal in its present configuration. BOD, metals, and chlorinated hydrocarbons are also removed to some extent along with the solids.

PP An analysis of proposed design improvements for Pioneer Reservoir indicated that with the proposed pump station capacity and Pioneer Reservoir improvements, TSS loading would be reduced to 51,820 pounds.[19] A statistical analysis of TSS loading has indicated the need for additional analysis to confirm this conclusion. Consequently, the City has initiated an Equivalency Demonstration Program to demonstrate that Pioneer Reservoir does provide solids removals comparable to the CWTP, and, therefore, should be considered a primary treatment facility once disinfection is provided to protect beneficial uses of the Sacramento River. Data gathered for the program will include influent and effluent TSS concentrations and discharge mass emission rates for Pump Station 2 and Pioneer Reservoir. If the Equivalency Demonstration Program fails to show that Pioneer Reservoir removes solids as well as the CWTP, the City is prepared to improve solids removal performance at Pioneer, subject to the limits imposed by the constraints of the existing structure.[20]

TSS effluent limits have not been specified for Pioneer Reservoir in the current WDR. According to the CVRWQCB, the improvements in CSS discharges that would result from establishing Pioneer Reservoir as a primary treatment facility with disinfection (which would decrease pathogen levels) could prove to be of greater benefit to Sacramento River water quality than benefits, if any, that could be derived from specifying a TSS limit. However, a limit could be established once Pioneer is operating and solids removal efficiencies are better known.[21]

Coagulants (lime, alum, ferric chloride, polymers, or some combination of these) could be added to improve sedimentation and solids removal in Pioneer Reservoir. However, adding coagulants could increase solids production and deposition, resulting in increased basin cleaning efforts and more solids requiring transport to and processing at the SRWTP. It is likely that the Equivalency Demonstration Program will probably show that it is not necessary to add coagulants to achieve effluent solids removal similar to those achieved at the CWTP.[22]

Available data shows that Pioneer Reservoir already provides sufficient pollutant removals in its existing serpentine flow-through configuration. TSS loading has not been identified as a compliance issue for CSOs or CWTP. Solids loads to the Sacramento River would not be increased when the proposed CSS Plan is implemented, even if no modifications (other than disinfection) are made to Pioneer Reservoir.

As noted in Chapter 8, Growth-Inducing Impacts, the CSS service area encompasses an area of the City that is highly developed. Full buildout is relatively close; therefore, the amount of impervious surface and new connections that would result in increased flows to the CSS are considered to be minimal (no greater than five percent increase compared to existing conditions). Any additional growth or development that could result in increased flows to the CSS would be subject to the discretionary approval of the City

Council, and City policy requires that any significant increase in wastewater or stormwater flows to the CSS associated with planned development must be mitigated. Thus, the amount of wastewater or stormwater flows into the CSS that would be discharged to the Sacramento River over the duration of CSS Plan implementation are necessarily constrained by administrative controls. Any new discharges into the system would be also be subject to applicable water quality protection requirements as well. Implementation of the CSS Plan is intended to result in no increase in pollutant loads to the Sacramento River;[22] therefore, even if small increases in flows occur as a result of area buildout, planned improvements would ensure that TSS concentrations in CSS discharges would not adversely affect beneficial uses of the Sacramento River.

Therefore, impacts associated with solids loading under existing conditions and future development would be considered ***less than significant***.

AA Even if only the rehabilitation components of the CSS Plan were implemented, available data shows that Pioneer Reservoir already provides sufficient pollutant removals in its existing serpentine flow-through configuration. Additional study is underway to further confirm this finding. No exceedances or compliance problems have been identified for CWTP regarding solids.

The amount of wastewater or stormwater flows into the CSS that would be discharged to the Sacramento River during buildout is expected to be minimal (five percent or less). Any new discharges into the system would be subject to City approval and would also be subject to applicable water quality protection requirements as well. Even if small increases in flows occur as a result of area buildout, it is reasonable to assume that TSS concentrations would not be significantly increased due to the nature of planned development. Therefore, increased TSS concentrations, if any, that could occur as a result of area buildout would not adversely affect beneficial uses of the Sacramento River because Pioneer Reservoir has already been shown to provide effective TSS control. In addition, future sources of wastewater flows that could contribute to TSS loading would be identified during the environmental review process for future proposed projects and that appropriate mitigation would be developed to lessen potential TSS impacts, if any are identified.

Therefore, implementation of the No Project Alternative under existing or future conditions would not result in any increase in solids loading to the Sacramento River or result in any violations of water quality objectives, assuming WDR effluent discharge limits are not exceeded. This is considered a ***less-than-significant impact***.

AB Implementation of this alternative would eliminate CSS overflows to the Sacramento River. All sanitary flows would be treated at the SRWTP prior to discharge, and stormwater would be discharged directly to the Sacramento River. As noted above, TSS levels associated with existing CSS discharges are not considered a compliance problem. It is assumed that TSS loading associated with CSS sanitary flows into the SRWTP would be adequately managed in accordance with the SRWTP's NPDES permit.

Stormwater is currently discharged to the Sacramento River, and the average TSS concentration for stormwater that is discharged from various sources within a geographic area that coincides generally with the CSS service area is 58 mg/L.[24] Although the CVRWQCB has not established a TSS water quality objective in the Basin Plan, by comparison the level is well below the 100 mg/L storm year average TSS limit specified for CWTP by the CVRWQCB in the CSS NPDES permit. Even though the stormwater flows would not be treated (as they would under the Proposed Project and No Project Alternatives), this data shows that existing stormwater flows do not contribute significant amounts of suspended solids to the Sacramento River.

It is reasonable to assume that TSS levels associated with the Sewer Separation Alternative would be similar to existing conditions because the stormwater discharges already occur, TSS levels are relatively low, and TSS has not been determined to present a compliance problem associated with stormwater-only discharges to the Sacramento River. Compliance with the NPDES Municipal Stormwater permit requirements also ensures that TSS loading from stormwater discharges from a separate stormwater-only system do not result in adverse water quality impacts.

As noted above, increases in flows associated with future development are expected to be minimal (five percent or less). The City estimates that stormwater would comprise 90 percent of future flows, or roughly a four percent increase over existing conditions, which is also considered to be minimal.[25] Significant TSS sources, if any, would be identified and appropriate mitigation would be developed during the environmental review process for future projects. Such efforts would ensure that discharges associated with future development in the CSS service area would not adversely affect beneficial uses of the Sacramento River as a result of TSS.

The combination of relatively low TSS concentration in stormwater-only discharges combined with permit requirements would ensure that impacts related to TSS under the Sewer Separation Alternative under existing conditions or area buildout would be ***less than significant.***

Mitigation Measure

7.2-1 Effluent containing suspended solids (Phase 1 and Phase 2)

PP,AA, AB *No mitigation measures would be required for PP, AA, or AB.*

Impact

7.2-2 Effluent containing pathogens would be released to the Sacramento River (Phase 1 and Phase 2)

The discharge of untreated or inadequately treated CSOs increases the concentration of disease-causing pathogens released into the Sacramento River. This is of concern to water agencies and the public because beneficial uses of the Sacramento River include drinking water supply, contact recreation, and aquatic and wildlife habitat. To date, there have been no major identified outbreaks of diseases attributable to pathogens in the Sacramento River.[25]

Several potential routes of waterborne transmission of pathogens to the public exist, including direct skin contact, ingestion, and inhalation of aerosols containing pathogenic matter. For transmission to occur, the pathogen must be present in sufficiently high numbers to cause infection, and there must be contact with either untreated wastewater or, alternatively, the pathogen must survive routine wastewater treatment procedures. Although the control of coliform bacteria, *Giardia*, and many other pathogens is critical, *Cryptosporidium* is of particular concern because it has been identified as the source of several waterborne disease outbreaks in Wisconsin and Nevada.[26] Increased public and agency concern regarding pathogens has prompted additional regulation under the federal Enhanced Surface Water Treatment Rule.

As stated previously, approximately 92 percent of the storm-related CSS flow volume over the past five years received at least primary treatment with chlorination and dechlorination. This is in compliance with the WDR, which specifies an 85 percent compliance frequency. There have been no documented outbreaks of waterborne diseases associated with CSS outflows. A Public Health Risk Assessment (1994) was conducted over a two-year period and consisted of a statistical analysis or work records of outdoor workers to see if there was a correlation between outflow events and increased absences from work. The analysis showed that absenteeism was not significantly greater among personnel working in the CSS service area than among personnel working outside the area. From the health assessment, the City concluded that outflows of combined wastewater do not pose a major health risk.[27]

PP Implementation of the proposed CSS Plan in and of itself would not add new discharges to the CSS. As such, *Cryptosporidium* or other pathogen levels would not be expected to significantly increase in CWTP discharges, CSOs, or outflows compared to existing conditions unless there was a significant increase in pathogen levels in the wastewater discharged to the CSS. Future connections to the CSS service area could increase flows to the system, thus increasing the potential for increased pathogen concentrations. However, the Basin Plan criterion for fecal coliform concentrations requires that the geometric mean of at least five measurements during any 30-day period does not exceed 200 MPN/100 ml (units are Most Probable Number per milliliter), and that less than 10 percent of the measurements are greater than 400 MPN/100 ml. The CWTP WDR requires that fecal coliform organisms meet a storm year median of 200 MPN/100 ml, and no three consecutive samples may exceed 1,000 MPN/100 ml, which is substantially less than previous coliform effluent limitations.[28] The combination of a reduction in CSOs and operation of the disinfection facilities at Pioneer Reservoir is intended to ensure compliance with more stringent fecal coliform concentrations, as specified in the WDR.

The addition of the proposed CSS Plan improvements at Pioneer Reservoir would result in an overall reduction of pathogenic organisms in the CSOs, which would only occur at

Pump Station 2 and rarely at the Pump Station 1 bypass. *Cryptosporidium* and other pathogens may be reduced compared to existing conditions because there would be fewer releases of untreated wastewater. CSS-specific data that could confirm such an anticipated reduction is not available at this time. However, the anticipated reduction in many pathogenic organisms as a result of disinfection prior to discharge to the Sacramento River from Pioneer Reservoir combined with a reduction in the number of CSOs that would be achieved by Phase 1 and Phase 2 improvements would be considered a benefit of the proposed project. Implementation of the CSS Plan is intended to result in no increase in pollutant loads to the Sacramento River and to decrease CSOs. Therefore, even if small increases in flows occur as a result of area buildout, planned improvements would ensure that increased pathogen levels, if any, that could occur as a result of increased flows to the CSS and resultant discharges would not adversely affect beneficial uses of the Sacramento River.

By adding disinfection facilities at Pioneer Reservoir and increasing sump capacity, pathogen levels and CSOs would decrease. Therefore, impacts associated with pathogens under existing conditions or area buildout would be considered ***less than significant*** because significant adverse changes in water quality compared to existing conditions are not expected to occur.

AA Under the No Project Alternative, disinfection facilities would not be constructed at Pioneer Reservoir. As a result, releases of untreated CSOs that could contain microorganisms such as coliform, *Giardia*, *Cryptosporidium*, and other pathogens would continue. However, this would not represent a change from existing conditions, and this has not been identified as a compliance problem under current regulations.

As the CSS service area grows, releases of increased volumes of untreated wastewater could result because adequate storage and treatment would not be provided, and pathogens would continue to be present in CSOs. Quantification of the increased health risk, if any, from an increase in pathogen levels in CSS flows as a result of planned buildout is beyond the scope of this analysis. However, pathogen levels in future discharges that would occur under this alternative would be similar in magnitude to those already measured because there would be only a minimal increase in flows associated with buildout, as noted above. It is reasonable to assume that pathogen levels in the Sacramento River at the monitoring locations would, therefore, remain similar and would continue to be exceeded during storm events. Therefore, no new water quality-related pathogen effects would occur under existing conditions or as a result of area buildout, and the impact would be ***less than significant***.

AB Implementation of the Sewer Separation Alternative would result in all of the sanitary flows from the CSS being disinfected at SRWTP prior to discharge to the Sacramento River. No specific studies have been conducted to date that could quantify whether there would be a significant reduction or increase in pathogen levels in SRWTP discharges as a result of adding sanitary flows from the CSS to the SRWTP. However, because the SRWTP must operate according to NPDES requirements, pathogen reduction via disinfection would ensure that pathogen levels do not exceed regulatory criteria. No

CSOs from the CSS would occur under this alternative. Elimination of CSOs from the CSS would result in a reduction of untreated pathogens in combined flows being released to the Sacramento River as a result of CSS operation. The Sewer Separation Alternative would not alleviate local flooding problems, but it would reduce outflows in the CSS service area. Although there is no conclusive evidence that suggests outflows present a major health risk, the potential for adverse health risk, if any, due to pathogens that might be present in the outflows would decrease because outflows would be reduced.

Under the Sewer Separation Alternative, untreated stormwater-only flows would be discharged directly to the Sacramento River. Recent studies of the pathogen content of stormwater-only discharges in urban areas have shown that stormwater runoff can contribute significant pathogen loads to receiving water. These pathogens originate predominantly from a variety of nonhuman sources, including soils, vegetation, and animal feces. Stormwater monitoring data for Pump Stations 104 and 111, which discharge directly to the Sacramento River, have shown total coliform concentrations in stormwater ranging from 240 to 23,000,000 MPN/100 ml. Fecal coliform concentrations were 240 to 1,600,000 MPN/100 ml, and fecal streptococci levels in stormwater ranged from 1,600 to 5,000,000 MPN/100 ml.[29] The Basin Plan objective for fecal coliform was exceeded 100 percent of the time. These data appear to be similar to those obtained in other urban areas similar in size to Sacramento.[30] Miller Park and Freeport Marina data for total coliform, fecal coliform, and fecal streptococci from 1991 to 1994 ranged from 800 to 17,000 MPN/100 ml, 130 to 12,000 MPN/100 ml, and 400 to 50,000 MPN/100 ml, respectively. The fecal coliform water quality objective was exceeded all but one time in all the samples analyzed.[31] The decrease in bacterial levels between the discharge locations and the monitoring locations suggests that dilution effects associated with high flows in the Sacramento River and natural die-off of the bacteria are effective in achieving significant reductions in these indicator bacteria.

Although pathogen concentrations can be diluted during high-flow conditions, microbial analysis of stormwater runoff has indicated the presence of nonintestinal disease-causing bacteria and viruses that have been associated with respiratory illnesses and skin infections. For example, it has been reported that *Salmonella*, *Shigella*, or other intestinal viruses that either do not require ingestion for infection or require very low infective doses can present health hazards when there is contact with stormwater. Epidemiological studies of recreational waters receiving stormwater runoff have suggested that current bacterial indicators (e.g., fecal coliform) may not accurately assess to what extent contact with the receiving water can result in adverse health effects.[32,33]

As stated above, it has been shown that stormwater-only flows already contain high concentrations of bacterial organisms that far exceed the Basin Plan water quality nearly 100 percent of the time. Based on the research findings noted above, it follows that stormwater-only flows can contain other pathogenic organisms besides those typically associated with intestinal diseases. However, this represents an existing condition.

Under the Sewer Separation Alternative, pathogens would continue to be present in the stormwater-only discharges because disinfection would not occur. Quantification of the increased health risk, if any, from an increase in pathogen levels that could be associated with increased stormwater flow volumes associated with future development is beyond the scope of this analysis. However, it is reasonable to assume that the pathogen levels would similar in magnitude to those that already exist because flow volumes would increase only minimally (five percent or less). An increase in pathogen levels, if any, would not differ to the extent that there would be a greater potential adverse health risk than that which currently exists for stormwater-only flows. As noted above, dilutional effects associated with high flows and natural die-off also occur, which reduces the amount of pathogenic matter that could be present in the stormwater-only flows discharged to the Sacramento River.

It is reasonable to conclude that pathogen levels in the Sacramento River at the monitoring locations would, therefore, remain similar and would continue to be exceeded during storm events. Consequently, no new water quality-related pathogen effects would occur under the Sewer Separation Alternative and the impact would be ***less than significant***.

Mitigation Measure

7.2-2 Effluent containing pathogens (Phase 1 and Phase 2)

PP,AA AB *No mitigation measures would be required for PP, AA, or AB.*

Impact

7.2-3 Effluent containing Disinfection By-Products would be discharged to the Sacramento River (Phase 1 and Phase 2)

As described in Impact 7.2-2, disinfection facilities would be added to Pioneer Reservoir. The WDR requires that the disinfection equipment must be operated continuously when discharging to the Sacramento River and meet fecal coliform limits as described above, which would reduce the amount of pathogenic organisms in discharges to the river during high-flow events. However, because the Sacramento River is used for drinking water, water supply agencies that rely on Sacramento River water have expressed concern about the connection between disinfection processes and other compounds that can form because of the presence of disinfection chemicals and other organic matter in the water. During the water disinfection process, trihalomethanes (THMs) or other disinfection by-products (DBPs) may form. TOC is used as an indication of concentration of DBP precursors (chemicals that may react with chlorine to form THMs) present in raw supply water. Concern for TOC levels centers primarily around the relationship between dissolved organic carbon and DBPs in drinking water.

New scientific data have indicated that some THM by-products of water supply disinfectants may cause chronic health effects. To address this problem, the EPA proposed a Disinfectant/Disinfection By-Products Rule (D/DBP) in July 1994, which would establish, among numerous other criteria, maximum TOC concentration that precludes any special treatment by water suppliers. As previously described, the EPA initiated an 18-month program that became effective in June 1996 to collect information that will help the agency set standards. As proposed, the DBP rule would not specifically apply to wastewater discharges. However, the City recognizes that DBPs are of increasing concern to water purveyors, and public awareness of DBPs has generally increased. Therefore, potential DBP impacts associated with CSS Plan implementation are discussed below.

PP Pioneer Reservoir

The current WDR does not require TOC monitoring for Pioneer Reservoir or CWTP, nor have TOC water quality objectives been established for the Sacramento River. TOC has not been identified as a compliance issue for the Sacramento River or CSS discharges.[34] However, proposed CSS Improvement Plan features would ensure that pollutant concentrations would not increase over existing conditions, thus minimizing the potential for DBP formation, as described below.

Sodium bisulfite would be used at Pioneer Reservoir to remove the unused chlorine prior to discharge. Application points for the sodium hypochlorite would be at the inlet to Basin 1 and the overflow weir between Basins 1 and 2. Smaller, additional amounts of chlorine would be added as necessary. Dechlorination must also be provided to reduce the toxic effects of residual chlorine on aquatic life. Sodium bisulfite would be used to reduce the residual chlorine concentration to 0.1 milligrams per liter (mg/l), as required by the CSS's WDR, immediately prior to discharge to the Sacramento River. The reaction of sodium bisulfite and chlorine is instantaneous, and, assuming the dechlorination system is properly maintained and operated, would be extremely effective in removing unreacted chlorine. Because the amount of chlorine residual that may be present in the effluent and receiving water would be limited by the WDR, this would minimize the likelihood of significant concentrations of DBPs in the Sacramento River. The WDR requires that residual chlorine levels in receiving waters must be less than 0.01 mg/L, or one-tenth of the amount allowed in the effluent, and periodic testing is required to confirm the chlorine levels. Moreover, CSS discharges are intermittent and are comprised of smaller flows, compared to wastewater treatment plants that operate continuously and that discharge much greater volumes, which minimizes organic loading and the potential for DBP or THM formation.

CWTP

As described in the Setting, chloroform was the most significant organic detected in CSS discharges and may be a chlorination by-product associated with current CWTP operation. It is believed that the chloroform is the product of unreacted chlorine and organic matter present in the wastewater that is being treated in the CWTP.[35] Proposed Phase 2 improvements would allow for more effective disinfection and dechlorination, from which two benefits could be realized. First, less chlorine would be available in the treatment plant process to form chloroform (or other DBPs or THMs) that could be released in the effluent. Second, it would reduce the amount of unreacted chlorine that could be present in the effluent, in accordance with the WDR. As a result, the amount of chlorine that could be present in the Sacramento River that could result in DBP or THM formation would be minimized to the extent practical.

As discussed above, any increased amount of wastewater or stormwater flows into the CSS that would be discharged to the Sacramento River as a result of area buildout would be limited by administrative controls. Such increases are considered to be minimal (five percent or less), and any new discharges into the system would be subject to applicable water quality protection requirements as well. Implementation of the CSS Plan is intended to result in no increase in pollutant loads to the Sacramento River; therefore, even if small increases in flows occur as a result of area buildout, planned improvements would ensure that increased flows to the CSS and resultant discharges would not adversely affect beneficial uses of the Sacramento River as a result of DBPs or THMs.

Therefore, impacts associated with DBPs or THMs would be ***less than significant*** under existing conditions or as a result of future development.

AA Under existing conditions, current CSS discharges have not been shown to present significant adverse water quality effects with respect to organic compounds, although some inefficiencies with the disinfection and dechlorination system at the CWTP may have resulted in the formation of excessive levels of DBPs. Under the No Project Alternative, the addition of disinfection facilities at Pioneer would not occur. Since chlorine would not be added to wastewater, the risk of releasing wastewater that contains constituents that could lead to DBP or THM formation in the Sacramento River would be negligible or nonexistent. While this may seem desirable, continued releases of untreated CSOs from Pioneer would likely present a greater health risk due to the large numbers and types of disease-causing pathogenic matter in the effluent compared to the health risks associated with DBPs. Pathogen-related impacts associated with the No Project Alternative are discussed in Impact 7.2-2. For DBPs, however, CSS discharges would remain intermittent and would continue to be comprised of smaller flows, compared to wastewater treatment plants that operate continuously and that discharge much greater volumes. Consequently, the potential for DBP or THM formation would still remain limited.

Any increase in the amount of wastewater or stormwater flows into the CSS that would be discharged to the Sacramento River as result of future development is expected to be minimal and would be limited by administrative controls. Any new discharges into the system would be subject to City approval and would be subject to applicable water quality protection requirements as well. Even if small increases in flows occur as a result of area buildout, it is reasonable to assume that DBP or THM concentrations would not be significantly increased in discharges compared to existing conditions because (1) DBPs are already formed and a small increase in treated flows would not be expected to significantly alter the concentrations; and (2) future sources, if any, of wastewater discharges that could contribute THMs or result in DBP formation at the CWTP would be identified during the environmental review process for future proposed projects and that appropriate measures would be developed to lessen the potential for such constituents to be present in the flows discharged from the CSS into the Sacramento River.

Therefore, impacts associated with DBPs would be ***less than significant.***

AB The Sewer Separation Alternative would result in all of the sanitary flows from the CSS being disinfected at SRWTP prior to discharge to the Sacramento River. As such, DBPs (if any) that may be discharged to the Sacramento River would not significantly change, only the location and administrative control of such discharges. No specific studies have been conducted to date that could quantify whether there would be a significant reduction or increase in DBP levels as a result of adding sanitary flows from the CSS to the SRWTP for treatment. However, because the SRWTP must operate according to its NPDES requirements and applicable federal and State water quality objectives, there would be no significant increase in THMs or DBP precursors that could be discharged to the Sacramento River compared to existing conditions. Stormwater would be discharged directly to the Sacramento River without treatment. The quality of stormwater runoff discharged to the Sacramento River would be subject to the joint NPDES Municipal Stormwater Permit, as described in Impact 7.2-1, which would minimize the levels of organic compounds such as THMs or DBPs in the Sacramento River.

As noted above, any increases in stormwater flows associated with area buildout are expected to be minimal, and DBP or THM sources, if any, would be identified and appropriate mitigation would be developed during the environmental review process for future projects. Such efforts would ensure that discharges containing THMs, DBPs, or DBP precursors associated with future development in the CSS service area would not be significant.

Therefore, this would be considered a ***less-than-significant impact.***

<u>**Mitigation Measure**</u>

7.2-3 Effluent containing Disinfection By-Products (Phase 1 and Phase 2)

PP,AA, AB *No mitigation measures would be required for PP, AA, or AB.*

<u>**Impact**</u>

7.2-4 Effluent containing mercury would be discharged to the Sacramento River (Phase 1 and Phase 2)

PP Under the proposed CSS Improvement Plan, discharges from the CSS would continue to contribute mercury to the Sacramento River. However, planned improvements in Pump Station 2 capacity combined with Pioneer Reservoir operation as a primary treatment facility, are expected to improve removal of solids.[36] This could theoretically reduce mercury levels at that location because some mercury would settle out with other solids during the treatment process. As such, some improvement in water quality discharged from Pioneer with respect to mercury is possible, although specific mercury removal rates have not been quantified.

The WDR contains provisions that may require the City to submit information that would allow the CVRWQCB to reopen the CDO and include effluent limitations for mercury if the CVRWQCB considers it necessary to protect beneficial uses. Additional technical studies and environmental analysis would be required to determine environmental effects, if any, associated with implementation of such options or others that could be used to reduce mercury loading.

As discussed above, any increased amount of wastewater or stormwater flows into the CSS that would be discharged to the Sacramento River as a result of area buildout would be limited by administrative controls. Such increases are considered to be minimal (five percent or less), and any new discharges into the system would be subject to applicable water quality protection requirements as well. Implementation of the CSS Plan is intended to result in no increase in pollutant loads to the Sacramento River; therefore, even if small increases in flows occur as a result of area buildout, planned improvements would ensure that additional mercury loading, if any, that could occur as a result of increased flows to the CSS would not adversely affect beneficial uses of the Sacramento River.

Because the mercury criteria is already exceeded in CSS discharges, implementation of the proposed CSS Plan in and of itself would not result in any adverse change that could cause substantial degradation of surface water quality compared to existing conditions or result in any new violations of water quality objectives for mercury. Consequently, impacts would be ***less than significant***.

AA As described in the setting, all CSS discharges consistently exceed the federal EPA mercury criteria for total mercury, and CWTP discharges consistently exceed the mercury criteria for dissolved mercury. Numerous measures are in place, as described in the Environmental Setting, to ensure that the quality of the wastewater entering the CSS minimizes pollutant levels. The No Project Alternative assumes that such exceedances would continue and that controls would remain in place to minimize mercury levels entering the CWTP.

The Sacramento River frequently exceeds the 30-day average EPA criteria of 0.012 µg/L for mercury. Effluent from the CWTP also exceeds criteria, as discussed above. At the direction of the CVRWQCB as a permit condition, an assessment was undertaken to determine if the mercury levels in the CSS discharges have a "reasonable potential" to cause or contribute to an exceedance of the water quality criteria in the Sacramento River. The assessment consisted of (1) evaluating the effect of CSS discharges on mercury levels in the Sacramento River downstream of the discharges in comparison to levels upstream; (2) analyzing the frequency of the discharges; and (3) determining the loading (contribution) of mercury to the Sacramento River relative to upstream sources of mercury.

The results of the statistical comparison of mercury levels measured upstream and downstream of the CSS discharge locations showed there were no significant differences in mercury levels in the Sacramento River at the upstream and downstream sites. The frequency analysis indicated that the discharges comprise a relatively small volume to the total amount of water in the Sacramento River. When combined with EPA 30-day criteria, the assessment showed that the CSS could cause or contribute to an exceedance of water quality criteria an average of 1.7 percent of the time during a 30-day period when there are CSS discharges. During a worst-case month, the percentage increased to 8.3 percent. The mercury loading assessment, based on a five-year period, indicated that CSS discharges were 0.04 percent (dissolved) and 0.08 percent (total) of the mercury loadings from upstream sources. These data indicate that the CSS does contribute to mercury levels in the Sacramento River, even though the amounts are very small (less than 0.1 percent of the entire loading and the discharges containing mercury are intermittent). These conclusions were presented in an assessment report that was submitted to the CVRWQCB in May 1996 and is currently under review by the CVRWQCB. Based on their conclusion, the CVRWQCB could impose additional mercury-control requirements.

Two approaches, reduction of mercury sources within the City or additional treatment of CWTP effluent, could be considered as possible options to control mercury levels in CSS discharges. The following discusses the potential effectiveness of each of these options.

<u>Reductions in Other Mercury Sources Within the City</u>

Mercury could potentially be reduced in the CWTP effluent by minimizing mercury sources within the municipal service area. Sources of mercury in municipal wastewater include laundry gray water, breakage of mercury-filled instruments, dental offices, and other commercial sources.

The effectiveness of municipal source controls in meeting the required mercury reductions depends on the magnitude of mercury produced by these sources and the feasibility of identifiable control options. Although the required removal has not been quantified, it is likely that this option could not independently resolve this issue given the diffuse and varied nature of the sources of mercury in municipal systems. Therefore, the expected benefit of such efforts in terms of mass reduction would be minimal.

<u>Additional Treatment of CWTP Effluent</u>

Removal of mercury from the CWTP effluent would require installation and operation of additional treatment processes. The advanced treatment alternatives could include such methods as direct filtration, lime precipitation, direct filtration followed by lime precipitation, direct filtration followed by reverse osmoses, lime precipitation followed by reverse osmoses, and direct filtration followed by lime precipitation and reverse osmoses. The percent removal of mercury would vary for each process.

While such options could be evaluated further under the No Project Alternative (as well as under the Proposed Project or Sewer Separation Alternative), neither could be expected to independently nor in combination reduce overall mercury levels in the Sacramento River to below acceptable criteria because other sources of mercury contribute to mercury exceedances in the Sacramento River. Because CSS's mercury contribution is less than 0.1 percent of the entire loading and the discharges containing mercury are intermittent under existing conditions, it is reasonable to conclude that implementation of the No Project Alternative would not contribute to mercury exceedances in the Sacramento River to any significantly greater extent compared to existing conditions.

Any increase in the amount of wastewater or stormwater flows into the CSS that would be discharged to the Sacramento River as a result of future development is expected to be minimal (five percent or less) and would be limited by administrative controls. New discharges into the system would be subject to City approval and would also be subject to applicable water quality protection requirements as well. Even if small increases in flows occur as a result of area buildout, it is reasonable to assume that mercury concentrations would not be significantly increased in discharges compared to existing conditions because potential sources of mercury, if any, would be identified and appropriate mitigation would be developed during the environmental review process for future projects. Such efforts would ensure that potential mercury loading, if any, would not contribute to or exacerbate existing conditions.

Therefore, impacts related to mercury under existing conditions and future development would be considered ***less than significant.***

AB Implementation of this alternative would eliminate CSS overflows to the Sacramento River. All sanitary flows would be treated at the SRWTP prior to discharge. Stormwater would be discharged directly to the Sacramento River. It is assumed that mercury loading associated with CSS sanitary flows would be adequately managed in accordance with the SRWTP NPDES permit and would not result in any new significant impacts.

The discharge of untreated stormwater to the Sacramento River could result in additional surface water impacts due to increased loading of urban contaminants, such as heavy metals (e.g., mercury), sediments, and oil and grease. No specific studies have been conducted to date that quantify the amount of mercury or other metals that could be discharged under this alternative and potential effects, if any, on receiving water quality.

Stormwater runoff discharged to the Sacramento River would be subject to effluent limits specified in the joint NPDES Municipal Stormwater Permit, as described in Impact 7.2-1, which would ensure that mercury levels would be controlled. Assuming that the Stormwater Permit is revised as needed to incorporate stormwater flows from the CSS and that appropriate design improvements in the stormwater conveyance system are implemented to ensure that urban contaminants are controlled as required, there would be no significant increase in mercury loading to the Sacramento River.

As noted above, any increases in stormwater-only flows associated with future development are expected to be minimal. New mercury sources, if any, would be identified and appropriate mitigation would be developed during the environmental review process for future projects. Such efforts would ensure that the potential for mercury concentrations that could be present in discharges associated with future development in the CSS service area would not be significant.

Therefore, this would be considered a ***less-than-significant impact*** for existing as well as future conditions.

Mitigation Measure

Effluent containing mercury (Phase 1 and Phase 2)

PP,AA,
AB *No mitigation measures would be required for PP, AA, or AB.*

Cumulative Impacts

As noted throughout this section, current CSS discharges, with the exception of mercury, are in compliance with applicable water quality objectives and federal CSO requirements. As stated previously, implementation of the CSS Plan is intended to ensure no increase in contaminant loading to the Sacramento River. Discharges from the CSS would be subject to effluent and receiving water limitations specified in WDR 96-090. In some cases, some improvement in CSS effluent quality may be realized due to a reduction in pathogen and TSS concentrations. In light of this, the scope of the cumulative impact discussion is limited to mercury because mercury has been identified as a compliance problem that is common to the CSS and the Sacramento River and Delta.

Impact

7.2-5 Cumulative mercury loading in Sacramento River (Phase 1 and Phase 2)

PP,AA,
AB Mercury levels and sources in the Sacramento River Watershed have been under study by a number of researchers in recent years. This research has indicated that primary sources of mercury into the Sacramento River include inorganic mercury deposits introduced through gold mining activities in the upper watershed, natural mercury (cinnabar) deposits in the Coast Ranges, mercury in sediments trapped behind dams, mercury in sediments in the stream and river bottoms, and atmospheric deposition. Discharges associated with urban development (e.g., upstream wastewater treatment plants and stormwater runoff) also contribute to mercury levels in the Sacramento River.

Future urban development within the Sacramento River Watershed could continue to contribute to mercury levels in the Sacramento River. This would continue to adversely affect receiving water quality and limit the River's ability to support its designated beneficial uses, which include municipal, agriculture, recreation, and fish and wildlife habitat.

As described in Impact 7.2-4, mercury-related impacts associated with implementation of the proposed project or its alternatives were found to less than significant because mercury exceedances occur under existing conditions. It was also determined that none of the alternatives could independently nor in combination achieve an overall reduction in mercury levels in the Sacramento River such that the water quality objective would no longer be exceeded, given the diffuse and varied nature of the sources of mercury in the Sacramento River Watershed.

Regional efforts to address Sacramento River water quality problems include the establishment of the Sacramento River Toxic Pollutant Control Program (Program). A work plan was submitted by the SRCSD to the EPA and was approved in September 1996. The plan describes a regional approach to identifying the causes, effects, and extent of pollution within the Sacramento River, and to formulate an implementable program to prevent, reduce, and eliminate the pollution. Mercury was specifically identified in the work plan as one of several pollutants that would be studied and managed under the program.[37] A number of key federal and State and local public agencies (including the City of Sacramento), private businesses and industries, water districts, and agricultural stakeholders are participating in the Program through establishment of a Coordinated Resource Management and Planning (CRMP) Group. The CRMP Group will address major policy-level issues regarding water quality management in the Sacramento River basin.

As stated above, the CSS would be required to comply with any WDRs issued by the CVRWQCB and the joint NPDES Municipal Stormwater Permit (in the case of the Sewer Separation Alternative), thus ensuring that the CSS's contribution to mercury in the Sacramento River would not increase nor exacerbate the mercury problem. Regulatory requirements similar to those applicable to the CSS also apply to many other jurisdictions and operations within the Sacramento River Watershed.

Even with implementation of specific mercury-control measures, if any, that could be developed by the City or by the Sacramento River Toxic Pollutant Control Program, the City cannot guarantee that other sources of mercury associated with existing or planned development in other areas in the Sacramento River Watershed would not increase or continue to contribute to mercury levels in the Sacramento River because compliance falls within other jurisdictions to enforce and monitor. For this reason, the City must consider the impact ***significant and unavoidable.***

Mitigation Measure

7.2-5 Cumulative mercury loading in the Sacramento River (Phase 1 and Phase 2)

PP,AA,
AB *None feasible for PP, AA, or AB.*

ENDNOTES

1. Larry Walker Associates, *Sacramento Coordinated Water Quality Monitoring Program 1995 Annual Report*, February 1996, p. 3-4.

2. Larry Walker Associates, *Sacramento Coordinated Water Quality Monitoring Program 1995 Annual Report*, February 1996.

3. Kenneth Landau, California Regional Water Quality Control Board, Central Valley Region, personal communication, August 30, 1996.

4. Larry Walker Associates, *NPDES Effluent and Receiving Water Quality Study: Preliminary Data Report Prepared for the Sacramento Regional County Sanitation District*, December 15, 1993, p. 6.

5. Larry Walker Associates, Op. cit., pp. 7-4 through 7-7.

6. Larry Walker Associates, *Southport Wastewater Treatment Plant Water Quality Impacts Assessment*, June 1995, p. 17.

7. Richard McHenry, Regional Water Quality Control Board, Central Valley Region, personal communication, August 8, 1996.

8. *Federal Register*, May 14, 1996, pp. 24353 to 24388.

9. City of Sacramento Utilities Department, *Effluent and Receiving Water Quality and Toxicity Summary Report for 1991-1995 and Proposed Sampling Program for 1995-1996*, August 1995, p. 43.

10. John Tomko, P.E., personal communication, August 30, 1996.

11. City of Sacramento Utilities Department, Op. Cit., p. 79.

12. Ogden Environmental and Energy Services Company, *Retrospective Study Report Public Health Risk Assessment for Outflows from the Combined Sewer System*, September 1994.

13. California Regional Water Quality Control Board, Central Valley Region, "Transmittal of Adopted/Amended Waste Discharge Requirements, and Rescission of Cease and Desist Orders," letter from Kenneth Landau to Gary Reents, City of Sacramento Utilities Department, March 27, 1996.

14. California Regional Water Quality Control Board, Central Valley Region, *The Water Quality Control Plan (Basin Plan) [for] the Sacramento River Basin and the San Joaquin River Basin*, 3rd edition, 1994.

15. Richard McHenry, California Regional Water Quality Control Board, Central Valley Region, personal communication, August 21, 1996.

16. Metropolitan Water District, "Waste Discharge Requirements for the City of Sacramento and Sacramento Regional County Sanitation District Combined Wastewater Collection and Treatment System," letter from Mark D. Buehler, Director of Water Quality to William H. Crooks, Executive Officer, California Regional Water Quality Control Board, Central Valley Region, March 18, 1996.

17. Brown and Caldwell, *Preliminary Design Report Pioneer Reservoir Improvements*, April 1996, Appendix A, p. 2.

18. Brown and Caldwell, Op. cit., p. 3.

19. Brown and Caldwell, Op. cit., p. 4.

20. Kenneth Landau, California Regional Water Quality Control Board, Central Valley Region, personal communication, August 30, 1996.

21. Brown and Caldwell, *Preliminary Design Report Pioneer Reservoir Improvements*, April 1996.

22. City of Sacramento Utilities Department, "City of Sacramento's NPDES Permit and Pioneer Reservoir," letter from Gary A. Reents, Engineering Division Manager to Ken Landau, Regional Water Quality Control Board, Central Valley Region, January 16, 1996.

23. John Tomko, P.E. personal communication, October 16, 1996. Average of Sump 104 and Sump 111, which discharge directly to the Sacramento River during the period 1990-95. Reference: Larry Walker Associates, *NPDES Stormwater Characterization Program Update Report*, March 21, 1996.

24. Richard Dalrymple, City of Sacramento Utilities Department, personal communication, November 5, 1996.

25. Richard McHenry, Regional Water Quality Control Board, Central Valley Region, personal communication, August 15, 1996.

26. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Infectious Diseases, Division of Parasitic Diseases, *Cryptosporidium Fact Sheet*, June 1995.

27. Ogden Environmental and Energy Services Company, Op. cit., September 1994.

28. "Information Sheet, City of Sacramento and Sacramento Regional County Sanitation District Combined Wastewater Collection Treatment System, Sacramento County," attachment to California Regional Water Quality Control Board, Central Valley Region

NPDES No. CA0079111 Waste Discharge Requirements Order No. 96-090 adopted March 22, 1996, undated, p. 3.

29. Sacramento Stormwater Management Program, Annual Reports 1991/92-1995/96, Appendix F.

30. John Tomko, P.E., personal communication, October 16, 1996.

31. Sacramento Stormwater Management Program, Annual Reports 1991/92-1995/96, Appendix F.

32. R. Field, M. O'Shea, and M.P. Brown, "The Detection and Disinfection of Pathogens in Storm-Generated Flows," in: *Water Science and Technology*, vol. 28, 1993, pp. 311-315.

33. Robert P. Marino and John J. Gannon, "Survival of Fecal Coliforms and Fecal Streptococci in Storm Drain Sediment," in: *Water Research*, vol. 25, 1991, pp. 1089-1098.

34. Kenneth Landau, California Regional Water Quality Control Board, Central Valley Region, personal communication, August 30, 1996.

35. Bob Mills, Brown and Caldwell, personal communication, October 10, 1996.

36. Brown and Caldwell, Op. cit., p.3.

37. Sacramento Regional County Sanitation District, *Draft Work Plan: Sacramento River Toxic Pollutant Control Program*, June 10, 1996.

7.3 NOISE

7.3 NOISE

INTRODUCTION

This chapter focuses on potential noise impacts indicated in the Initial Study as requiring further analysis -- specifically, those impacts resulting from the proposed installation of automatic screen cleaners[1] at Pump Station 2. This section provides a summary of the existing noise environment in the vicinity of Pump Station 2 and of applicable policies and regulations. The impact discussion addresses the potential operational noise impacts at Pump Station 2. Refer to Appendix 15-1 for the Initial Study.

SETTING

Sound Measurement Parameters

Sound is technically described in terms of loudness (amplitude) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Existing Noise Environment

Sources

Although traffic from Interstate 5 (I-5) influences the noise environment in the vicinity of Pump Station 2, this influence is reduced by a sound wall along I-5's eastern edge. Intermittent traffic along Riverside Boulevard also influences noise levels at the homes nearest to this roadway.

Receptors

Noise-sensitive receptors in the vicinity of Pump Station 2 include Temple B'Nai Israel to the south, residences to the north and east, and William Land Park to the southeast.

Noise Levels

Exhibit AA-47 of the City of Sacramento General Plan Update Draft EIR indicates that Pump Station 2 and its immediate surroundings are well within the future (year 2016) 60 dBA L_{dn} contour projected for I-5, and that traffic along Riverside Boulevard is projected to exceed 60 dBA at a distance of 75 feet from its centerline. The City General Plan Update Draft EIR projected that General Plan buildout would result in noise levels increasing by two decibels along the applicable segment of I-5 and about one decibel along the applicable segment of Riverside Boulevard. Since the noise level increase projected to occur along both I-5 and Riverside Boulevard between the General Plan Draft EIR's Existing Conditions scenario (1986) and the future model year were relatively small, and since the current year (1996) is intermediate between the two General Plan DEIR model years, it can be concluded that current conditions should be fairly close to those projected for the General Plan Draft EIR's future model year. A mid-day site survey, including brief noise measurements, was performed on August 27, 1996. Noise measurement results are generally consistent with General Plan conclusions (given that mid-day L_{eq}'s are typically about one to four dBA lower than L_{dn}'s in traffic-dominated environments). However, while I-5 traffic is the most pervasive noise source in the area, its effect is lessened by the above-mentioned noise wall and by intervening buildings. In addition, noise from equipment operating on the Pump Station 2/Riverside Water Treatment Plant site contributes to overall noise levels at many of the receptors along 10th and 11th Avenues between Riverside Boulevard and I-5. Noise measurement data are summarized in Table 7.3-1.

REGULATORY CONTEXT

As a continuous, long-term noise source, the proposed automatic screen cleaner would potentially be subject to City General Plan policies regarding noise-generating land uses as well as Noise Ordinance provisions.

City of Sacramento General Plan

Goal C: **Eliminate or minimize the noise impacts of future development on existing land uses in Sacramento.**

Policies:

1. **Review projects that may have noise generation potential to determine what impact they may have on existing uses. Additional acoustical analysis may be necessary to mitigate identified impacts.**

   There are areas of the City which are considered relatively quiet (ambient levels below "normally acceptable" noise levels). While new development in these areas might not cause the "normally acceptable" noise level for existing development to be exceeded, it is recognized that such new development might cause an increase in ambient noise considered significant in terms of impacts on existing uses.

2. **Enforce the Sacramento Noise Ordinance as the method to control noise from sources other than transportation sources.**

NOISE ASSESSMENT REPORT GUIDELINES

...Mitigation measures should be considered if the project would increase the L_{dn} at a noise-sensitive location by more than 4 dB, or cause the overall level to exceed that considered normally acceptable for the land use category, or be expected to generate significant adverse community response...

City of Sacramento Noise Control Ordinance

Relevant provisions of the City of Sacramento Noise Control Ordinance are summarized in Tables 7.3-2 and 7.3-3 below.

TABLE 7.3-1

NOISE MEASUREMENT STATISTICS

Measurement Sites						
Description	**Location**	**Date**	**Start Time**	**Duration**	**Noise Sources**	L_{eq}
808 9th Avenue	Across from backyard, along 10th Avenue, ~200' from I-5 centerline	8/27/96	13:00	5min	I-5	64
3420 Riverside Boulevard	Across from roadway-facing facade, ~60' from the Riverside Blvd. centerline	8/27/96	13:15	5min	Riverside Blvd., powered gardening equipment	61
901 10th Avenue	About mid-way between the previous two measurement sites	8/27/96	13:30	5min	I-5, equipment associated with Sump 2	58
Temple B'Nai Israel	Near facade of building facing Pump Station 2	8/27/96	13:45	5min	Riverside Blvd., equipment associated with Pump Station 2, I-5	61

Source: EIP Associates, August 27, 1996.

TABLE 7.3-2

BASELINE EXTERIOR NOISE STANDARDS

Time Period	Exterior Noise Standard (dBA)
7 a.m. - 10 p.m.	55
10 p.m. - 7 a.m.	50

TABLE 7.3-3

MAXIMUM ALLOWABLE INTRUSIVE NOISE

Cumulative Duration of the Intrusive Sound	Maximum Amount By Which Intrusive Noise May Exceed Baseline Standards Indicated Above (dBA)
Cumulative period of 30 minutes per hour	0
Cumulative period of 15 minutes per hour	+5
Cumulative period of 5 minutes per hour	+10
Cumulative period of 1 minutes per hour	+15
Level not to be exceeded for any time per hour	+20

IMPACTS AND MITIGATION MEASURES

Introduction

Subsequent to preparation of the Initial Study, the proposed location for the new automatic screen cleaners at Pump Station 2 was changed from outside to inside of the structure enclosing Pump Station 2 pumps, motors, and related equipment. This relocation would substantially reduce potential noise impacts from the screen cleaning operations.

Standards of Significance

If noise impacts from the new automatic screen cleaner at Pump Station 2 as experienced at the nearest noise-sensitive receptors would justify mitigation per the above-referenced excerpt from the City's Noise Assessment Report Guidelines, then a significant impact would result. (Since the project operator would be required to conform with City Noise Ordinance provisions by law, Noise Ordinance conformance will be assumed as part of the impact analysis.)

Impacts and Mitigation Measures

Impact

7.3-1 Noise from operation of the automatic screen cleaner proposed for Pump Station 2 could affect nearby off-site residences (Phase 1).

PP The building structure within which the screen cleaners would be housed in an enclosed structure that is expected to reduce the transmission of noise from screen cleaning machinery (and other interior noise sources) by at least 20-30 dBA. Furthermore, the nearest sensitive receptors on the side of the proposed pump station nearest to the proposed screen cleaner locations (the north side) are about 250 feet away. Considering the distance and presence of intervening structures, noise from climber screen activities would not be expected to generate impacts at these receptors sufficient to justify mitigation per the above-referenced excerpt from the City's Noise Assessment Report Guidelines. Temple B'Nai Israel is only about 60 feet from the southern edge of the proposed new pump station location, but the automatic screen cleaners would be located near the opposite side of the proposed pump station and would not create significant noise level increases at this distance. Therefore, this noise impact would be considered ***less-than-significant***.

AA,AB Neither the No Project Alternative nor the Sewer Separation Alternative would include a new pump station and associated automatic screen cleaner. Therefore, ***no impact*** of this type would occur under either alternative.

Mitigation Measure

7.3-1 Operation of Automatic Screen Cleaner (Phase 1)

No mitigation measures would be required for PP, AA or AB.

Cumulative Impacts

7.3-2 Noise from operation of the automatic screen cleaner proposed for Pump Station 2, in combination with increased noise from other sources in the vicinity, could result in a significant cumulative effect at nearby off-site residences.

PP The only other anticipated future long-term changes in the noise environment near Pump Station 2 would result from increases in traffic along I-5 and Riverside Boulevard. The City General Plan Update Draft EIR projected that General Plan buildout would result in noise levels increasing by two decibels along the applicable segment of I-5 and about one decibel along the applicable segment of Riverside Boulevard. These increases would not be audible under normal environmental conditions, would not meet the "4 dB increase" and "adverse community response" standards from the City's Noise Assessment Report Guidelines, and would be highly unlikely to cause noise levels at any home currently exposed to a noise environment within "normally acceptable" limits to exceed those limits. The addition of noise impacts from the screen cleaners would have a negligible and immeasurable affect on the overall cumulative noise impact, which, it can reasonably be assumed, would remain ***less-than-significant***.

AA,AB Neither the No Project Alternative nor the Sewer Separation Alternative would include a new pump station and associated automatic screen cleaner. Therefore, ***no impact*** of this type would occur under either alternative.

Mitigation Measure

7.3-2 Cumulative Noise Increases

No mitigation measures would be required for PP, AA or AB.

ENDNOTES

1. Screens are placed in the combined sewer stream upstream of the pumps to remove detritus which could interfere with pump operation.

7.4 CULTURAL RESOURCES

7.4 CULTURAL RESOURCES

INTRODUCTION

The following discussion of cultural resources in the CSS service area is based upon a literature review and a field visit. The North Central Information Center of the California Historical Information File System at California State University, Sacramento, provided information on previous archeological surveys and site locations within the study area.

Six prehistoric period archeological sites have been recorded within the overall study area, and portions of some of these sites could be subject to project impacts. The historic brick sewer system will be replaced with new sewer pipelines by the proposed CSS Plan. Two historic structures, Pump Station 1 and 2, would be affected by the Plan. In addition, the potential University of California Davis Medical Center (UCDMC) and Union Pacific Railroad (UPR) sites for the Phase 2 regional storage facility are also addressed. Refer to Chapter 4, Project Description for detailed information on aspects of all CSS Plan components.

ENVIRONMENTAL SETTING

Prehistory

The CSS service area lies in the territory held at the time of contact by the Nisenan or Southern Maidu, who occupied the upper drainages and the adjacent ridges of the Yuba, the north, middle, and south forks of the American, and at least the upper north side of the Cosumnes River. The eastern limit of the territory is conventionally believed to extend to the crest of the Sierra. As well, the Nisenan in the valley proper occupied some area west of the lower reaches of the Feather River.

The Nisenan were socially integrated at the village or community group level, with the group participating in the decision-making process. The villages would range in size from 15 to 25 people to, at least in the Valley Nisenan, villages over 500 people. A very large settlement consisted of a major village and associated smaller camps, whether general or specialized in nature.

Prehistoric Period Archeological Sites

Six prehistoric sites have been recorded within the overall study area--CA-SAC-28, -34, -35, -36, -37 and -38. As the exact boundaries of these resources are not known and they could extend into the streets, construction could impact these resources.

History

In 1839, John Sutter approached Juan Bautista Alvarado, the Mexican governor, with a proposal to establish a community in Upper California. Alvarado, realizing the benefits of an inland settlement in the north, accepted the proposal, awarding Sutter a land grant for his New Helvetia colony. Knowing his best link to the supply center at Yerba Buena was by water, Sutter chose land near the American and Sacramento rivers for his settlement.

Sutter's Fort served as headquarters for the Swiss emigrant's operations. Sutter planted wheat, and raised cattle and horses, using the labor of the native Nisenan and Plains Miwok people. Sutter's dreams of an empire were cut short by the January 1848 discovery of gold at the site of Sutter's mill in Coloma. Sutter's lands were rapidly overrun by thousands, seeking their fortunes. The settlement became a trading center, with supplies from San Francisco sold to the miners departing for the foothills.

The City of Sacramento was first platted out from the embarcadero in 1848 by John Sutter's son who had arrived in California in August 1848. By the fall of 1849, the population had increased from a handful at the Fort to over 2,000. By October, the debt-ridden John Sutter had transferred the title to all of his land holdings and much of his personal property to his son to avoid attachment by the courts. The younger Sutter began to lay out lots on the land between the Fort and the Sacramento River. He hired Captain William Warner, an Army topographical engineer to survey the tract and to assist in working out the general plan. In 1849, the plan was further extended and resurveyed by Charles Coote. Sutter's Fort, a few of the blocks along the River, and the 100 foot width of M Street were the only elements not conforming within the vast rectangular network of straight 80 foot wide streets and 20 foot wide alleys .

Sacramento's location at the confluence of two rivers led to problems of flooding. In 1850, prior to the City's levee building project, a violent southeast storm struck the Sacramento area. Within several hours after the rains hit, water poured over the slough on I Street between First and Third. Several days later, the water stretched into Sacramento as far as one mile from the waterfront. Within two weeks after the floodwaters subsided, surveyors began work on establishing the location of a levee system to protect the City from future floods. The levee began at the high ground near Sutterville, ran west to the east bank of the Sacramento River, north to the mouth of the American River and east to high ground within the City.

The new wall proved inadequate when, in March 1852, high water breached the levee and flooded Sacramento once again. This time the damage was more severe. The water rushing through the breach destroyed several homes and a bridge at the foot of Third Street before it flooded the entire city. At its peak the floodwaters covered all avenues south of J Street and east of Third. They remained in this flooded state for four days before the waters subsided.

Initial development of the City occurred along the waterfront and extended out along J Street about as far as Seventh Street. By 1852, more substantial development had occurred on I, J, K, and L Streets, with other buildings scattered south and east.

Sewer construction in the City of Sacramento had begun as early as 1853, consisting of redwood plank sewers in the alleys, with no systematic plan. The City of Sacramento flooded again in 1861-1862, and the flood aroused fear of diseases. During this period, many cities in the United States suffered repeated outbreaks of malaria, cholera, typhoid, and distemper which served as the stimulus to develop a central sewage system. Lewis Mumford notes in *The City in History (1961)*, that "perhaps the greatest contribution made by the industrial town [is] the reaction it produced against its own greatest misdemeanors: and, to begin with, the art of sanitation or public hygiene."[1] A centrally planned sewer system was proposed by the City of Sacramento health board. The City of Sacramento adopted a drainage plan that included some of the important aspects of the health board's recommendations. As the system was strung together between 1864 and 1879, it came to consist of wooden, brick, and pipe sewers, and a drainage ditch to Snodgrass Slough. Through the remainder of the nineteenth century and beyond, a fully adequate sewer system remained a high priority for urban reform. In 1883, a citizen's committee offered a program that included separate drainage and sanitary sewer systems (Cultural Heritage Section, California Department of Parks and Recreation, *The People's Potties: From Filth Pit to Flush Toilet in Sacramento, 1849-1900*, unpublished ms., 1978). The nineteenth century became "the century of municipal socialism. Neither a pure water supply, nor the collective disposal of garbage waste and sewage, could be left to the private conscience". By the end of the nineteenth century the standard of one private, sanitary toilet per family connected to a public sewage system was firmly established.

As noted by Lewis Mumford in *The City in History,* sewerage problems varied with the size of the city, but increased in complexity much faster than the size of the city." Many cities were faced with the difficult decision of whether to combine or separate sanitary and storm sewer systems. Most large cities provided culverts for storm drainage, but did not treat their sewage. As cities grew and the necessity to treat their sewage became unavoidable, cities combined their systems.

The City of Sacramento had grown in population only about 5,000 per decade from 1850 to 1890. Between 1900 and 1930, the rate of growth accelerated to 20,000 every decade. The first suburban development had occurred at Oak Park, annexed to the City in 1911. The City prospered, and growth continued to force the development of lands outside the old City boundary.

Historic Period Archeological Sites

In general, the long-term street patterning of much of the City of Sacramento limits the distribution of the historic period archeological sites to within the known blocks. The only resources that may be of concern in the streets subject to impact are the brick remnants of the early City sewage system. The proposed CSS Plan involves the replacement of all of the brick sewers. The brick sewers must be evaluated for their significance as they are over 50 years in age. They are potentially eligible to the National Register of Historic Places under criterion A, as they "are associated with events that have made a significant contribution to the broad patterns of our history." Similarly, under CEQA and California Register criteria, these resources could be considered an important resource under criterion C, as potentially the last surviving example of their kind. The layout of the brick sewers is displayed on Figure 4-3 in Chapter 4, Project Description.

Historic Period Buildings and Structures

The City's Official Register Containing Structures of Architectural or Historical Significance lists a number of buildings in the CSS service area. These structures lie along the streets, along the proposed impact area. Some of these structures are also listed or determined eligible for the

National Register of Historic Places. There are also California Points of Historic Interest and California Historic Landmarks in this zone. Some of the Landmarks are represented by extant buildings or structures; other Landmarks commemorate the site of an event, route, or former location of an important building or structure.

Two structures which would be affected by the project have been recorded within the State Directory of Properties in the Historic Property Data File for Sacramento County: the Pump Station 1 and 2 facilities. This file lists and reflects the most current determinations of status for properties that have been evaluated.

The Pump Station 1 facility at Front and U Streets was built in 1908 (see Figure 7.4-1). In 1981, when the form was prepared for the structure, it was evaluated as probably not eligible for inclusion in the National Register of Historic Places. No recent evaluation has been completed, and it appears that the pump station was not considered for the City's Official Register. Pump Station 1A dates to 1956, and is too recent in construction to be evaluated for its historic significance.

The Pump Station 2 facility, also referred to as Pumping Station 2, at 915 11th Avenue was built in two sections, the older section being constructed in 1914 (see Figure 7.4-2). In 1938, the original structure was expanded to the west, which almost doubled the size of the facility. The construction of the expansion is virtually indistinguishable in appearance and design to the original section. The 1985 recording of the structure determined that the facility was potentially eligible for inclusion in the National Register of Historic Places.

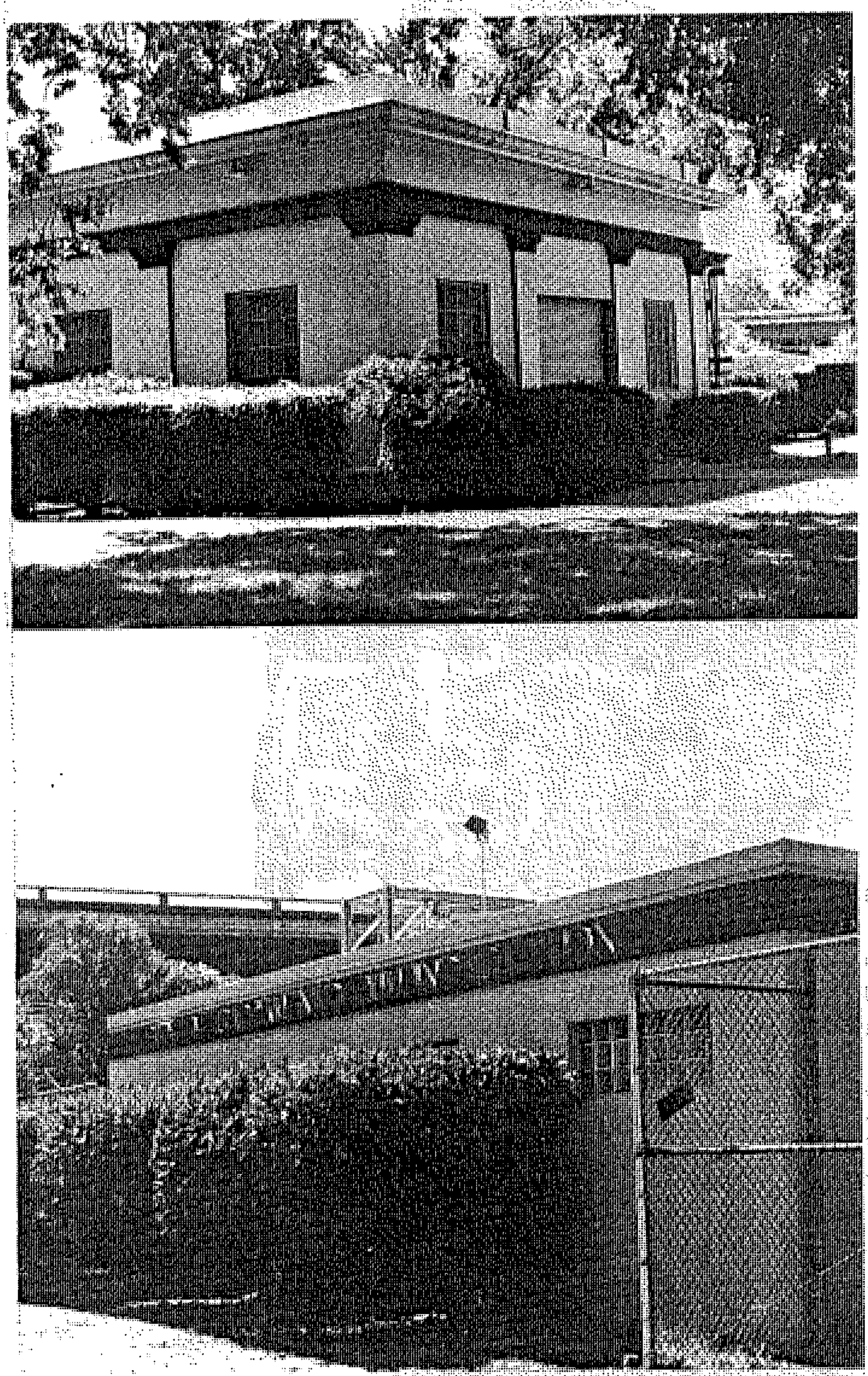
Pioneer Reservoir dates to 1979, and therefore, is too recent in construction to be evaluated for historic significance.

The records search also included the two potential regional storage sites at the UCDMC and UPR railyards sites. However, the search indicated that there are no recorded prehistoric or historic sites in or near either of these sites.

The only resources that may be of concern subject to impact are the 80 to 100 year old brick remnants of the early City sewage system that exist within the oldest part of the city, downtown (see Project Description, Figure 4-3). The project involves the replacement of all of the brick sewers.

REGULATORY CONTEXT

The treatment of cultural resources is governed by national, state and local laws and regulations. There are specific criteria for determining whether prehistoric and historic sites or objects are significant and/or protected by law. Federal and state significance criteria are concerned with the resource's integrity and uniqueness, its relationship to similar resources, and its potential to contribute important information to scholarly research. Local laws tend to focus on a resource's relationship to local history. Some resources that do not meet federal significance criteria are considered significant according to state or local criteria. The federal and state regulations that apply to the proposed Plan are discussed below.



SOURCE: Peak & Associates, July 1996.

Figure 7.4-1: Sump 1 Facility

96023

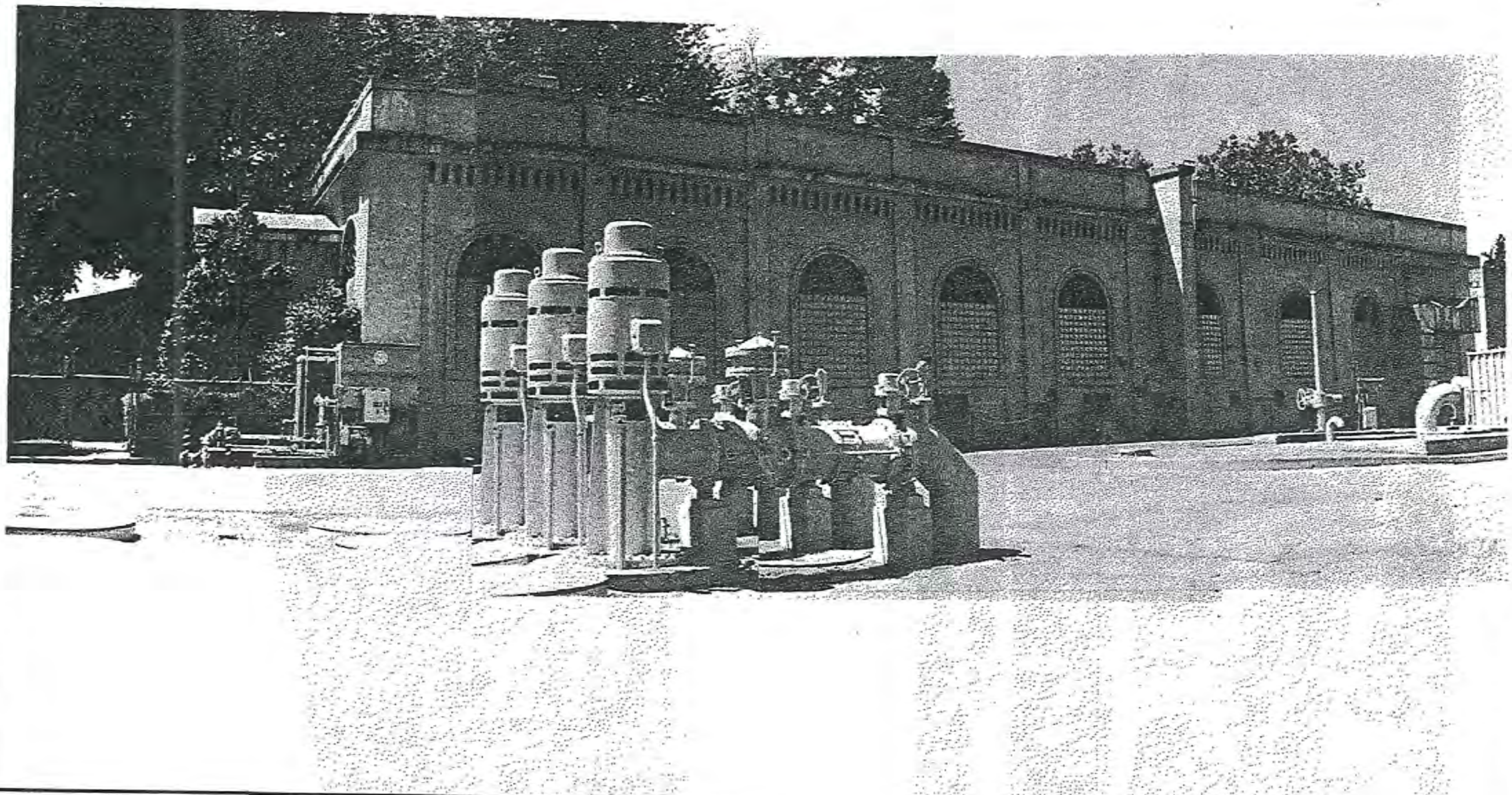


Figure 7.4-2

Sump 2 Facility

SOURCE: Peak & Associates, July 1996.

96023

National Historic Preservation Act

Under the Section 106 of the National Historic Preservation Act, the National Register of Historic Places is the United States' official list of cultural resources that are worthy of preservation. The National Register includes districts, sites, buildings, structures and objects with local, regional, state, or national significance.[2] The definition of historic property includes "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register."[3]

Due to the possibility that the City may consider federal funding in the future, the project may be required to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966 as amended (1980), and its implementing regulations, 36 CFR Part 800 et seq. To determine if an undertaking could affect NRHP-eligible properties, cultural sites (including archaeological, historical and architectural properties) would need to be inventoried and evaluated for the NRHP.

California Environmental Quality Act

CEQA applies to effects that a plan or project might have on prehistoric or historic resources, and requires public agencies to avoid damaging effects on archeological resources whenever feasible. If avoidance is not feasible, the importance of the archeological site must be evaluated.

Enacted in 1992, AB 2881 amended CEQA to make it easier to identify and define historical resources, and established the California Register of Historical Resources as the authoritative listing of California's significant historical resources for the purposes of CEQA. The California Register automatically includes properties listed in, or formally determined eligible for, the National Register of Historic Places, as discussed earlier in this section. AB 2881 also more clearly defined the actions that may have an adverse effect on historical properties.

City of Sacramento General Plan

The following goals and policies from the City of Sacramento General Plan are applicable to the proposed project:

Goal D: **Work with the County of Sacramento to identify, protect, and enhance physical features and settings that are unique to the area to the maximum feasible.**

Policy: Work with all interested parties to protect ancient burial grounds threatened by development activity and preserve their artifacts, either on-site or at a suitable relocation, to the extent feasible.

IMPACTS AND MITIGATION

Introduction to the Analysis

The following section describes impacts on cultural resources that could occur with the development of the proposed CSS Plan. This section also identifies the standards of significance for cultural resource impacts resulting from the construction activities associated with the proposed CSS Plan and alternatives.

Method of Analysis

In addition to consultation with the North Central Information Center at California State University Sacramento, previous environmental documents for projects in the area have been reviewed, and a field survey has been conducted for the Plan site. Areas of historic or prehistoric concern, particularly those where construction could occur as a result of Plan development, have been identified. The proximity of potential development areas to cultural resources have been identified.

Standards of Significance

For the purpose of this EIR, an impact is considered significant if the proposed project would:

- result in the damage or destruction of prehistoric sites or artifacts that could meet City, State CEQA (Appendix K), Public Resources Code (PRC) § 21083.2, Office of Historic Preservation (SHPO), and/or federal (NHRP) criteria for significance; or

- result in the damage or destruction of historical structures, features, artifacts, landscaping or sites that could meet City, State CEQA (Appendix K), Public Resources Code (PRC) § 21083.2, Office of Historic Preservation (SHPO), and federal criteria (NHRP) for significance. For this EIR, any structure over 45 years old is considered potentially historically significant.

These standards and the accompanying thresholds and criteria that establishes them are discussed in detail below.

CEQA Thresholds

For purposes of CEQA, thresholds of significance for cultural resources are based on Supplementary Document J - Archaeological Impacts, and the following criteria:

A.1 Association with an event or person of recognized significance in California or American History.

A.2 Association with an event or person of recognized scientific importance in prehistory.

B. Can provide information which is both of demonstratable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions.

C. Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind.

D. Is at least one hundred years old and possesses substantial stratigraphic integrity, or

E. Involves important research questions that historical research has shown can be answered only with archaeological methods.

Under CEQA, a project that may cause a substantial adverse change in the significance of an historical resource is considered to be a project that may have a significant effect on the environment. Any resource is presumed to be significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant. A lead agency may determine whether a resource is a historical resource even if (1) the resource is not listed or determined eligible for listing in the California Register of Historical Resources, (2) the site is not included in a local register of historic resources, or (3) otherwise not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 of the Public Resources Code.

NHRP Thresholds

Under the federal laws, decisions regarding management of cultural resources hinge on determinations of their significance (36 CFR 60.2). As part of this decision-making process the National Park Service has identified components which must be considered in the evaluation process, including:

- criteria for significance;
- historic context; and
- integrity.

Significance of cultural resources is measured against the NRHP criteria for evaluation:

- The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and,

  (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

  (b) that are associated with the lives of persons significant in our past; or

(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

The historic context is a narrative statement "that groups information about a series of historic properties based on a shared theme, specific time period, and geographical area" (*Federal Register* Volume 48[190]:44739, September 29, 1983). To evaluate resources in accordance with federal guidelines, these sites must be examined to determine whether they are examples of a defined "property type." The property type is a "grouping of individual properties based on shared physical or associative characteristics" (*Federal Register).* Through this evaluation, each site is viewed as a representative of a class of similar properties rather than as a unique phenomenon.

A well developed historical context helps determine the association between property types and broad patterns of American history. Once this linkage is established, each resource's potential to address specific research issues can be explicated.

For a property to be eligible for listing in the NRHP it must meet one of the criteria for significance (36 CFR 60.4 [a ,b, c, or d]) and retain integrity. Integrity is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period."

Within the concept of integrity, there are seven aspects or qualities that define integrity in various combinations: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity, a property will possess several or usually most of these aspects.

In sum, the assessment of a resource's NRHP eligibility hinges on meeting two conditions:

- the site must possess the potential to be eligible for listing in the NRHP under one of the evaluation criteria either individually or as a contributing element of a district based on the historic context that is established; and
- the site must possess sufficient integrity; i.e., it must retain the qualities that make it eligible for the NRHP.

Post-it® Fax Note 7671	Date 10/1/97 # of pages ▶ 2
To MELINDA PEAK	From R BAYNA
Co./Dept. PEAK & ASSOC.	Co. CITY OF SAC
Phone # 939-2405	Phone # 433-6625
Fax # 939-2406	Fax # 433-6652

sources

Impacts and Mitigation Mea

Impact

7.4-1 Subsurface Prehistoric Resources (Phase 1)

PP Implementation of Phase 1 of the CSS Plan could result in the discovery of unknown subsurface prehistoric resources or portions of known prehistoric resources during project excavation. Although the likelihood for the occurrence of subsurface resources is quite low, the possibility for such a discovery does exist. Cultural resources exposed during construction, excavation, or related project activities could be damaged, destroyed, or removed from their cultural context. This is considered a ***significant impact.***

AA Implementation of the No Project Alternative could result in the discovery of unknown subsurface prehistoric resources or portions of known prehistoric resources during project excavation. The No Project Alternative would include rehabilitation to existing pipelines, but limited excavation would be involved for these rehabilitative activities. Although the likelihood for the occurrence of subsurface resources is quite low, the possibility for such a discovery does exist, and must be considered a ***significant impact.***

AB Implementation of the Sewer Separation Alternative could result in the discovery of unknown subsurface prehistoric resources or portions of known prehistoric resources during project excavation. Although the likelihood for the occurrence of subsurface resources is quite low, the possibility for such a discovery does exist, and must be considered a ***significant impact.***

Mitigation Measures

7.4-1 Subsurface Prehistoric Resources (Phase 1)

PP,AA,AB Implementation of the following mitigation measure would reduce this impact for PP, AA and AB to a *less-than-significant level.*

The City of Sacramento shall ensure that any construction activities comply with the following:

An archeological monitor shall be retained to oversee any subsurface work occurring in the immediate vicinity of the six recorded prehistoric sites. A confidential map with the locations of these sites will be on file with the Project Manager or other appropriate individual, who will arrange to have the monitor present for the areas deemed sensitive. The areas monitored as well as the remainder of the construction shall be subject to the conditions below.

In the event of the discovery of any subsurface archeological artifact, feature or deposit during construction activities, work within 100 feet of the find shall be halted, and an archeologist will be contacted for an in-field evaluation.

If the resource is determined to be significant, an appropriate plan for resource preservation or site excavation must be developed and implemented.

If bone is found that appears to be human, work within 100 feet of the find shall be halted, and the Sacramento County Coroner must be contacted. If the remains are determined to be of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC). The NAHC shall determine the "most likely descendant", who will work to develop a plan for the area of the finding. Construction work shall remain halted in the vicinity of the discovery until the plan can be implemented.

<u>Impact</u>

7.4-2 Historic Buildings (Phase 1)

PP Implementation of Phase 1 of the CSS Plan would involve rehabilitation and replacement of existing deteriorated sewer lines throughout the CSS service area (refer to Impact 7.4-5 for impacts relative to the old brick sewers). Although extensive trenching would be involved in city streets and alleys, this construction would be contained within existing public utility rights-of-way and would not encroach upon private property, which could contain historic buildings. In addition, as discussed under "Noise" in the Initial Study (refer to Appendix 15-1), vibration impacts would not be considered significant due to the type of equipment that would be utilized for theses modifications. Therefore, this impact is considered ***less-than-significant.***

AA Relative to historic buildings, the No Project Alternative, would not create significant impacts. Rehabilitation and replacement of existing pipelines would still occur, but this would not affect any buildings since all construction would be within existing utility rights-of-way (refer to Impact 7.4-5 for impacts relative to the old brick sewers). No other aspect of AA could potentially involve historic buildings. This impact is considered ***less-than-significant.***

AB The Sewer Separation Alternative would involve Phase 1 of the proposed CSS Plan, but not Phase 2. In addition to rehabilitation and replacement of sewer lines, this alternative would create a completely new sanitary sewer line adjacent to the existing combined sewer lines. Although extensive trenching would be involved in city streets and alleys, this construction would be contained within existing public utility rights-of-way and would not encroach upon private property, which could contain historic buildings. In addition, as discussed under "Noise" in the Initial Study (refer to Appendix 15-1), vibration impacts would not be considered significant due to the type of equipment that would be utilized for these modifications. Therefore, this impact is considered ***less-than-significant.***

Mitigation Measure

7.4-2 Historic Buildings (Phase 1)

PP,AA,AB *No mitigation measures would be required for PP, AA or AB.*

Impact

7.4-3 Historic Structure--Pump Station 1 (Phase 1)

PP,AB The Pump Station 1 facility has been altered in the interior through equipment changes and modifications over time, although the external appearance has remained fairly consistent since its initial construction in 1908. The proposed alterations from the proposed project and the Sewer Separation Alternative would affect the interior only, and would avoid any impact to the exterior of the structure. Therefore, this is considered a ***less-than-significant impact.***

AA Implementation of this project alternative would only involve minor equipment modifications internal to the Pump Station 1/1A facility. Therefore, ***no impact*** would occur.

Mitigation Measure

7.4-3 Historic Structure--Pump Station 1 (Phase 1)

PP,AA,AB *No mitigation measures would be required for PP, AA or AB.*

Impact

7.4-4 Historic Structure--Pump Station 2 (Phase 1)

PP,AB No exterior alterations to the Pump Station 2 building are planned for either the proposed project or the Sewer Separation Alternative. The structures that would be constructed within the vicinity would not be immediately adjacent to Pump Station 2. As a result, they would not interfere with visual access to the historic structure, which could diminish the historical integrity of the Pump Station 2 facility. The new facilities would alter and/or replace existing features of the Riverside Wastewater Treatment Plant. However, these features are not of the same era as Pump Station 2, and do not substantially affect the historic context of Pump Station 2. For these reasons, this impact is considered ***less-than-significant.***

AA Implementation of the No Project Alternative would only involve minor modifications within the Pump Station 2 facility. Therefore, ***no impact*** would occur.

Mitigation Measure

7.-4 Historic Structure--Pump Station 2 (Phase 1)

PP,AA,AB *No mitigation measures would be required for PP, AA or AB.*

Impact

7.4-5 Historic Structure--Sewers (Phase 1 and Phase 2)

PP Implementation of Phase 1 would result in the replacement of the sewer system for public health and safety reasons (see Project Description, page 4-17 and 4-27). Since the sewers are between 80 and 100 years old, exceeding the 45 year criterion established by the SHPO, they are potentially eligible to the National Register of Historic Places under criterion A, as they "are associated with events that have made a significant contribution to the broad patterns of our history," replacement of the sewers would be considered a significant impact. The oldest sewers are located in the downtown area and most of the City's original sewers were constructed of brick. As mentioned earlier, the achievements of the nineteenth century created sewer systems that are still in use today in downtown Sacramento. The invention of large glazed drains, brick sewers and cast iron pipes made possible the conveyance and disposal of sewage. Similarly, under CEQA and California Register criteria, these resources could be considered an important resource under criterion C, as potentially the last surviving example of their kind. For these reasons, the proposed project would create a ***significant*** impact.

AA Under the No Project Alternative, rehabilitation and replacement of portions of the CSS pipeline system would still occur. Although impacts may be not as extensive as under the proposed project, the sewers would still be replaced (refer to discussion under PP). This impact is considered to be ***significant***.

AB Since this alternative would be adding new sewer lines and replacing the existing sewers, which would still be utilized to convey stormwater, implementation of this project alternative the brick sewers would still be replaced (refer to discussion under PP) will not result in disturbance to the brick sewers. This impact is considered ***significant***.

Mitigation Measure

7.4-5 Historic Structure--Sewers (Phase 1 and Phase 2)

PP,AA,AB Implementation of the following measures would reduce the magnitude of this impact for PP, AA and AB, but not to a less-than-significant level. Therefore this impact remains *significant and unavoidable.*

The City of Sacramento shall document the history of the construction of the sewer system, and record the physical extent, condition and appearance of the extant portions of the early system to determine its historical significance.

Since the sewer system has not been documented and recorded, it is unknown whether the sewers would meet the criteria related to integrity, as listed in the Standards of Significance. As such, the impact must be considered ***significant and unavoidable*** until studies can determine otherwise.

Impact

7.4-6 Subsurface Prehistoric Resources (Phase 2)

PP Implementation of Phase 2 could result in the discovery of unknown subsurface prehistoric resources or portions of the known prehistoric resources during project excavation for underground storage facilities at UCDMC, UPR or other sites not identified. Although the likelihood for the occurrence of subsurface resources is quite low, the possibility for such a discovery does exist. Cultural resources exposed during construction, excavation, or other related project activities could be damaged, destroyed, or removed from their cultural context. This is considered a ***significant impact.***

AA,AB Implementation of project alternatives do not involve the underground regional storage facilities. Therefore, ***no impact*** would occur.

Mitigation Measures

7.4-6 Subsurface Prehistoric Resources (Phase 2)

PP Implementation of the following mitigation measure would reduce this impact for PP to a *less-than-significant level.*

Implement Mitigation Measure 7.4-1.

Mitigation Measure

AA, AB *No mitigation measures would be required for AA or AB.*

Cumulative Impacts

Impact

7.4-8 Cumulative Loss of Cultural Resources

PP,AB As urban development increases throughout the Sacramento General Plan Update (SGPU) Area, prehistoric sites and artifacts may be unearthed and damaged or destroyed. Historical sites and structures may be destroyed to make room for new development. Even if cultural resources are adequately recorded, removal and/or destruction from their place of origin reduces their value as resources. As stated above, the extent of cultural resources in the project area is not fully known, and damage or destruction of such resources can be mitigated on a project-specific basis. However, any loss of cultural resources associated with the proposed project would contribute to a region-wide impact that cannot be remedied. Therefore, this is considered a ***significant impact.***

AA The No Project Alternative would not result in any damage or destruction of cultural resources; therefore, it would not contribute to the loss of such resources and ***no impact*** would occur.

Mitigation

7.4-8 Cumulative Loss of Cultural Resources

PP,AB Implementation of the following mitigation measures would reduce the magnitude of the cumulative impacts to cultural resources of PP and AB, but not to a less-than-significant level. Therefore, the impact remains *significant and unavoidable*. No mitigation measures would be required for AA.

Implement Mitigation Measure 7.4-1.

ENDNOTES

1. Lewis Mumford, The City in History, Harcourt, Brace & World Inc., A Harbinger Book, 1961.

2. California Office of Historic Preservation. *Historic Preservation in California: A Handbook for Local Communities*, December 1986.

3. Advisory Council on Historic Preservation, *Fact Sheet: Working with Section 106*: Citation from 36 CFR §800.2(e).

8. GROWTH-INDUCING IMPACTS

8. GROWTH-INDUCING IMPACTS

INTRODUCTION

As is required by CEQA, an EIR must include a discussion of the ways in which a proposed project could directly or indirectly foster economic development or population growth, and how that growth would, in turn, affect the surrounding environment (CEQA Guidelines Section 15126[g]). Under CEQA, induced growth is not considered necessarily detrimental or beneficial (CEQA Guidelines, Section 15126[g]). Growth can be induced in a number of ways, either through the elimination of obstacles to growth, or through the stimulation of economic activity within the region. It should be noted that the creation of growth-inducing potential, however, does not automatically lead to growth. The discussion of the removal of obstacles to growth relates directly to the removal of infrastructure limitations or regulatory constraints that could result in growth unforeseen at the time of project approval. EIRs on infrastructure projects have sought to distinguish between "growth-inducing" and "growth-accommodating" impacts. The distinction is intended to separate growth impacts within expected or planned levels of population growth and levels of service capacities, and growth impacts that would exceed projected population growth and public service capacities. Therefore, for purposes of this analysis, induced growth is considered a significant impact only if it directly or indirectly affects the ability of agencies to provide needed public services because the project either fostered growth or created capacity to accommodate growth above and beyond what was permitted by the appropriate general plan or contained in recent growth projections, and that in some way, could be demonstrated to significantly affect the environment. The growth-inducing impacts associated with the CSS Plan were evaluated based on a review of the SGPU and more recent growth projections developed by SACOG in consultation with the City.

This section evaluates the potential growth-related impacts which could result from the Combined Sewer System Rehabilitation and Improvement Plan (CSS Plan) and project alternatives.

BACKGROUND

Existing Growth

The CSS service area encompasses 11,300 acres (see Figure 3-1 in Chapter 3, Overview of Existing Combined Sewer System). The total population of the CSS service area was 101,431 in 1995. Total employment within the service area was estimated at 140,231. Approximately 7,500 acres of the service area includes Downtown, East Sacramento, and Land Park areas. These areas contribute both sanitary sewage and drainage flows to the CSS. A second area of approximately 3,700 acres encompasses the River Park, California State University, and far eastern Sacramento areas. This area contributes only sanitary flows to the CSS. Lastly, a third area of approximately 100 acres located in southern Sacramento contributes only storm drainage flows.

Planned Growth

Planning and Growth Regulations

The City is provided with a system of planning and growth regulation under the California Government Code Sections (65000-66025) and local ordinance that allows it to direct the amount and location of land available for development, the timing of land availability, and the conditions under which it may be used. The regulatory mechanisms include:

1. City of Sacramento General Plan
2. City of Sacramento Comprehensive Zoning Ordinance
3. State and local subdivision law
4. California Environmental Quality Act
5. Public hearing process

City of Sacramento General Plan

In 1988, the Sacramento General Plan Update (SGPU) was adopted. The SGPU is a 20-year plan strongly oriented toward physical development of land uses, a circulation network and supporting public facilities and services. The document serves as the principal planning tool for City to use in evaluating public and private building projects and municipal service improvements. The overall thrust of the SGPU is to set or reaffirm planning policy for a maturing urban area, one currently experiencing growth pressures. The policy emphasis is on how best to conserve what development exists and how to maximize the quality of development as it occurs on remaining vacant lands, while requiring that a full range of public services be offered. The SGPU's growth and development strategy is expressed in terms of the amount of land needed to accommodate development, the appropriate types, densities and function of uses for each land use designation, as well as the geographic distribution of future land uses under the Plan. In addition, the SGPU establishes a broad policy framework within which a number of more focused plans and implementation programs provide greater detail for both specific geographic areas of the City as well as for Citywide plans that address specific services and facilities. Because these more focused plans are part of the City's General plan, their goals and recommendations are consistent. Their role is to define, at a sub-level of the City, the goals and recommendations of the SGPU. The CSS Improvement and Rehabilitation Plan is an example of such a focused plan. Its role is to implement the SGPU drainage and sewerage goals and policies, as well as mitigation measures in the SGPU EIR for the CSS service area. As discussed in Chapter 4, Project Description, the CSS Rehabilitation and Improvement Plan constitutes the mitigation for new growth as identified in the SGPU EIR. The SGPU EIR identified significant and adverse impacts to the City's existing sewer and storm drainage systems, including the CSS. The EIR identified mitigation measures to address these concerns. Implementation of the CSS Rehabilitation and Improvement Plan would alleviate the significance of these impacts and reduce them to a less than significant level.

Community Plans

In addition to the SGPU, the City has adopted the Sacramento Central City Community Plan (CCCP, 1980, amended 1993) that encompasses the downtown portion of the CSS Plan area. The CCCP was developed to address more specific planning issues unique to the Central City. The East Sacramento, East Broadway, and Land Park Community Plans have not been updated since they were written in the 1970s and have been superseded by the 1988 General Plan Update.

City of Sacramento Comprehensive Zoning Ordinance

In addition to the land use designations, the City of Sacramento Comprehensive Zoning Ordinance regulates the location, height, and size of buildings or structures, yards, courts, open spaces, amount of building coverage permitted in each zone, and population density.

Capital Improvement Program

To ensure that infrastructure improvements keep pace with planned development, the City is required under California Government Code (§ 65000 et seq) to submit annually a five-year Capital Improvement Plan (CIP) that outlines proposed public works projects for the ensuing fiscal year. The CIP is reviewed for consistency with the SGPU by the City Planning Commission and City Council. The capital projects identified in the CSS Plan will be programmed in the CIP. One role of the CIP is to set forth a program to upgrade deteriorating infrastructure which helps to stabilize and rehabilitate older areas of a City.

GROWTH INDUCING EFFECTS OF THE PROPOSED CSS PLAN (PP)

As described in Chapter 4, Project Description, the proposed improvements (Phase 1 and 2) contained within the CSS Plan include a phased approach that incorporates a 30-year timeframe. Phase 1 improvements would take place over an estimated ten year period and consist of increasing the capacity for Pump Stations 1/1A and 2 and conversion of Pioneer Reservoir into a primary treatment facility, as well as rehabilitating and/or replacing selected sewer lines, mains and interceptors. At the completion of Phase 1, the benefits of these improvements on the performance of the CSS would be evaluated and based on those findings, select Phase 2 improvements would be gradually implemented over several years. Phase 2 improvements consist of larger structural options designed to alleviate flooding and outflows. The replacement and/or rehabilitation of existing pipelines would occur within both Phase 1 and 2.

The CSS service area encompasses an area of the City that is highly developed and has experienced substantial growth over the last 100 years. Full buildout of the service area is comparatively close. Growth in this area is the direct result of a combination of factors, principally involving social perceptions of opportunities for profitable investment and population migration to this area because of job opportunities, affordable housing and environmental amenities. Because this growth has been adequately planned for and evaluated in previous documents, including the SGPU and EIR, the CCCP, the SP Railyards/Richards Boulevard EIR and the R Street Corridor EIR, the CSS is not considered to have a "significant" adverse growth-inducing impact on the environment. All of the impacts attributable to urban growth forecast in the SGPU are not of a direct consequence to the CSS Plan. Rather, they are a result of implementing the policies in the SGPU within the service area. As such, these impacts are addressed in the SGPU EIR. The proposed improvements and rehabilitation items are necessary in order to serve both the existing development as well as planned development projected in the SGPU for the service area. Since the CSS system is for all practical purposes a "closed" system (independent from the City's other storm drain and sanitary sewer systems), it is not likely that implementation of the CSS Plan would allow undeveloped areas outside of the service area to develop based on the improvement of this infrastructure system. The CSS Plan has not been designed with excess capacity that could trigger or induce unplanned growth following its completion. The Plan would enhance the efficiency of the current system in order to allow it to function in accordance with current design standards.

Table 8-1, CSS Service Area--Housing, Population, and Employment Projections through Buildout, shows that the Central City is the only community within the CSS service area that possesses development potential. Figure 8-1 illustrates where this growth is projected to occur. The majority of the growth will be located in the SP Railyards/Richards Boulevard area and the R Street Corridor. Remaining development potential is limited to vacant in-fill projects, dispersed throughout the service area. According to Table 8-1, only 65 percent of the projected total Central City housing has been developed as of 1995, leaving a remaining housing capacity of 35 percent and population capacity of 37 percent. The Land Park, East Sacramento, and East Broadway neighborhoods combined have a remaining housing capacity of approximately 8 percent and a population capacity of about 5 percent. Assuming full buildout of these areas by the year 2015 and implementation of the proposed CSS Plan, it has been estimated that no greater than a 5 percent increase in total flow volume through the CSS would occur over existing conditions.[1] This expected increase has been accounted for and would be accommodated by the proposed CSS Plan. It should be noted that under future conditions without the CSS Plan improvements, outflows would increase. However, with implementation of the CSS Plan the total net volume of outflows with cumulative development would decrease substantially.

Phase 1

Phase 1 is anticipated to take a minimum of 10 years to construct. It is highly unlikely that implementation of Phase 1 during this 10-year period would hasten, intensify or shift growth from other parts of the region to areas within the CSS service area. However, if during implementation of the Phase 1 improvements, either planned infill development or unanticipated development such as add-on projects or rezones require additional system capacity, modifications to the system (i.e., ICALS, upsized sewers, or fees) can be implemented to accommodate this type of development on an as-needed basis. The City has developed a policy that requires any significant increase in storm water and waste water inflows over the present level to be mitigated by the developer. If a proposed development project is determined to have a significant impact on the CSS, the project proponent is required to develop a mitigation plan which is acceptable to the City. The mitigation plan may include on-site storage with retention, sewer main up-sizing, diversion of flows, rerouting or replacement of pipes, connection to separated areas, and/or other mitigation measures depending on the site. If full mitigation of system-wide impacts cannot be accomplished because of site constraints or other factors, the development must enter into a Mitigation Agreement. The agreement contains the following requirements (City of Sacramento Department of Public Works, 1994):

TABLE 8-1

CSS SERVICE AREA
HOUSING, POPULATION AND EMPLOYMENT PROJECTIONS THROUGH BUILDOUT

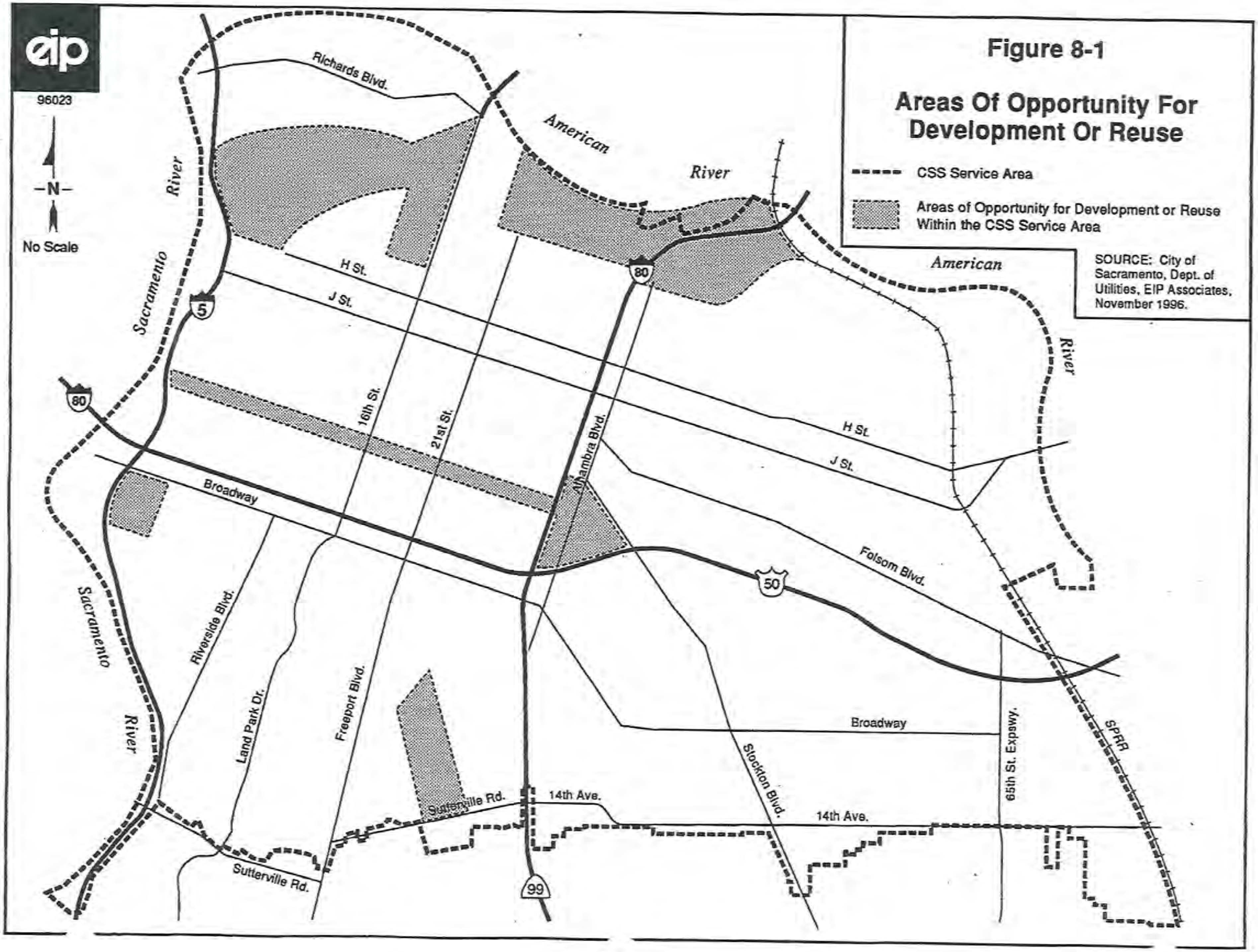
CSS Service Area	Year	Single-Family	Multi-Family	Total Housing	Total Population	Total Employment Sq. Footage[1]	Total Employment
Central City	**1995**	2800	15727	18527	34266	35157323	96731
	2005	3012	18002	21014	39156	38604481	112616
	2015	3222	21692	24194	46965	46995834	133856
	2020	3248	22525	25773	48539	N/A	141665
	Buildout	3105	25589	28694	54448	N/A	205781
Land Park	**1995**	5703	2162	7865	18330	5473344	9778
	2005	5820	2268	8088	18914	5657673	10204
	2015	5979	2297	8276	19256	3663897	10652
	2020	5980	2309	8289	19159	N/A	10656
	Buildout	5987	2309	8296	19170	N/A	11428
East Sacramento East Broadway	**1995**	15677	5006	20686	48835	19500232	33722
	2005	15791	5052	20846	49109	20726672	36179
	2015	16039	5092	21138	49539	13847566	36808
	2020	16077	5098	21182	49431	N/A	36863
	Buildout	16026	5194	21225	49533	N/A	37815

[1]The total employment square footage is only an estimate based on an average square footage divided by the total number of employees.

SOURCE: 1995 Sacramento Area Council of Governments Projections; City of Sacramento, 1996.

Figure 8-1

Areas Of Opportunity For Development Or Reuse



SOURCE: City of Sacramento, Dept. of Utilities, EIP Associates, November 1996.

- implementation of Mitigation Monitoring Plan (if any);
- payment of any and all fees to implement the Combined System Improvement Projects;
- waiver of all rights to protest future fees, assessment districts, Mello-Roos districts, etc;
- consent to all conditions by any lienholder; and
- indemnification of the City in implementing the Agreement.

This mitigation strategy is proposed to continue, as described in Chapter 3, Overview of the Existing System. It should be noted that any such proposed development projects must first receive discretionary approval from the Sacramento City Council before proceeding.

Implementation of the Phase 1 improvements is intended to avoid a potential building moratorium that the CVRWQCB could enact if the City does not address outflows of combined wastewater to City streets and unpermitted CSOs to the Sacramento River from the CSS. The only component of Phase 2 which may be implemented during Phase 1 is the installation of ICALS. This may be necessary in certain "wet areas" to eliminate immediate concerns of local flooding and outflows. Therefore, with respect to Phase 1 improvements, the CSS Plan would not be considered growth-inducing.

Phase 2

Implementation of Phase 2 improvements would, similar to Phase 1 improvements, be designed to meet the current and future demands placed on the CSS and rectify the existing problems that the current population experiences within this service area. At this time it is difficult to assess the growth inducing effects attributable to the proposed Phase 2 improvements, because the benefits of these improvements on the performance of the CSS would not be evaluated until completion of Phase 1. Based on those findings, select Phase 2 improvements would be gradually implemented over several years, as needed. It is possible that the proposed new development that would occur at the UPR railyards and the UCD Medical Center Site would place additional demands on the CSS beyond that anticipated in the Plan. Also, it is unclear whether the development proposed at the UPR railyards and under the long-range development plan currently under preparation for the UC Medical Center site is included within the growth projections shown in Table 8-1. However, any additional growth and development that may occur at these sites cannot occur without the discretionary approval of the City Council. As such, it is believed that the proposed CSS Plan does not meet the standards for significant growth-inducement as described at the beginning of this chapter.

GROWTH INDUCING EFFECTS OF NO PROJECT (AA)

In 1990, the CVRWQCB issued a CDO prohibiting outflows to City streets and unpermitted CSOs to the Sacramento River from the CSS. The outflows and the potential threat to public health were the main focus of the CDO. In 1996, after identifying what improvements were needed to address these issues and the preparation of the CSS Plan, the CVRWQCB rescinded the CDO. During the period between 1990 and 1996, the City approved several new projects that were identified as having a significant impact on the CSS unless these projects implemented certain mitigation measures. These measures include on-site storage with retention and or detention, sewer main up-sizing, diversion of flows, rerouting or replacement of pipes, connection to separated areas, and/or the payment of fees. It is assumed for purposes of the No Project Alternative that these strategies would continue to be implemented for a period of time if the proposed CSS Plan was not approved. Implementation of this mitigation strategy can be likened to a "band-aid" approach in solving the various CSS problems. As such, it is assumed that if periods of high volume outflows or CSOs to the Sacramento River were to occur, the CVRWQCB would reimpose another CDO, if these issues were not immediately addressed by the City. Without a permanent solution in place a building moratorium would likely be imposed and all growth and development activities in the CSS service area would cease under the No Project alternative.

GROWTH INDUCING EFFECTS OF SEWER SEPARATION (AB)

The Sewer Separation alternative proposes to install a separated sewer system in contrast to the existing combined system. The existing combined system would be converted to a separate stormwater drainage system. Like the proposed project, the separated system is intended to serve both existing development in the CSS service area as well as the development planned for in the SGPU. For the reasons described for the proposed project, the sewer separation alternative is not expected to result in a growth inducing impact since the future growth is already planned for and has been approved by the City Council. The separated system would allow this development to occur per the SGPU. Therefore, no growth inducing impacts are expected as part of this alternative.

ENDNOTES

1. Telephone conversation with Richard Dalrymple, City of Sacramento Department of Utilities, November 5, 1996. The percent increase assumes a 10-year storm event.

9. CUMULATIVE IMPACTS

9. CUMULATIVE IMPACTS

INTRODUCTION

The CEQA Guidelines (Section 15130) require that an EIR discuss the cumulative and long-term effects of the proposed project that adversely affect the environment. The CEQA Guidelines defines cumulative impacts as two or more individual effects that, when considered together, create a considerable environmental impact, or that compound or increase other environmental impacts.

Development of the proposed CSS Plan in conjunction with the buildout of the CSS service area would contribute to cumulative environmental impacts. This cumulative development is assumed to be within the anticipated buildout planning horizon of the City of Sacramento General Plan.

The cumulative effects of the proposed CSS Plan are identified and discussed within Sections 7.2 through 7.4 in Chapter 7, as applicable.

CUMULATIVE IMPACTS

The following lists the cumulative impacts that were identified in Chapter 7:

7.2 Water Quality

7.2-5 Cumulative mercury loading in Sacramento River (Phase 1 and Phase 2)

7.3 Noise

7.3-3 Noise from operation of the automatic screen cleaner proposed for Pump Station 2, in combination with increased noise from other sources in the vicinity, could result in a significant cumulative effect at nearby off-site residences.

7.4 Cultural Resources

7.4-8 Cumulative Loss of Cultural Resources

10. IRREVERSIBLE (UNAVOIDABLE) ENVIRONMENTAL IMPACTS

10. IRREVERSIBLE (UNAVOIDABLE) ENVIRONMENTAL IMPACTS

INTRODUCTION

This chapter identifies impacts that could not be eliminated or reduced to a less-than-significant level by mitigation measures as part of the CSS Plan or other mitigation measures that could be implemented. The final determination of significant impacts will be made by the City Council of the City of Sacramento as part of their certification action.

SIGNIFICANT UNAVOIDABLE IMPACTS

There are two significant and unavoidable impacts that would occur under the proposed CSS Plan or the alternatives, cultural resources (Impact 7.3-5) and cumulative water quality (7.1-5). The impact to cultural resources relates to the replacement of 80 to 100 year old sewers with modern pipelines. Since the sewers are between 80 and 100 years old, exceeding the 45 year criterion, and they are potentially eligible to the National Register of Historic Places under criterion A, as they "are associated with events that have made a significant contribution to the broad patterns of our history", replacement of the sewers would be considered a significant impact. Similarly, under CEQA and California Register criteria, these resources could be considered an important resource under criterion C, as potentially the last surviving example of their kind.

Since the sewer system has not been documented and recorded, it is unknown whether the sewers would meet the criteria related to historical integrity, as listed in the Standards of Significance. As such, the impact must be considered ***significant and unavoidable*** until studies can determine otherwise.

The impact to cumulative water quality relates to the proposed project's contribution to mercury levels in the Sacramento River which currently often exceed water quality standards. Implementation of the proposed project would minimize the project's contribution to mercury levels in the river. In addition, the Toxic Pollutant Control Program is expected to facilitate a coordinated local and regional approach towards addressing the mercury problem. Even with implementation of specific mercury-control measures that could be developed as a result of the proposed CSS Plan or Sacramento River Toxic Pollutant Control Program implementation, the City cannot guarantee that other sources of mercury associated with existing or planned development in other areas in the Sacramento River Watershed would not increase or continue to contribute to mercury levels in the Sacramento River exceeding water quality standards because compliance falls within other jurisdictions to enforce and monitor. For this reason, the City must consider the impact ***significant and unavoidable.***

11. EIR AUTHORS AND PERSONS CONSULTED

11. EIR AUTHORS AND PERSONS CONSULTED

CITY OF SACRAMENTO

Planning Division/Environmental Services Section

Project Manager	Joe Broadhead

EIP ASSOCIATES

Project Director	Brian D. Boxer, AICP
Project Manager	David M. Melko
Deputy Project Manager	Kendra Ryan
Project Assistant	Christine Kronenberg

EIR AUTHORS

Water Quality	Alice Tackett, Catherine McEfee
Noise	Mike Weber
Cultural Resources	Melinda Peak, Peak & Associates, Rochelle Davisson, Adrienne Graham
Growth Inducement	Christine Kronenberg, David Melko
Production	Emma Gill
Word Processing	Mark S. Biegaj, Sam Gray
Graphics	Mark S. Biegaj

PERSONS AND AGENCIES CONSULTED

Rick Batha, Utilities Department, City of Sacramento
Craig Chalmers, Utilities Department, City of Sacramento
Kelly Grieve, Sacramento Area Council of Governments
Mary James, Sacramento Regional Wastewater Treatment Plant
Deborah Jones, Sacramento Regional Transit District
Tom Maples, University of California, Davis, Medical Center
Gary Reents, Utilities Department, City of Sacramento
Tom Rush, University of California, Davis, Medical Center
Gwen Owens, City of Sacramento
John Tomco, Consulting Engineer
Bridgette Williams, Planning and Development Department, City of Sacramento

12. LIST OF ACRONYMS

12. LIST OF ACRONYMS

ASTM: American Society for Testing and Materials Standards

Cal-EPA: State of California, Environmental Protection Agency

Caltrans: California Department of Transportation

CCR: California Code of Regulations

CDMG: California Division of Mines and Geology

CDO: Cease and Desist Order

CEQA: California Environmental Quality Act

CFR: Code of Federal Regulations

cfs: Cubic feet per second

CHP: California Highway Patrol

CSOs: Combined sewer overflows, which are intentional or unintentional overflows from the combined sewer system to a receiving water located "outside" of the system.

CSS: Combined Sewer System

CVRWQCB: Central Valley Water Quality Control Board

CWA: Clean Water Act

CWCS: City of Sacramento Combined Wastewater Collection and Treatment System. This includes the existing combined sewer system, pumping stations at Sumps 1, 1A and 2, the Flow Control Structure at Sump 2, Pioneer Interceptor and Reservoir, CWTP, and the force main interceptors connecting these facilities.

CWTP: City of Sacramento Combined Wastewater Treatment Plant

DTSC: Department of Toxic Substances Control

EPA: Environmental Protection Agency

ICALS: Inflow Control and Local Storage

LRDP:	Long Range Development Plan
MGD:	Million gallons per day
MWTP:	Meadowview Wastewater Treatment Plant
NIH:	National Institutes of Health
NPDES:	National Pollution Discharge Elimination System permit
OES:	State of California, Office of Emergency Services
OSHA:	Occupational Safety and Health Act
RCRA:	Resource Conservation and Recovery Act
SMAQMD:	Sacramento Metropolitan Air Quality Management District
SMUD:	Sacramento Metropolitan Utility District
SWMM:	Stormwater Management Model
UBC:	Uniform Building Code
UCD:	University of California, Davis
WATCH:	Work Area and Traffic Control Handbook
WDRs:	Waste Discharge Requirements

13. GLOSSARY OF TERMS

13. GLOSSARY OF TERMS

Centrifugal Pump:	A rotodynamic pump in which the fluid is displaced radially by the impeller. *Colloquial:* any rotodynamic pump in which the fluid is displaced radially, axially, or by a combination of both.
Collection System:	The network of sewers less than approximately 16 inches in diameter.
Combined Sewage:	Wastewater which is a combination of both stormwater and sanitary sewage.
Combined Sewer Service Area:	The area of the City drained by the CWCS.
Combined Sewer System:	The entire collection system, plus laterals and mains, and interceptors in the combined sewer service area.
Conveyance System:	The overall piping systems in the CWCS, including pipes of all diameters.
Design Storm:	Design storms are a hypothetical distribution of rainfall depths or intensities over a time increment for a given storm duration and frequency.
Dry Well:	The below-grade structure of a pumping station in which the pumped liquid is contained within piping, valves, and pumps.
Dry Well Pump:	A pump designed to be mounted in a dry well and requiring a flooded suction pipe.
Effluent Weirs (Effluent Launderers):	Skims the top layer of water off during the primary treatment process which reduces minimal suspended solids in the effluent.
Exfiltration:	The leakage or discharge of flows being carried by sewers out into the ground through leaks in pipes, joints, manholes, or other sewer system structures.
Firm Capacity:	Total pump station capacity with largest pump out of service.
Flow Attenuation:	The process of reducing the peak flow rate in a sewer system by redistributing the same volume of flow over a longer period of time.

Headloss: The friction losses of a fluid through the piping, fittings, and valves similar to a Friction Head.

Hydraulic Redundancy: Refers to the amount of backup or reserve capacity that is provided at a pumping station.

Interceptors: Sewers which are greater than 60 inches in diameter.

Laterals/Mains: Sewers which are between approximately 16 and 60 inches in diameter.

Local Flooding: Flooding caused by runoff from heavy storms which cannot be accommodated by the street drop inlets and sewers.

Outflows: Outflows are defined as combined sewage, containing raw sanitary sewage and stormwater, which backs up and flows out of the combined systems into low-lying areas, streets, or below-grade structures and basements.

Ponding: Ponding is stormwater runoff that stands in the streets either because of inadequate drainage inlet capacity or because the sewer system is too full to accept the rate of runoff entering the system.

Pump: A machine that imparts kinetic and potential energy (from an external energy source) to a liquid to force a discharge from the machine.

Reserve Capacity: Total pump station capacity minus firm capacity.

Sanitary Sewage: Domestic wastewater, caused by human activity, which is generated from residential, commercial or industrial sources and includes human wastes.

Storm Sewer: A sewer intended to carry only storm waters, surface runoffs, street washwaters, and drainage.

Stormwater: Runoff water from rainstorm events. Its origin is from precipitation only and it is not mixed with any wastewater constituents.

Submersible Pump: A pump or pump and motor suitable for fully submerged operation.

Total Capacity: Total pump station hydraulic capacity when all pumps are operating.

Upwelling: An upward hydraulic disturbance generally caused by physical means or physical structures which disturbs the laminar flow process causing mixing and re-suspension of previously settled solids. In Pioneer Reservoir when physical structures overflow weirs from one basin to the next it disturbs the laminar flow process causing the re-mixing to occur.

Wet Areas: Areas defined by the City where localized flooding occurs during large storm events.

Wet Well: The below-grade compartment of a pumping station into which the liquid flows and from which the pumps draw suction.

14. BIBLIOGRAPHY

14. BIBLIOGRAPHY

Advisory Council on Historic Preservation. *Fact Sheet: Working with Section 106.* Citation from Code of Federal Regulations, Title 36, Section 800.2(e).

Brown and Caldwell (1996). *Preliminary Design Report Pioneer Reservoir Improvements.*

California Office of Historic Preservation (1986). *Historic Preservation in California: A Handbook for Local Communities.*

California Regional Water Quality Control Board, Central Valley Region (1994). *Water Quality Control Plan (Basin Plan) [for] the Sacramento River Basin and the San Joaquin River Basin*, 3rd edition.

California Regional Water Quality Control Board, Central Valley Region, "Transmittal of Adopted/Amended Waste Discharge Requirements and Rescission of Cease and Desist Orders," letter from Kenneth Landau to Gary Reents, City of Sacramento, dated March 27, 1996.

California Regional Water Quality Control Board, Central Valley Region (1996). *Order No. 96-090 (NPDES No. CA0079111) Waste Discharge Requirements for City of Sacramento and Sacramento Regional County Sanitation District Combined Wastewater Collection and Treatment System, Sacramento County.*

City of Sacramento (1987). *City of Sacramento General Plan Update Draft Environmental Impact Report.*

City of Sacramento (1990). *Combined Wastewater Control System, Technical Overview Report.*

City of Sacramento, Department of Public Works (1989). *Standard Specifications for Public Works Construction.*

City of Sacramento, Department of Utilities, "City of Sacramento's NPDES Permit and Pioneer Reservoir," letter from Gary A. Reents to Kenneth Landau, California Regional Water Quality Control Board, Central Valley Region, dated January 16, 1996.

City of Sacramento, Department of Utilities (1996). *Combined Sewer System Project Overview.*

City of Sacramento, Department of Utilities (1996). *Combined Sewer System Technical Memorandum: Upsized Sewers in the Central Business District.*

City of Sacramento, Department of Utilities (1996). *Current Capital Improvement Projects FY 1996/1997.*

City of Sacramento, Department of Utilities (1995). *Effluent and Receiving Water Quality and Toxicity Summary Report for 1991-1995 and Proposed Sampling Program for 1995-1996.*

City of Sacramento, Department of Utilities. *NPDES Nine Minimum Controls Compliance Report* letter to the CVRWQCB, dated August 9, 1996.

City of Sacramento, Department of Utilities (1996). *Preliminary Design Report - Sump 2 Rehabilitation and Improvements.*

City of Sacramento, Department of Utilities (1996). *Preliminary Design Report - Sump 1/1A Rehabilitation and Improvements.*

City of Sacramento, Department of Utilities (1996). *Priority Ranking System for the Combined Sewer System (March 1996) Revised.*

Federal Register, vol. 48, September 29, 1983.

Field, R. and others (1993). "The Detection and Disinfection of Pathogens in Storm-Generated Flows," in: *Water Science and Technology*, vol. 28.

HDR Engineering, Inc. and others (1991). *City of Sacramento Combined Wastewater Control System, Phase 2, Detailed Technical Report.*

HDR Engineering, Inc. (1991). *Phase 2 Detailed Technical Report.*

HDR Engineering, Inc. (1992). *Phase 3 Detailed Technical Report.*

Larry Walker Associates (1993). *NPDES Effluent and Receiving Water Quality Study: Preliminary Data Report Prepared for the Sacramento Regional County Sanitation District.*

Larry Walker Associates (1996). *Sacramento Coordinated Water Quality Monitoring Program 1995 Annual Report.*

Larry Walker Associates (1995). *Southport Wastewater Treatment Plant Water Quality Impacts Assessment.*

Marino, R.P. and J.J. Gannon (1991). "Survival of Fecal Coliforms and Fecal Streptococci in Storm Drain Sediment," in: *Water Research*, vol. 25.

Metropolitan Water District, "Waste Discharge Requirements for City of Sacramento and Sacramento Regional County Sanitation District Combined Wastewater Collection and Treatment System," letter from Mark D. Buehler to William H. Crooks, California Regional Water Quality Control Board, Central Valley Region, dated March 18, 1996.

Mumford, Lewis (1991). *The City in History.*

Ogden Environmental and Energy Services Company (1994). *Retrospective Study Report Public Health Risk Assessment for Outflows from the Combined Sewer System.*

The People's Potties: From Filth Pit to Flush Toilet in Sacramento, 1849-1900, unpublished ms., 1978.

Sacramento County (1996). *Final Environmental Impact Report for the Sacramento Regional Wastewater Treatment Plant Master Plan.*

Sacramento County (1996). *Sacramento Sewerage Expansion Master Plan and Bradshaw, Sunrise, and Folsom East Interceptor Projects Draft Environmental Impact Report.*

Sacramento County Regional County Sanitation District (1996). *Draft Work Plan: Sacramento River Toxic Pollutant Control Program.*

Sacramento County Regional County Sanitation District (1975). *Sacramento Regional Wastewater Management Program Outfall Project Report and Draft Environmental Impact Report.*

Sacramento Regional Wastewater Management Program Master Interagency Agreement (93-079) (1993).

Sacramento Stormwater Management Program, Annual Reports 1991-92-1995/96.

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Infectious Diseases (1995). *Cryptosporidium Fact Sheet.*

U.S. Environmental Protection Agency (1995). *Combined Sewer Overflows Guidance For Long-Term Control Plan.*

APPENDICES

APPENDIX 15-1

NOTICE OF PREPARATION/INITIAL STUDY

APPENDIX 15-1

NOTICE OF PREPARATION/INITIAL STUDY

TO: Interested Persons
FROM: Joe Broadhead, Project Manager
DATE: July 30, 1996

SUBJECT: **NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE COMBINED SEWER SYSTEM IMPROVEMENT AND REHABILITATION PLAN**

The City of Sacramento is the lead agency for the preparation of a focused Environmental Impact Report (EIR) for the above referenced project. The EIR will provide project level analysis for the Phase 1 portion of the project, and program level analysis for the Phase 2 portion, as described below.

PROJECT OBJECTIVES

The overall objectives of the CSS Improvement and Rehabilitation Plan are as follows:

1. Reduce or eliminate outflows that are considered a possible threat to public health;

2. Reduce and improve the quality of the CSS overflows to the Sacramento River where they are considered a potential threat to the beneficial uses of the receiving waters and the "fishable/swimming" goals of the Federal Clean Water Act;

3. Comply with the requirements of the U.S. Environmental Protection Agency's (EPA) "Combined Sewer Overflow Control Policy", "Nine Minimum Controls", the National Pollutant Discharge Elimination System (NPDES) Permit, and the Clean Water Act.

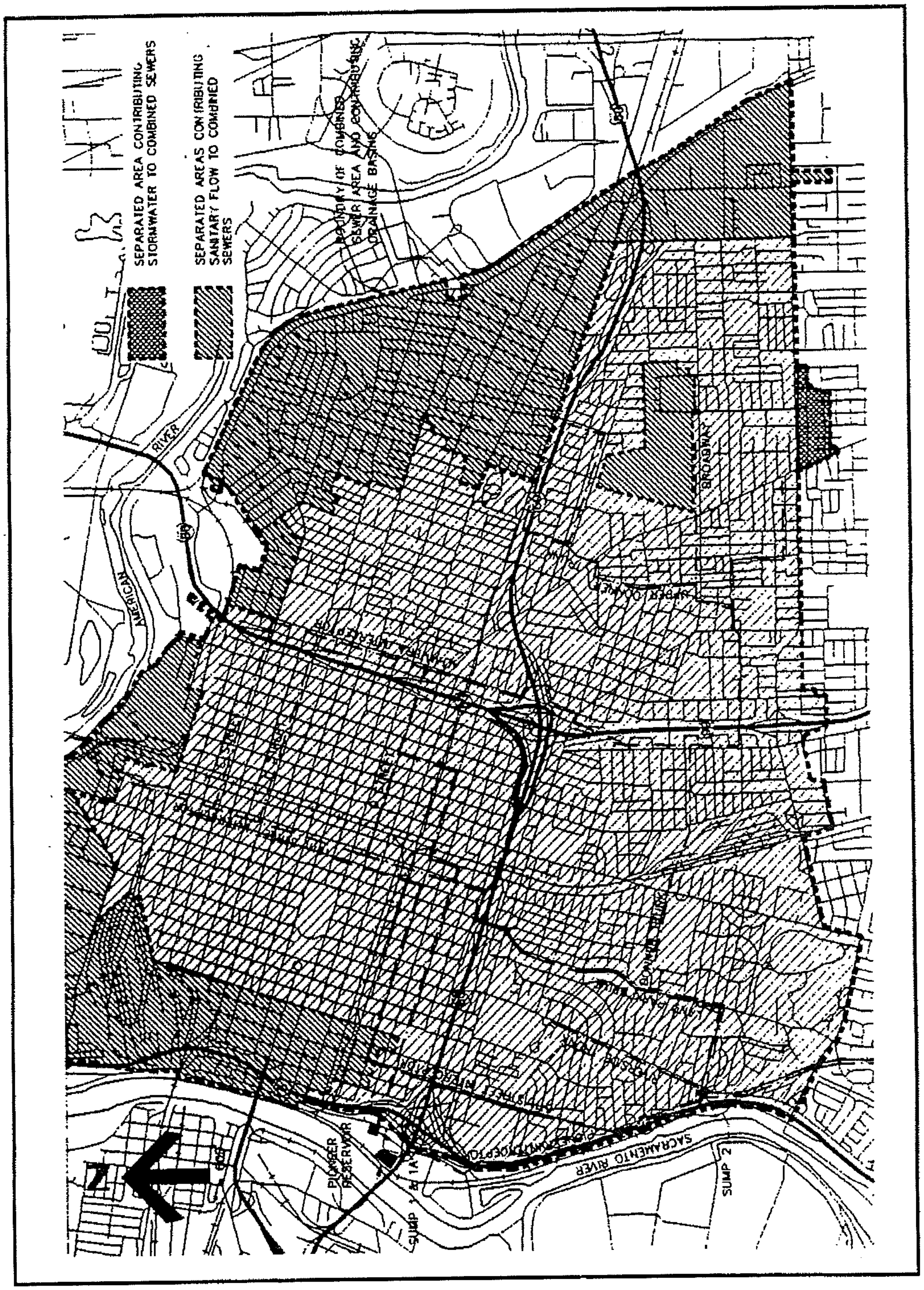
4. Rehabilitate and improve all critical combined sewer system pumping stations, treatment facilities, and pipelines.

5. Reduce neighborhood street flooding problems where it is economically feasible to do so.

PROJECT SITE

The CSS service area encompasses approximately 11,300 acres (see Figure 1). Approximately 7,500 acres of the service area includes the Downtown, East Sacramento, and Land Park areas, which contribute both sanitary sewage and storm drainage flows to the CSS. A second area of approximately 3,700 acres encompasses the River Park, California State University, and far eastern Sacramento areas and contributes only sanitary sewage flows to the CSS. Lastly, a third area of approximately 100 acres located in southern Sacramento contributes only storm drainage flows.

Figure 1
Combined Sewer System Service Area



PROJECT DESCRIPTION

Background

The Existing Combined Sewer System

The City of Sacramento's Combined Sewer System (CSS) is the portion of the City's sewer system that conveys both sanitary sewage and stormwater in the same pipelines. The CSS consists of both pipelines and facilities. Facilities include pumping stations, an off-line storage facility known as Pioneer Reservoir, and the City's Combined Wastewater Treatment Plant (CWTP). The terrain is flat and many of the sewers are undersized and need rehabilitation. As a result, overflows to the Sacramento River, outflows through plumbing fixtures and low lying areas, and local flooding occur in low areas during storms when the capacity of the CSS is exceeded. Overflows occur during periods of heavy rainfall when the total wastewater flows can exceed the capacity of the CSS or treatment facilities. These overflows, called combined sewer overflows (CSOs), are discharges of untreated combined wastewater consisting primarily of storm water runoff (90 percent or more), with the remainder as sanitary sewage. Outflows occur when the sewers become surcharged and combined wastewater flows back up through drop inlets and manholes onto the streets, and occasionally, into below-ground basements through floor drains and plumbing fixtures. Local flooding occurs when the CSS is full, and storm water runoff cannot enter the CSS.

A schematic flow diagram of the key facilities in the CSS is shown on Figure 2. The CSS drains to the west to two large pumping stations known as Sump 1/1A and Sump 2, located on the east side of the Sacramento River. Sumps accept and transport flows from the underground piping system to either the treatment facilities, storage facilities, or directly to the Sacramento River. Sump 1, located at the southeast corner of U and Front Streets was constructed in 1907 and modified in 1956 (see Figure 3). It consists of two pump buildings; Sump 1 Station and Sump 1 Annex (1A). Sump 1 pumps are powered by natural gas engines and only operate as emergency backup to the newer Sump 1A.

Sump 2, located at the southwest corner of Riverside Boulevard and 11th Avenue was constructed in 1914 and has been modified extensively since that time (see Figure 4). Sump 2 is the primary pumping station for the CSS. Sump 2 receives flow from four inlet sewers (two 60-inch, one 108-inch and one 114-inch diameter) and discharges to the Flow Control Structure located adjacent to Sump 2. From the Flow Control Structure, flow is discharged to either the County of Sacramento Regional Treatment Plant, the City's CWTP, Pioneer Reservoir or the Sacramento River.

Pioneer Reservoir, located off of Front and V Streets, was constructed in 1978 to provide 23 million gallons of temporary storage adjacent to Sump 1/1A (see Figure 5). Combined wastewater is pumped to Pioneer Reservoir by both Sump 2 and Sump 1/1A. Sump 2 operates continuously throughout the year, while Sump 1/1A operates only during large storms. The 120-inch diameter, 8,800-foot long Pioneer Interceptor line, which connects Sump 2 to the reservoir, is used to fill and drain the reservoir and provides an additional 5 million gallons of storage.

Figure 2
Combined Systems Schematic

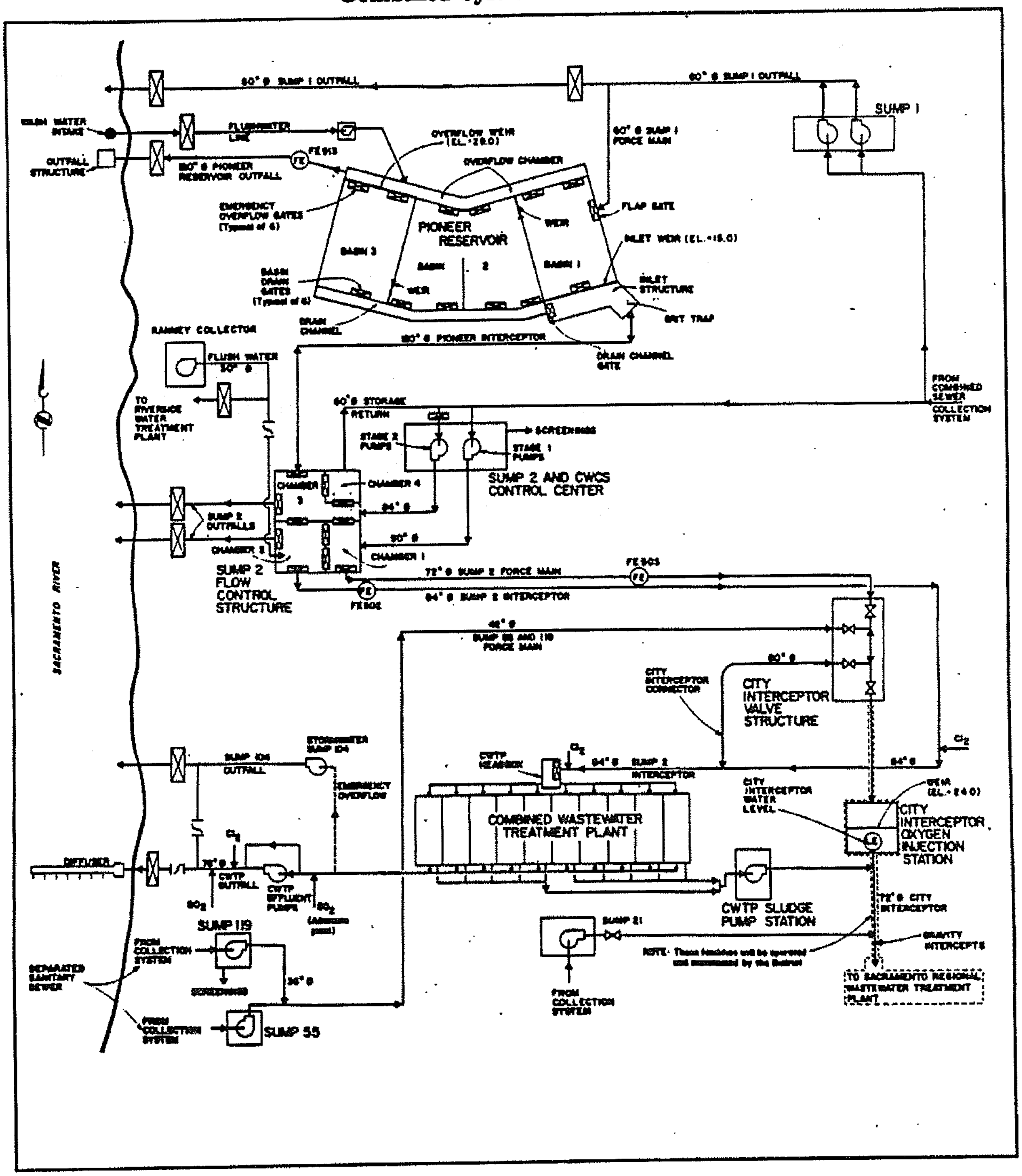
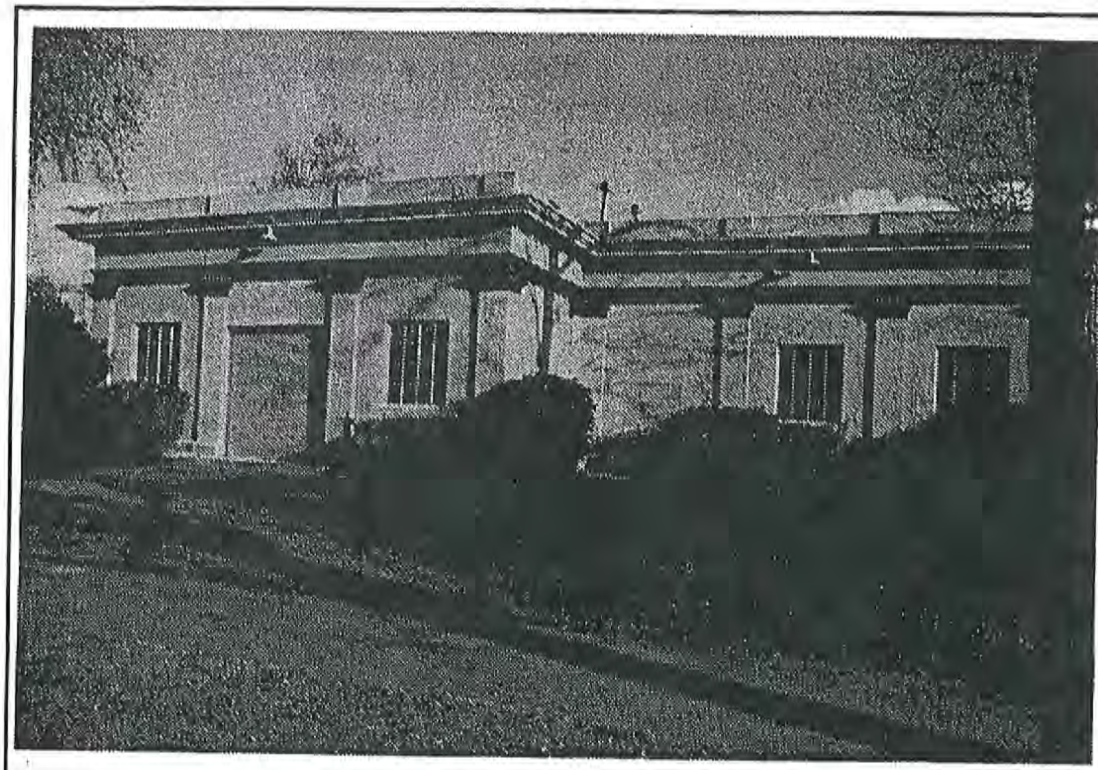


Figure 3
Sump 1



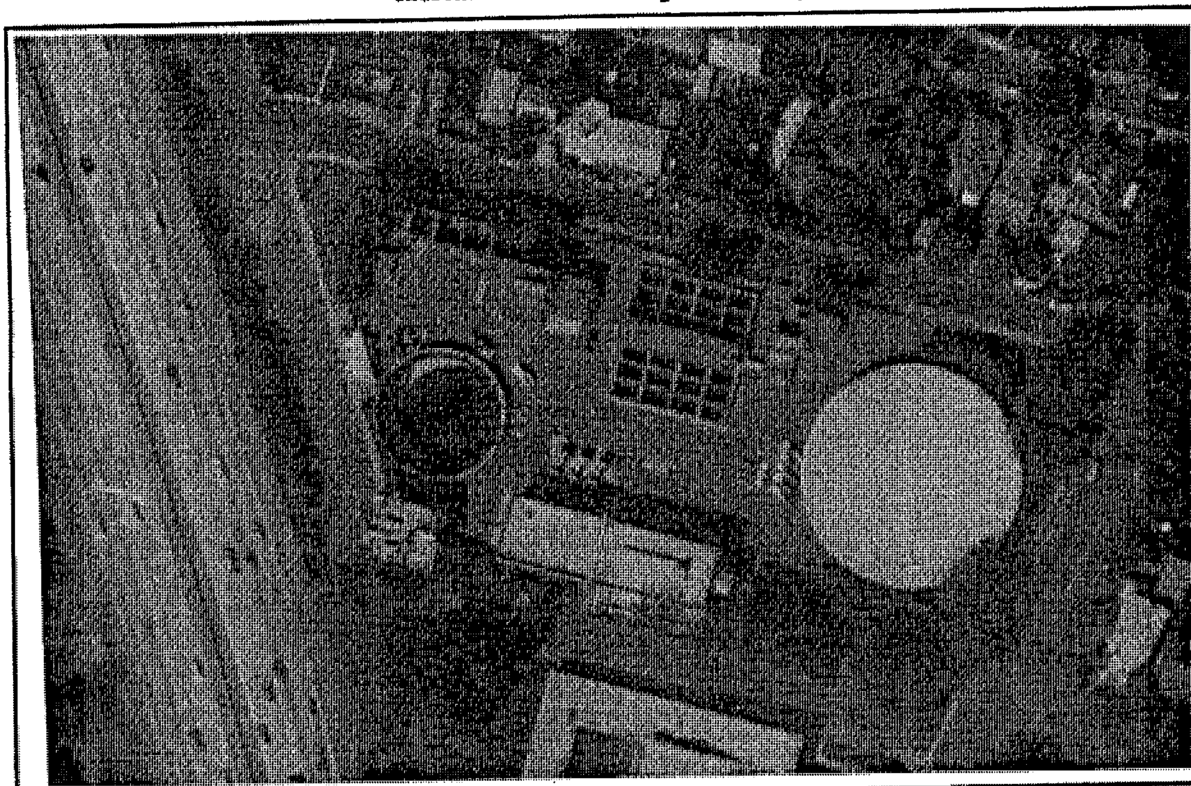
The City has an agreement with the Sacramento Regional Country Sanitation District whereby the City can convey a maximum of 60 million gallons per day (MGD) to the Regional Wastewater Treatment Plant for secondary treatment and disinfection prior to discharge to the Sacramento River. The capacity is sufficient to treat all CSS dry weather flows. However, when the flow rate exceeds 60 MGD during a storm, the City activates its CWTP and provides primary treatment and disinfection for an additional 130 MGD prior to discharge to the Sacramento River.

CSOs occur from Sump 2 and Pioneer Reservoir during larger storms when the system treatment and storage capacity is exceeded. CSOs occur infrequently, historically averaging approximately five to six per year in Sacramento, which is consistent with the four to six events allowed under the Environmental Protection Agency's (EPA) CSO Control Policy. The CSS does not experience any dry weather CSOs.

Regional Water Quality Control Board - Cease and Desist Order

The California Regional Water Quality Control Board (RWQCB) considers outflows to be a potential threat to public health. Therefore, in 1990, the Central Valley RWQCB (CVRWQCB) issued a Cease and Desist Order (CDO) prohibiting outflows to City streets and unpermitted CSOs to the Sacramento River from the CSS. Under the City's National Pollutant Discharge

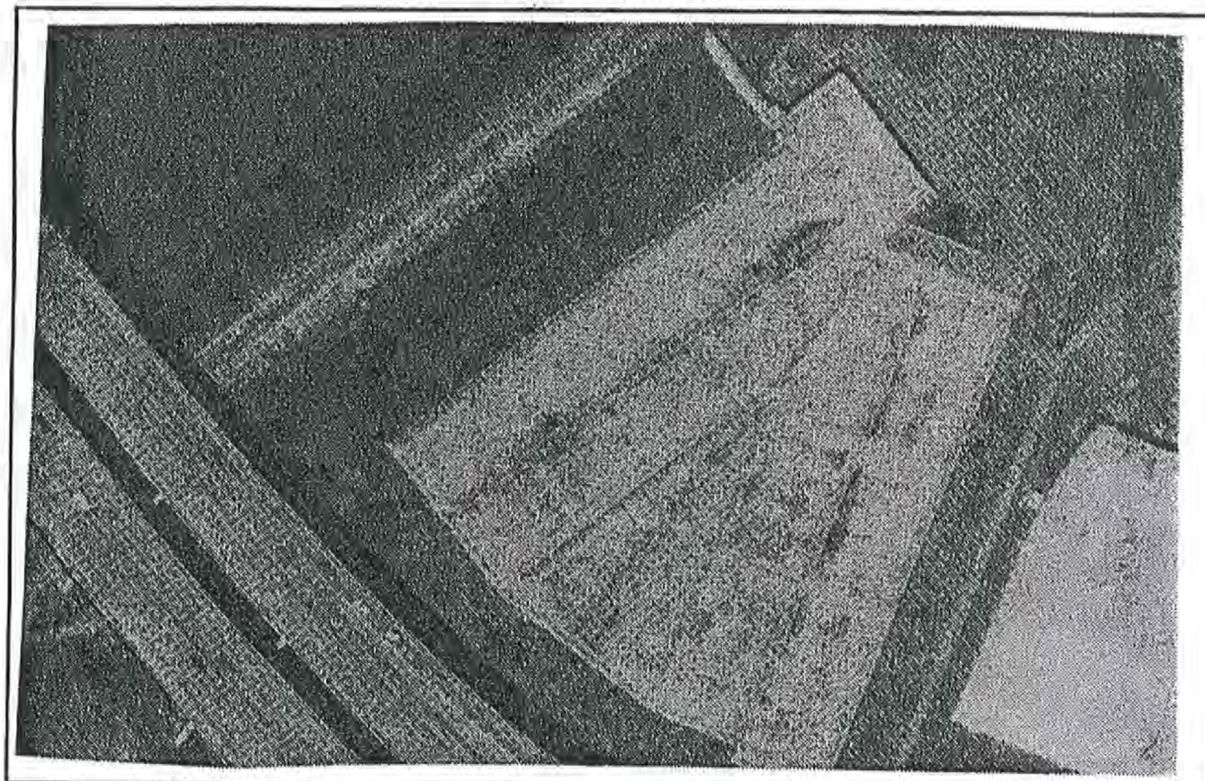
Figure 4
Aerial View of Sump 2 Facility



Elimination System (NPDES) Permit, which provides waste discharge requirements, CSOs from outfalls at the two sumps and Pioneer Reservoir are permitted as long as the City is conveying the maximum possible flow to the Regional Plant and CWTP at the time (discussed later in this document are the NPDES requirements of the CSS NPDES Permit). These outflows, and the potential threat to public health were the main focus of the CDO. A Public Health Risk Assessment (1994) was conducted over a two year period and consisted of a statistical analysis of work records of outdoor workers to see if there is a correlation between outflow events and increased absence from work. The analysis showed that absenteeism was not significantly greater among personnel working in the CSS service area than among personnel working outside the area. From the health assessment, the City concluded that outflows of combined wastewater do not pose a major health risk. Despite the results of the risk assessment, improvements were determined to still be necessary in order to reduce flooding, outflows and the CSOs. The City initially took steps to minimize outflows and CSOs by changing the way the CSS operates. Once it was determined that operational changes alone would not meet the two major requirements of the CDO, the City initiated a long range study of several structural alternatives to improve the CSS, that also considered the cost-to-benefit ratio.

Studies concluded that the most feasible alternative consisted of increasing pumping station capacities at existing Sumps 1/1A and 2, converting Pioneer Reservoir to a primary treatment facility (with disinfection), installing an upsized sewer system in the downtown area, and

Figure 5
Pioneer Reservoir



constructing several local or regional underground storage facilities throughout the CSS service area. As a result, the City developed the CSS Rehabilitation and Improvement Plan, which includes short-term and long-term improvements. The short-term improvements, or Phase 1 of the Plan, include the capacity increase projects for Sumps 1/1A and 2 and conversion of Pioneer Reservoir to a primary treatment facility. The City proposes to defer for further study the large-scale improvements, or Phase 2, that include Inflow Control and Local Storage (ICALS), subregional and regional storage facilities, upsized sewers, and sewer replacement until the actual amount of flood reduction and outflows achieved by increasing the capacities of the two existing sumps can be evaluated. The evaluation of the effectiveness of the sump improvements will consider public safety, reductions in property damage and public inconvenience due to flooding. Based on the conclusions of the evaluation, the Phase 2 components will be further defined and the sequencing of improvements can be determined. All the proposed improvements of Phases 1 and 2 would be designed to ultimately meet the City's goals of providing 10-year and 100-year flood protection, as well as complying with federal and State requirements (refer to discussion under "Objectives"). Completion of both phases could extend over a period of 20 years, with Phase 1 implemented over the first ten years. The CSS Plan also includes rehabilitation of the entire CSS pipeline system which would occur over a 30+ year period.

As a result of identifying what improvements are needed and the preparation of the CSS Rehabilitation and Improvement Plan, the CDO was rescinded (March 22, 1996) by the RWQCB and the City was issued a new NPDES permit, which includes a time schedule for implementing the initial phase of the improvement and rehabilitation program for the CSS.

Phase 1 and Phase 2 components of the Plan are addressed in this Initial Study for potential environmental impacts. A description of each component is provided below under "Plan Description."

National Pollutant Discharge Elimination System Permit System and Requirements

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the Clean Water Act (CWA) to regulate municipal and industrial discharges to surface waters of the U.S. 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.

Waste Discharge Requirements

The quality of effluent that can be discharged from the CWTP is established by the CVRWQCB through NPDES permit Waste Discharge Requirements (WDRs). WDRs are updated at least every five years. A new permit must be issued in the event of a major change or expansion of the facility. The CVRWQCB can issue a CDO, which it did with the City due to the CSOs, when a violation occurs of the discharge standards contained in the WDRs. However, in March 1992 the CVRWQCB rescinded the CDO and renewed the City's NPDES permit (No. CA007911) in Order No. 96-090. The City must comply with the Order which establishes the City's new set of WDRs. These WDRs are summarized below (refer to Appendix B for the entire NPDES permit):

- Prohibit discharge to the Sacramento River, surface waters or surface water drainages at discharge points from the CWTP, Sump 2 Bypass and Pioneer Reservoir unless otherwise approved under the provisions of the permit;

The CSS conveys combined flows to Sump 2, where up to 60 MGD is pumped to the SRWTP for secondary treatment prior to discharge to the Sacramento River. This discharge point is designated as point 001 and is governed by NPDES permit (No. CA0077682). When flow to Sump 2 exceeds 60 MGD, the City operates its CWTP, where an additional 130 MGD of combined wastewater receives primary treatment with disinfection and then discharges to the Sacramento River at points 002 and 003. Flows to Sump 2 greater than 190 MGD are diverted to the 28 million gallon Pioneer Reservoir. The stored combined wastewater is diverted back to the SRWTP or the CWTP for treatment as treatment capacity allows, or is discharged to the Sacramento River if storm flows exceed total treatment and storage capacity. The discharge from Pioneer Reservoir occurs at point 006 and receives partial solids removal without disinfection. During extremely high flow conditions, discharges of untreated combined wastewater (CSOs) may occur at Sump 2 bypass points 004 and 005 and at Sump 1 bypass point 007. Discharges 002 through 007 are governed by the Discharge Requirements of the NPDES Permit summarized here.

- Limit effluent discharge from the CWTP and Pioneer Reservoir in excess of specified limits, pH and temperature, and the discharger shall capture for treatment at least 85 percent of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis;

- Dispose of sludge and other solids removed in a manner consistent with Chapter 15, Division 3, Title 23 of the California Code of Regulations, and report any proposed change in sludge use or disposal practice to the CVRWQCB and EPA at least 90 days in advance of the change; and

- Comply with water quality objectives contained in the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin related to Receiving Water Limitations. Discharges shall not cause objectives to be exceeded. An objective can be exceeded if for example, concentrations of dissolved oxygen fall below 5.0 mg/l, oils, greases, waxes or other materials are visible on the water surface or stream bottom, or the normal ambient temperature increases more the 5 degrees (refer to Appendix B for complete listing).

The City is also required to meet other specific provisions including a schedule for implementing the CSS Plan, maintaining an approved Operations Plan for the CSS, and completion of an evaluation of compliance with the EPA's nine minimum CSO controls. Before the NPDES permit expires (March 2001), the City must file a Report of Waste Discharge in accordance with Title 23 of the CCR for renewal of waste discharge requirements if the City wishes to continue permitted discharges.

Trace Element Testing

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that could cause or contribute to exceeding EPA water quality standards. From 1991 to 1995, the City conducted sampling for trace element levels for antimony, arsenic, cadmium, chromium, copper, cyanide, lead, mercury, nickel, selenium, silver, thallium, and zinc. The sampling revealed that with the exception of mercury, no significant exceedances were found of established EPA water quality criteria for trace elements. However, the mercury sampling technique the City used in 1991 may not have been able to detect to a level necessary to make an absolute determination. As such, in addition to the requirements summarized above, the NPDES Permit required the City to conduct "clean technique" sampling for mercury.

As stated in correspondence from the City Utilities Department to the CVRWQCB dated May 23, 1996, during the 1994-1995 wet season clean techniques (including lower detection limits) were used on eleven discharge samples. These results indicate lower mercury levels using clean techniques. However, the CWTP still exceeds the EPA 30-day criteria for the dissolved and total fractions, and Pioneer Reservoir and Sump 2 for the total fraction only. An assessment was undertaken to determine if the mercury levels in the CSS discharges have a "reasonable potential" to cause or contribute to an exceedance of the water quality criteria in the Sacramento River. The City concluded that the mercury loadings from CSS discharges do not have a reasonable potential to cause or contribute to an exceedance of the water quality criteria in the Sacramento River. This determination is currently under review by the CVRWQCB.

Plan Description

A description of the Phase 1 and Phase 2 components of the CSS Plan is provided below. Both components are addressed in the attached Initial Study for potential environmental impacts.

Phase 1 Description

The primary objective of Phase 1 is to implement project-specific improvements and rehabilitation to the CSS that would assure operating reliability and reduce street flooding in the CSS service area. These improvements would be implemented over the first five years of the Plan. The components of Phase 1 are as follows:

1. Sump 1/1A: Increase the capacity from 130 MGD to approximately 200 MGD. A listing of specific rehabilitation items and improvements for Sump 1/1A is included in Appendix B as Table B-1. Improvement items are defined as those items which would increase pumping capacity to reduce flooding within the CSS. Rehabilitation items are defined as those items which improve the reliability, operations, and maintenance of the existing sump. Rehabilitation would generally include replacing worn or obsolete equipment, repairing corroded equipment or structures, and providing additional equipment and controls to improve sump operations.

2. Sump 2: Increase the reliability and ease of operation of the existing Stage 1 and 2 pumps and construct a new adjoining 160 MGD pump station, which would pump all dry weather flow from the CSS. Modifications for Sump 2 also include the addition of an emergency generator and locker/restroom facility. The location of these items would be on-site, but may require partial demolition of the Riverside Wastewater Treatment Plant. It has been assumed that this would need to occur. A listing of specific rehabilitation items and improvements for Sump 2 is included in Appendix B as Table B-2.

3. Pioneer Reservoir: Convert the existing wastewater reservoir to a primary treatment facility by adding disinfection. It is assumed that the reservoir is retained in its present serpentine flow configuration with an existing peak hydraulic capacity of 350 MGD. This disinfection system would kill pathogenic organisms prior to discharge to the Sacramento River. Dechlorination would also be provided to reduce the toxic effects of disinfection on aquatic life. The disinfection system would utilize sodium hypochlorite for disinfection. Sodium bisulfite would be used for dechlorinating discharges.

   Complete an Equivalency Demonstration Program to show that the reservoir, in its present configuration, removes total suspended solids as well as the CWTP. If equivalent performance cannot be demonstrated, it would be necessary to proceed with modifications to the reservoir to increase solids removal capability. These modifications would likely consist of converting the reservoir into a set of three parallel primary sedimentation basins. The treatment capacity of the reservoir could be between 107 and 350 MGD.

4. Rehabilitation and Replacement of the Collection System Underground Piping: Selected laterals (under 16 inches in diameter), mains, and interceptors (up to 114 inches in diameter) would be rehabilitated or replaced. Both conventional trenching and trenchless technology would be utilized, and be dependent upon the type of improvement needed. The exact locations of these improvements and construction technique to be utilized are unknown. However, the CSS area would be divided into subareas of 20 to 50 acres for purposes of design and construction, and construction would be timed with other City infrastructure projects to minimize disturbance. Areas experiencing the most severe flooding and containing the more deteriorated sewers would be targeted first. These areas are likely in the downtown area which contains the older brick sewers. Rehabilitation and replacement of the system would take place over a 30+ year period.

This initial phase involves the two existing sumps since the sumps are responsible for pumping all CSS wastewater for treatment and disposal. Without the operating reliability of the sumps, the system could fail and result in flooding and severe outflows. However, increasing sump capacities alone cannot address these issues. It is also necessary to modify Pioneer Reservoir, which would decrease the number and volume of CSOs to the Sacramento River. In addition, since the capacity of the system would be increased, the underground piping system must also be improved. The piping system is almost 100 years old and has structural defects including cracked pipes, corrosion, deteriorated and missing grout at pipe joints, and root intrusion that can clog sewers and limit hydraulic capacity.

Phase 2 Description

The objective of Phase 2 is to design and construct facilities to alleviate flooding and outflows to local areas. At this time, the combination of facilities needed is unknown. Therefore, these components are evaluated at a more general, programmatic level than Phase 1. The Phase 2 facilities consist of the following options.

1. Inflow Control and Local Storage (ICALS): ICALS consist of shallow, underground local storage structures used to temporarily store combined wastewater until there is adequate capacity in the downstream collection system to accommodate the flow. These facilities are usually constructed of large diameter concrete pipe or rectangular pre-cast concrete box sections that are installed end-to-end to provide the necessary length to accommodate storage. These gravity-flow facilities do not require drainage pumps. Local storage projects may be implemented in certain areas early in the phasing of the CSS Plan due to public concern about frequent flooding and outflows.

2. Subregional and Regional Storage: These facilities work in conjunction with ICALS. They consist of relatively deep storage facilities that temporarily store combined wastewater until there is adequate hydraulic capacity in the downstream collection system to accommodate the flow. These facilities usually consist of reinforced, cast-in-place concrete boxes. Since these facilities are placed deeper than ICALS, pumps are required

to drain the storage box following a storm. Two sites are under consideration for the location of the regional storage facility; within the Union Pacific Railroad (UPRR) yard and the University of California Davis (UCD) Medical Center area. The City does not intend on placing the regional storage facility within a private easement.

3. Upsized Sewers: Upsized sewers are gravity-flow pipelines installed to relieve existing sewers that do not have adequate capacity to convey peak flows. Upsized sewers also provide in-line storage of flows. An upsized sewer is installed from the location where the deficient capacity exists to a downstream location where sufficient flow capacity exists. It should be noted the feasibility of a network of large upsized sewers in the Central Business District in lieu of ICALS is currently under evaluation.

4. Sewer Replacement/Rehabilitation: Sewer replacement is utilized when an existing sewer is damaged beyond repair and there is inadequate space to install an upsized sewer. The new sewer is often larger than the old sewer. To avoid excavating large areas, trenchless technology may be used and includes a technique called "sewer bursting." This technique breaks and expands the existing pipe in order to insert a new pipe in the expanded line.

   In some locations, sewers need not be increased in diameter and only need rehabilitation. In these cases "in-situ lining" is often utilized which involves inserting liners inside the existing cracked or broken sewer. Existing pipes are expanded using pressure or heat. This technique does not require excavation of the entire street.

5. Public Education and Early Response Action Plan: Developing an early response plan for rain patrols would be an important non-structural component of the CSS Plan. In addition, efforts would be made to remove sources of inflow on private property. A public education program would be implemented to persuade property owners to make needed repairs to help correct a community problem.

6. CWTP: This component of Phase 2 is in the early stages of pre-design report preparation. Evaluation of various designs will consider nine system items, present a schedule for design and construction, and estimates of present worth of lifecycle costs.

Alternatives

The City's goals for storm drainage are to minimize street flooding during a storm having a 10 percent probability of occurring every year (10-year storm) and to prevent property damage during a storm with a probability of one percent (100-year storm). Between 1990 and 1992 numerous alternatives were evaluated by the City to determine the most cost effective way to address the City's goals and federal and State requirements, as listed above. The EIR will identify those alternatives previously considered but dismissed by the City and identify the justifications for their dismissal. The alternatives selected to be evaluated in the EIR will be analyzed at an equal level to the proposed Phase 1 and Phase 2 components.

Related Projects

The EIR will contain a Related Projects Chapter which will identify and discuss current projects that are related to the CSS Plan. These include other sewer projects, such as the 42nd Street Drainage Area Improvement Project, and related land use plans. The land use plan discussion will address the UPRR planning effort and the UCD Medical Center Long Range Development Plan (LRDP) plans since these two areas are under consideration for Phase 2 components of the CSS Plan.

ENVIRONMENTAL EFFECTS

The City will prepare an EIR analyzing the project's impacts and proposing mitigation on the following resources:

- Water
- Noise
- Population and Housing (Growth Inducement)
- Cultural Resources

A draft Initial Study of the project is included as an attachment to this NOP. Issues identified in the Initial Study are considered to be probable environmental effects of the proposed project. If you feel additional topics should be addressed in the EIR, please contact:

Joe Broadhead, Project Manager
City of Sacramento, Planning and Development
Environmental Services Division
1231 I Street, Room 301
Sacramento, CA 95814

Telephone: (916) 264-7622

Please respond to this Notice of Preparation no later than 5:00 PM, Thursday, August 29, 1996.

INITIAL STUDY

COMBINED SEWER SYSTEM IMPROVEMENT AND REHABILITATION PLAN

Prepared for:

City of Sacramento

Prepared by:

EIP Associates

In conjunction with:
Peak Associates
C. Timothy Raney, AICP

JULY 30, 1996

INITIAL STUDY

I. BACKGROUND

1. Project Sponsor: *City of Sacramento, Department of Utilities*

2. County: *Sacramento*

3. Address and Phone Number of Project Contact:

Lead Agency Contact	*Joe Broadhead, EIR Project Manager* *Department of Planning and Development* *Environmental Services Division* *1231 I Street, Ste. 300* *Sacramento, CA 95814* *(916) 264-7622*
Applicant Contact	*Rick Batha, Senior Engineer* *Department of Utilities* *Engineering Services Division* *5770 Freeport Boulevard, Ste. 100* *Sacramento, CA 95815* *(916) 433-6625*

4. Date Checklist Completed: *July 30, 1996*

5. Agency Requiring Checklist: *City of Sacramento, Department of Planning and Development, Planning Services Division*

6. Project Name: *Combined Sewer System (CSS) Improvement and Rehabilitation Plan*

7. Other Agencies whose approval may be required:
   - U.S. Environmental Protection Agency
   - U.S. Army Corps of Engineers
   - U.S. Fish and Wildlife Service
   - National Marine Fisheries Service
   - State Water Resources Control Board
   - California Department of Fish and Game
   - California Department of Water Resources
   - California Department of Health Services
   - State Historic Preservation Office
   - Sacramento Metropolitan Air Quality Management District

II. PROJECT DESCRIPTION

Background

The Existing Combined Sewer System

The City of Sacramento's Combined Sewer System (CSS) is the portion of the City's sewer system that conveys both sanitary sewage and stormwater in the same pipelines. The CSS consists of both pipelines and facilities. Facilities include pumping stations, an off-line storage facility known as Pioneer Reservoir, and the City's Combined Wastewater Treatment Plant (CWTP). The terrain is flat and many of the sewers are undersized and need rehabilitation. As a result, overflows to the Sacramento River, outflows through plumbing fixtures and low lying areas, and local flooding occur in low areas during storms when the capacity of the CSS is exceeded. Overflows occur during periods of heavy rainfall when the total wastewater flows can exceed the capacity of the CSS or treatment facilities. These overflows, called combined sewer overflows (CSOs), are discharges of untreated combined wastewater consisting primarily of storm water runoff (90 percent or more), with the remainder as sanitary sewage. Outflows occur when the sewers become surcharged and combined wastewater flows back up through drop inlets and manholes onto the streets, and occasionally, into below-ground basements through floor drains and plumbing fixtures. Local flooding occurs when the CSS is full, and storm water runoff cannot enter the CSS.

A schematic flow diagram of the key facilities in the CSS is shown on Figure 2 of the Notice of Preparation (NOP). The CSS drains to the west to two large pumping stations known as Sump 1/1A and Sump 2, located on the east side of the Sacramento River. Sumps accept and transport flows from the underground piping system to either the treatment facilities, storage facilities, or directly to the Sacramento River. Sump 1, located at the southeast corner of U and Front Streets was constructed in 1907 and modified in 1956 (see Figure 3 of the NOP). It consists of two pump buildings; Sump 1 Station and Sump 1 Annex (1A). Sump 1 pumps are powered by natural gas engines and only operate as emergency backup to the newer Sump 1A.

Sump 2, located at the southwest corner of Riverside Boulevard and 11th Avenue was constructed in 1914 and has been modified extensively since that time (see Figure 4 of the NOP). Sump 2 is the primary pumping station for the CSS. Sump 2 receives flow from four inlet sewers (two 60-inch, one 108-inch and one 114-inch diameter) and discharges to the Flow Control Structure located adjacent to Sump 2. From the Flow Control Structure, flow is discharged to either the County of Sacramento Regional Treatment Plant, the City's CWTP, Pioneer Reservoir or the Sacramento River.

Pioneer Reservoir, located off of Front and V Streets, was constructed in 1978 to provide 23 million gallons of temporary storage adjacent to Sump 1/1A (see Figure 5 of the NOP). Combined wastewater is pumped to Pioneer Reservoir by both Sump 2 and Sump 1/1A. Sump 2 operates continuously throughout the year, while Sump 1/1A operates only during large storms. The 120-inch diameter, 8,800-foot long Pioneer Interceptor line, which connects Sump 2 to the reservoir, is used to fill and drain the reservoir and provides an additional 5 million gallons of storage.

The City has an agreement with the Sacramento Regional Country Sanitation District whereby the City can convey a maximum of 60 million gallons per day (MGD) to the Regional Wastewater Treatment Plant for secondary treatment and disinfection prior to discharge to the Sacramento River. The capacity is sufficient to treat all CSS dry weather flows. However, when the flow rate exceeds 60 MGD during a storm, the City activates its CWTP and provides primary treatment and disinfection for an additional 130 MGD prior to discharge to the Sacramento River.

CSOs occur from Sump 2 and Pioneer Reservoir during larger storms when the system treatment and storage capacity is exceeded. CSOs occur infrequently, historically averaging approximately five to six per year in Sacramento, which is consistent with the four to six events allowed under the Environmental Protection Agency's (EPA) CSO Control Policy. The CSS does not experience any dry weather CSOs.

Regional Water Quality Control Board - Cease and Desist Order

The California Regional Water Quality Control Board (RWQCB) considers outflows to be a potential threat to public health. Therefore, in 1990, the Central Valley RWQCB (CVRWQCB) issued a Cease and Desist Order (CDO) prohibiting outflows to City streets and unpermitted CSOs to the Sacramento River from the CSS. Under the City's National Pollutant Discharge Elimination System (NPDES) Permit, which provides waste discharge requirements, CSOs from outfalls at the two sumps and Pioneer Reservoir are permitted as long as the City is conveying the maximum possible flow to the Regional Plant and CWTP at the time (discussed later in this document are the NPDES requirements of the CSS NPDES Permit). These outflows, and the potential threat to public health were the main focus of the CDO. A Public Health Risk Assessment (1994) was conducted over a two year period and consisted of a statistical analysis of work records of outdoor workers to see if there is a correlation between outflow events and increased absence from work. The analysis showed that absenteeism was not significantly greater among personnel working in the CSS service area than among personnel working outside the area. From the health assessment, the City concluded that outflows of combined wastewater do not pose a major health risk. Despite the results of the risk assessment, improvements were determined to still be necessary in order to reduce flooding, outflows and the CSOs. The City initially took steps to minimize outflows and CSOs by changing the way the CSS operates. Once it was determined that operational changes alone would not meet the two major requirements of the CDO, the City initiated a long range study of several structural alternatives to improve the CSS, that also considered the cost-to-benefit ratio.

Studies concluded that the most feasible alternative consisted of increasing pumping station capacities at existing Sumps 1/1A and 2, converting Pioneer Reservoir to a primary treatment facility (with disinfection), installing an upsized sewer system in the downtown area, and constructing several local or regional underground storage facilities throughout the CSS service area. As a result, the City developed the CSS Rehabilitation and Improvement Plan, which includes short-term and long-term improvements. The short-term improvements, or Phase 1 of the Plan, include the capacity increase projects for Sumps 1/1A and 2 and conversion of Pioneer Reservoir to a primary treatment facility. The City proposes to defer for further study the large-scale improvements, or Phase 2, that include Inflow Control and Local Storage (ICALS), subregional and regional storage facilities, upsized sewers, and sewer replacement until the actual amount of flood reduction and outflows achieved by increasing the capacities of the two existing sumps can be evaluated. The evaluation of the effectiveness of the sump improvements will consider public safety, reductions in property damage and public inconvenience due to flooding. Based on the conclusions of the evaluation, the Phase 2 components will be further defined and the sequencing of improvements can be determined. All the proposed improvements of Phases 1 and 2 would be designed to ultimately meet the City's goals of providing 10-year and 100-year flood protection, as well as complying with federal and State requirements (refer to discussion under "Objectives"). Completion of both phases could extend over a period of 20 years, with Phase 1 implemented over the first ten years. The CSS Plan also includes rehabilitation of the entire CSS pipeline system which would occur over a 30+ year period.

As a result of identifying what improvements are needed and the preparation of the CSS Rehabilitation and Improvement Plan, the CDO was rescinded (March 22, 1996) by the RWQCB and the City was issued a new NPDES permit, which includes a time schedule for implementing the initial phase of the improvement and rehabilitation program for the CSS.

Phase 1 and Phase 2 components of the Plan are addressed in this Initial Study for potential environmental impacts. A description of each component is provided below under "Plan Description."

National Pollutant Discharge Elimination System Permit System and Requirements

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the Clean Water Act (CWA) to regulate municipal and industrial discharges to surface waters of the U.S. 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.

<u>Waste Discharge Requirements</u>

The quality of effluent that can be discharged from the CWTP is established by the CVRWQCB through NPDES permit Waste Discharge Requirements (WDRs). WDRs are updated at least every five years. A new permit must be issued in the event of a major change or expansion of the facility. The CVRWQCB can issue a CDO, which it did with the City due to the CSOs, when a violation occurs of the discharge standards contained in the WDRs. However, in March 1992 the CVRWQCB rescinded the CDO and renewed the City's NPDES permit (No. CA007911) in Order No. 96-090. The City must comply with the Order which establishes the City's new set of WDRs. These WDRs are summarized below (refer to Appendix B for the entire NPDES permit):

- Prohibit discharge to the Sacramento River, surface waters or surface water drainages at discharge points from the CWTP, Sump 2 Bypass and Pioneer Reservoir unless otherwise approved under the provisions of the permit;

The CSS conveys combined flows to Sump 2, where up to 60 MGD is pumped to the SRWTP for secondary treatment prior to discharge to the Sacramento River. This discharge point is designated as point 001 and is governed by NPDES permit (No. CA0077682). When flow to Sump 2 exceeds 60 MGD, the City operates its CWTP, where an additional 130 MGD of combined wastewater receives primary treatment with disinfection and then discharges to the Sacramento River at points 002 and 003. Flows to Sump 2 greater than 190 MGD are diverted to the 28 million gallon Pioneer Reservoir. The stored combined wastewater is diverted back to the SRWTP or the CWTP for treatment as treatment capacity allows, or is discharged to the Sacramento River if storm flows exceed total treatment and storage capacity. The discharge from Pioneer Reservoir occurs at point 006 and receives partial solids removal without disinfection. During extremely high flow conditions, discharges of untreated combined wastewater (CSOs) may occur at Sump 2 bypass points 004 and 005 and at Sump 1 bypass point 007. Discharges 002 through 007 are governed by the Discharge Requirements of the NPDES Permit summarized here.

- Limit effluent discharge from the CWTP and Pioneer Reservoir in excess of specified limits, pH and temperature, and the discharger shall capture for treatment at least 85 percent of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis;

- Dispose of sludge and other solids removed in a manner consistent with Chapter 15, Division 3, Title 23 of the California Code of Regulations, and report any proposed change in sludge use or disposal practice to the CVRWQCB and EPA at least 90 days in advance of the change; and

- Comply with water quality objectives contained in the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin related to Receiving Water Limitations. Discharges shall not cause objectives to be exceeded. An objective can be exceeded if for example, concentrations of dissolved oxygen fall below 5.0 mg/l, oils, greases, waxes or other materials are visible on the water surface or stream bottom, or the normal ambient temperature increases more the 5 degrees (refer to Appendix B for complete listing).

The City is also required to meet other specific provisions including a schedule for implementing the CSS Plan, maintaining an approved Operations Plan for the CSS, and completion of an evaluation of compliance with the EPA's nine minimum CSO controls. Before the NPDES permit expires (March 2001), the City must file a Report of Waste Discharge in accordance with Title 23 of the CCR for renewal of waste discharge requirements if the City wishes to continue permitted discharges.

<u>Trace Element Testing</u>

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that could cause or contribute to exceeding EPA water quality standards. From 1991 to 1995, the City conducted sampling for trace element levels for antimony, arsenic, cadmium, chromium, copper, cyanide, lead, mercury, nickel, selenium, silver, thallium, and zinc. The sampling revealed that with the exception of mercury, no significant exceedances were found of established EPA water quality criteria for trace elements. However, the mercury sampling technique the City used in 1991 may not have been able to detect to a level necessary to make an absolute determination. As such, in addition to the requirements summarized above, the NPDES Permit required the City to conduct "clean technique" sampling for mercury.

As stated in correspondence from the City Utilities Department to the CVRWQCB dated May 23, 1996, during the 1994-1995 wet season clean techniques (including lower detection limits) were used on eleven discharge samples. These results indicate lower mercury levels using clean techniques. However, the CWTP still exceeds the EPA 30-day criteria for the dissolved and total fractions, and Pioneer Reservoir and Sump 2 for the total fraction only. An assessment was undertaken to determine if the mercury levels in the CSS discharges have a "reasonable potential" to cause or contribute to an exceedance of the water quality criteria in the Sacramento River. The City concluded that the mercury loadings from CSS discharges do not have a reasonable potential to cause or contribute to an exceedance of the water quality criteria in the Sacramento River. This determination is currently under review by the CVRWQCB.

Location

The CSS service area encompasses approximately 11,300 acres (see Figure 1 of the NOP). Approximately 7,500 acres of the service area includes the Downtown, East Sacramento, and Land Park areas, which contribute both sanitary sewage and storm drainage flows to the CSS. A second area of approximately 3,700 acres encompasses the River Park, California State University, and far eastern Sacramento areas and contributes only sanitary sewage flows to the CSS. Lastly, a third area of approximately 100 acres located in southern Sacramento contributes only storm drainage flows.

Plan Description

The CSS Rehabilitation and Improvement Plan is divided into two phases. Phase 1 includes specific modifications to existing Sump 1/1A, Sump 2, Pioneer Reservoir and rehabilitation and replacement of the existing underground collection/piping system. Phase 2, while more programmatic in its definition, would involve designing and constructing a combination of facilities including underground storage structures, upsized sewers and sewer replacement. Rehabilitation and replacement of the CSS system would continue during Phase 2. These two phases are described below.

Phase 1 Description

The primary objective of Phase 1 is to implement project-specific improvements and rehabilitation to the CSS that would assure operating reliability and reduce street flooding in the CSS service area. These improvements would be implemented over the first five years of the Plan. The components of Phase 1 are as follows:

1. Sump 1/1A: Increase the capacity from 130 MGD to approximately 200 MGD. A listing of specific rehabilitation items and improvements for Sump 1/1A is included in Appendix B as Table B-1. Improvement items are defined as those items which would increase pumping capacity to reduce flooding within the CSS. Rehabilitation items are defined as those items which improve the reliability, operations, and maintenance of the existing

sump. Rehabilitation would generally include replacing worn or obsolete equipment, repairing corroded equipment or structures, and providing additional equipment and controls to improve sump operations.

2. <u>Sump 2:</u> Increase the reliability and ease of operation of the existing Stage 1 and 2 pumps and construct a new adjoining 160 MGD pump station, which would pump all dry weather flow from the CSS. Modifications for Sump 2 also include the addition of an emergency generator and locker/restroom facility. The location of these items would be on-site, but may require partial demolition of the Riverside Wastewater Treatment Plant. It has been assumed that this would need to occur. A listing of specific rehabilitation items and improvements for Sump 2 is included in Appendix B as Table B-2.

3. <u>Pioneer Reservoir:</u> Convert the existing wastewater reservoir to a primary treatment facility by adding disinfection. It is assumed that the reservoir is retained in its present serpentine flow configuration with an existing peak hydraulic capacity of 350 MGD. This disinfection system would kill pathogenic organisms prior to discharge to the Sacramento River. Dechlorination would also be provided to reduce the toxic effects of disinfection on aquatic life. The disinfection system would utilize sodium hypochlorite for disinfection. Sodium bisulfite would be used for dechlorinating discharges.

   Complete an Equivalency Demonstration Program to show that the reservoir, in its present configuration, removes total suspended solids as well as the CWTP. If equivalent performance cannot be demonstrated, it would be necessary to proceed with modifications to the reservoir to increase solids removal capability. These modifications would likely consist of converting the reservoir into a set of three parallel primary sedimentation basins. The treatment capacity of the reservoir could be between 107 and 350 MGD.

4. <u>Rehabilitation and Replacement of the Collection System Underground Piping:</u> Selected laterals (under 16 inches in diameter), mains, and interceptors (up to 114 inches in diameter) would be rehabilitated or replaced. Both conventional trenching and trenchless technology would be utilized, and be dependent upon the type of improvement needed. The exact locations of these improvements and construction technique to be utilized are unknown. However, the CSS area would be divided into subareas of 20 to 50 acres for purposes of design and construction, and construction would be timed with other City infrastructure projects to minimize disturbance. Areas experiencing the most severe flooding and containing the more deteriorated sewers would be targeted first. These areas are likely in the downtown area which contains the older brick sewers. Rehabilitation and replacement of the system would take place over a 30+ year period.

This initial phase involves the two existing sumps since the sumps are responsible for pumping all CSS wastewater for treatment and disposal. Without the operating reliability of the sumps, the system could fail and result in flooding and severe outflows. However, increasing sump capacities alone cannot address these issues. It is also necessary to modify Pioneer Reservoir, which would decrease the number and volume of CSOs to the Sacramento River. In addition, since the capacity of the system would be increased, the underground piping system must also be improved. The piping system is almost 100 years old and has structural defects including cracked pipes, corrosion, deteriorated and missing grout at pipe joints, and root intrusion that can clog sewers and limit hydraulic capacity.

Phase 2 Description

The objective of Phase 2 is to design and construct facilities to alleviate flooding and outflows to local areas. At this time, the combination of facilities needed is unknown. Therefore, these components are evaluated at a more general, programmatic level than Phase 1. The Phase 2 facilities consist of the following options.

1. Inflow Control and Local Storage (ICALS): ICALS consist of shallow, underground local storage structures used to temporarily store combined wastewater until there is adequate capacity in the downstream collection system to accommodate the flow. These facilities are usually constructed of large diameter concrete pipe or rectangular pre-cast concrete box sections that are installed end-to-end to provide the necessary length to accommodate storage. These gravity-flow facilities do not require drainage pumps. Local storage projects may be implemented in certain areas early in the phasing of the CSS Plan due to public concern about frequent flooding and outflows.

2. Subregional and Regional Storage: These facilities work in conjunction with ICALS. They consist of relatively deep storage facilities that temporarily store combined wastewater until there is adequate hydraulic capacity in the downstream collection system to accommodate the flow. These facilities usually consist of reinforced, cast-in-place concrete boxes. Since these facilities are placed deeper than ICALS, pumps are required to drain the storage box following a storm. Two sites are under consideration for the location of the regional storage facility; within the Union Pacific Railroad (UPRR) yard and the University of California Davis (UCD) Medical Center area. The City does not intend on placing the regional storage facility within a private easement.

3. Upsized Sewers: Upsized sewers are gravity-flow pipelines installed to relieve existing sewers that do not have adequate capacity to convey peak flows. Upsized sewers also provide in-line storage of flows. An upsized sewer is installed from the location where the deficient capacity exists to a downstream location where sufficient flow capacity exists. It should be noted the feasibility of a network of large upsized sewers in the Central Business District in lieu of ICALS is currently under evaluation.

4. Sewer Replacement/Rehabilitation: Sewer replacement is utilized when an existing sewer is damaged beyond repair and there is inadequate space to install an upsized sewer. The new sewer is often larger than the old sewer. To avoid excavating large areas, trenchless technology may be used and includes a technique called "sewer bursting." This technique breaks and expands the existing pipe in order to insert a new pipe in the expanded line.

In some locations, sewers need not be increased in diameter and only need rehabilitation. In these cases "in-situ lining" is often utilized which involves inserting liners inside the existing cracked or broken sewer. Existing pipes are expanded using pressure or heat. This technique does not require excavation of the entire street.

5. Public Education and Early Response Action Plan: Developing an early response plan for rain patrols would be an important non-structural component of the CSS Plan. In addition, efforts would be made to remove sources of inflow on private property. A public education program would be implemented to persuade property owners to make needed repairs to help correct a community problem.

6. CWTP: This component of Phase 2 is in the early stages of pre-design report preparation. Evaluation of various designs will consider nine system items, present a schedule for design and construction, and estimates of present worth of lifecycle costs.

Objectives

The overall objectives of the CSS Improvement and Rehabilitation Plan are as follows:

1. Reduce or eliminate outflows that are considered a possible threat to public health;

2. Reduce and improve the quality of the CSS overflows to the Sacramento River where they are considered a potential threat to the beneficial uses of the receiving waters and the "fishable/swimming" goals of the Federal Clean Water Act;

3. Comply with the requirements of the U.S. Environmental Protection Agency's (EPA) "Combined Sewer Overflow Control Policy", "Nine Minimum Controls", the National Pollutant Discharge Elimination System (NPDES) Permit, and the Clean Water Act.

4. Rehabilitate and improve all critical combined sewer system pumping stations, treatment facilities, and pipelines.

5. Reduce neighborhood street flooding problems where it is economically feasible to do so.

Alternatives

The City's goals for storm drainage are to minimize street flooding during a storm having a 10 percent probability of occurring every year (10-year storm) and to prevent property damage during a storm with a probability of one percent (100-year storm). Between 1990 and 1992 numerous alternatives were evaluated by the City to determine the most cost effective way to address the City's goals and federal and State requirements, as listed above. The EIR will identify those alternatives previously considered but dismissed by the City and identify the justifications for their dismissal. The alternatives selected to be evaluated in the EIR will be analyzed at an equal level to the proposed Phase 1 and Phase 2 components.

Related Projects

The EIR will contain a Related Projects Chapter which will identify and discuss current projects that are related to the CSS Plan. These include other sewer projects, such as the 42nd Street Drainage Area Improvement Project, and related land use plans. The land use plan discussion will address the UPRR planning effort and the UCD Medical Center Long Range Development Plan (LRDP) plans since these two areas are under consideration for Phase 2 components of the CSS Plan.

III. ENVIRONMENTAL CHECKLIST

Introduction

The following Checklist contains the environmental checklist form presented in Appendix I of the CEQA Guidelines. The checklist form is used to describe the impacts of the Proposed Project, which in this case is for Phase 1 and Phase 2 of the CSS Plan. It should be noted that the EIR may identify a number of potentially significant issues that may result from implementation of the alternatives, but not from the proposed CSS Plan. This Initial Study is intended to address those potential issues associated with the proposed CSS Plan only. A discussion follows each environmental issue identified in the checklist.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant. If any potentially significant impacts are identified, an EIR must be prepared.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

Beneficial Impact: An impact that would create a beneficial environmental effect.

No Impact: The project would not have any impact.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
1. LAND USE AND PLANNING. *Would the proposal:*				
a. Conflict with general plan designation or zoning?				
Phase 1	☐	☐	☑	☐
Phase 2	☐	☑	☐	☐

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
b. Conflict with applicable environmental plans or policies adopted by agencies with jurisdiction over the project?				
Phase 1	☐	☐	☑	☐
Phase 2	☐	☐	☑	☐
c. Be incompatible with existing land use in the vicinity?				
Phase 1	☐	☑	☐	☐
Phase 2	☐	☑	☐	☐
d. Affect agricultural resources or operations (e.g., impacts to soils or farmlands, or impacts from incompatible land uses)?				
Phase 1	☐	☐	☐	☑
Phase 2	☐	☐	☐	☑
e. Disrupt or divide the physical arrangement of an established community (including a low-income or minority community)?				
Phase 1	☐	☐	☐	☑
Phase 2	☐	☐	☐	☑

Discussion

(a) The City of Sacramento treats the discussion of land use and planning effects differently from the technical environmental issues. Land use issues will be presented in the EIR as part of the environmental setting as described in CEQA Section 15125. The physical environmental impacts which could result from the proposed CSS Plan will be discussed in the appropriate technical environmental sections of the EIR.

Phase 1

The project-specific components of Phase 1, including the improvements to Sump 1/1A, Sump 2, and the Pioneer Reservoir, would occur within areas designated for public utility uses. Additionally, these proposed improvements are considered allowable activities within the existing zoning designations. Therefore, the project-specific components of Phase 1 are not expected to result in any inconsistencies with adopted general plan designations or zoning. The issue will not be further addressed in the EIR.

Phase 2

Phase 2 components of the CSS Plan would include the construction and reconstruction of sewer pipelines and a regional storage facility within the service area. All of these improvements would occur within public rights-of-way areas and/or areas designated by the General Plan as Public/Quasi-Public and zoned by the City for public utilities. The City does not intend on placing the regional storage facility within a private easement.

Two sites are under consideration for the regional storage facilities; within the UPRR yard and the UCD Medical Center. Both of these sites are designated by the City General Plan as Public/Quasi-Public. This designation allows for the development of infrastructure projects. However, since both of these sites are in the land use planning stages, the regional storage facility would need to be evaluated in the context of those plans. The UPRR and UCD Medical Center land use plans will be further addressed in the EIR in the Related Projects Chapter.

(b) Phase 1 and Phase 2

Implementation of Phase 1 and Phase 2 would meet the CSS Plan objectives of reducing local flooding and minimizing potential public health risks. Therefore, the CSS Plan would be consistent with General Plan goals and policies related to improving the overall quality of life in Sacramento. In addition, implementation of the CSS Plan would address Policy 11 related to provision of adequate public services in existing developed areas. The CSS Plan also implements a mitigation measure in the City's General Plan EIR (refer to the City's General Plan EIR, pages J-6 and J-7), which requires the reconstruction of local drainage facilities. With the possible exception of the regional storage facility under Phase 2 (refer to discussion under "a" above), the issue of potential conflicts with plans will not be further addressed in the EIR.

(c) Phase 1

As discussed under "a" above, the CSS Plan would not be in conflict with existing zoning and land use designations. The CSS Plan is proposed to support the existing land uses in the area by reducing flooding and minimizing health risks.

Phase 2

As discussed under "a" above, the CSS Plan would not be in conflict with existing zoning and land use designations. Since the regional storage facility would be primarily underground, the potential for on-site incompatibilities with other planned uses at the UPRR and UCD Medical Center sites would likely be less-than-significant. However, the two sites under consideration for the regional storage facility are in the land use planning stages. Therefore, the land uses that would be adjacent to the regional storage facility are unknown. The EIR will address how Phase 2 would relate to these land use plans in the Related Projects Chapter of the EIR.

(d) Phase 1 and Phase 2

Agricultural resources are not located within the areas that would be affected by the construction of Phase 1 and Phase 2 components. Therefore, the proposed CSS Plan would not result in any effects to agricultural resources or operations. The effects o f the CSS Plan are considered to have no impact on agricultural resources, and therefore will not be further addressed in the EIR.

(e) Phase 1 and Phase 2

All of the CSS Plan improvements and rehabilitation items would occur within existing rights-of-way and/or in areas designated for public use. The Plan components therefore would not result in the physical disruption or division of the arrangement on the community. The regional storage facility would be located underground with the exception of a small structure (approximately 15 feet high) that would contain operational equipment. The introduction of this structure at the UPRR or UCD Medical Center sites would not create a division of the community. Therefore, the issue related to the disruption or division of the physical community will not be addressed in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
2. POPULATION AND HOUSING. *Would the proposal:*				
a. Cumulatively exceed official regional or local population projections?	☐	☐	☐	☑
b. Induce substantial growth in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☑	☐	☐	☐
c. Displace existing housing, especially affordable housing?				
Phase 1	☐	☐	☐	☑
Phase 2	☐	☐	☐	☑

Discussion

(a) Phase 1 and Phase 2

Phase 1 and Phase 2 components of the proposed CSS Plan would support the development and buildout of the property within the CSS service area. However, the proposed components are not anticipated to exceed the official regional and local population projections, since the CSS Plan would not generate additional population as would a residential project, for example. The CSS Plan is intended to meet the demands and rectify the existing CSS problems that the current population experiences (refer to the discussion under "b" below for a discussion of growth inducing potential). This issue will not be considered in the EIR.

(b) Phase 1 and Phase 2

The CSS Plan is not intended to accommodate growth above and beyond the General Plan. The CSS Plan is meant to accommodate the demand from existing development within the downtown areas, which are primarily built out. If either planned infill development or unanticipated development require additional system capacity, modifications could be implemented to accommodate this type of development on an as-needed basis. To address this, the City could require the developer to pay its "fair share" for expanding the system, in accordance with the CSS Plan, pay City imposed impact fees, or require installation of ICALS, as described under Phase 2. Although the City anticipates that the CSS could meet the demand from infill or other projects, the potential cumulative effect these projects will have on the CSS will be further addressed in the EIR.

It should be noted that the Utilities Department must submit a "coordinated program of proposed public works for the ensuing fiscal year ... for conformity with the adopted general plan ... " (Article 7, Section 65401 of the *California Planning and Zoning Law* [California Government Code Sections 65000 through 66025]). This review mechanism ensures that infrastructure improvements are in pace with planned development.

In addition, the CSS Plan would not be growth inducing in and of itself. Implementation of the CSS Plan is intended to avoid a potential building moratorium that the CVRWQCB could bring into effect if the City did not address outflows of combined wastewater to city streets and unpermitted CSOs to the Sacramento River from the CSS.

(c) Phase 1

Construction of Phase 1 components would occur within areas designated for public utility uses. As such, the displacement of existing housing would not be considered an impact for Phase 1, and therefore will not be further addressed in the EIR.

Phase 2

With the exception of the regional storage facility, all improvements and rehabilitation items would occur within existing rights-of-way. The acquisition of some property may be required at the UPRR or UCD Medical Center sites, but this acquisition would not affect residential properties. This issue will not be further addressed in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
3. GEOLOGY. *Would the proposal result in or expose people to potential impacts involving:*				
a. Fault rupture?	☐	☑	☐	☐
b. Seismic ground shaking?	☐	☑	☐	☐
c. Seismic ground failure including liquefaction?	☐	☑	☐	☐

Issues		Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
d.	Seiche, tsunami, or volcanic hazard?	☐	☐	☐	☑
e.	Landslides or mudflows?	☐	☐	☐	☑
f.	Erosion, changes in topography or unstable soil conditions from excavation, grading, or fill?	☐	☑	☐	☐
g.	Subsidence of the land?	☐	☑	☐	☐
h.	Expansive soils?	☐	☑	☐	☐
i.	Unique geologic or physical features?	☐	☐	☐	☑

Discussion

(a,b,c) Phase 1 and Phase 2

No known active faults occur in or adjacent to the City of Sacramento. The closest known active fault mapped by the California Division of Mines and Geology (CDMG) is the Dunnigan Hills fault, located approximately 19 miles northwest of Sacramento. However, Sacramento is located in an area representing a probable maximum earthquake intensity of VIII on the Modified Mercalli Scale, as defined by the CDMG. The CSS area could be subject to potentially damaging seismic activity. However, issues related to fault rupture, seismic ground shaking, and seismically induced ground failures are addressed in the City's adopted *Standard Specifications for Public Works Construction* (1989) that requires construction contractors to build to City standards related to structural integrity. In addition, the individual components would be constructed to industry-provided design specifications and requirements, including the American Society for Testing and Materials (ASTM) standards. Therefore, this issue will not be further addressed in the EIR since these measures must be implemented as part of usual construction and implementing procedures.

Seiche, tsunami or volcanic hazards do not pose potential impacts to people and property in Sacramento. These issues will not be addressed in the EIR.

(e) Due to the nature of the proposed components and that the CSS area does not contain steep slopes, landslides and mudflows would not pose a potential risk to people or property. These issues will not be addressed in the EIR.

(f) Phase 1 and Phase 2

The potential exists for below-grade construction activity to encounter the groundwater table, which may require dewatering activities to maintain safety construction conditions and meet design requirements (exposure of construction workers to contaminated soils and groundwater are addressed under the "Hazards" discussion). These activities could compromise the integrity of excavation unless engineered controls are implemented. In addition, site preparation activities could expose soil to erosion. According to Title 8 of the California Code of Regulations (CCR) and Occupational Safety and Health Act (OSHA) requirements, excavations must be shored or otherwise stabilized to preclude slope failure during construction. In addition, the Uniform Building Code (UBC) Section A33 ("Excavation and Grading") also requires that shoring of trenches or other structural integrity measures are implemented, as well as erosion control measures. The City also has adopted *Standard Specifications for Public Works Construction* (1989) that must be implemented to ensure erosion and unstable soil conditions would not occur during construction. The ASTM standards would also apply. Therefore, these potential impacts would be minimized to less-than-significant levels by implementing existing federal, State and local regulations. These issues will not be further addressed in the EIR since measures must be implemented as part of usual construction and implementing procedures.

(g,h) Phase 1 and Phase 2

The potential exists for soils to affect the feasibility of pipeline construction, as well as create hazards for construction workers due to subsidence. Since the UBC, OSHA and the City's adopted *Standard Specifications for Public Works Construction* (1989) must be implemented to address these issues (also refer to the discussion under "Hazards"), the impact would be reduced to less-than-significant levels. The EIR will not address these issues further.

(i) No unique geologic features or formations exist within the CSS area. This issue will not be addressed in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
4. WATER. *Would the proposal result in:*				
a. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?				
Phase 1	☐	☐	☐	☑
Phase 2	☐	☑	☐	☐
b. Exposure of people or property to water-related hazards such as flooding?	☐	☐	☑	☐
c. Discharge into surface waters or other alteration of surface water quality (e.g., temperature, dissolved oxygen or turbidity)?	☑	☐	☐	☐
d. Changes in the amount of surface water in any water body?	☐	☐	☐	☑
e. Changes in currents, or the course or direction of water movements?	☐	☐	☐	☑

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
f. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations or through substantial loss of groundwater recharge capability?	☐	☑	☐	☐
g. Altered direction or rate of flow of groundwater?	☐	☑	☐	☐
h. Impacts to groundwater quality?	☐	☑	☐	☐
i. Substantial reduction in the amount of groundwater otherwise available for public water supplies?	☐	☐	☐	☑

Discussion

(a,d,e) Phase 1

The improvements proposed for Phase 1 and Phase 2 are not anticipated to increase the amount of impervious surface cover, and therefore, would not result in an increase in the amount or rate of surface runoff. No further analysis is necessary in the EIR.

Phase 2

Because the existing system is a combined storm water and sewer system, during heavy storm events the CSS experiences overflows to the Sacramento River. The proposed CSS Plan would implement improvements to increase the capacity of the CSS and to alleviate untreated overflows to the Sacramento River. The amount of storm water entering the Sacramento River would not be significantly altered, if at all, as a result of Plan implementation. This issue will not be addressed in the EIR.

(b) Phase 1 and Phase 2

Within the CSS service area, the terrain is flat and many of the sewers and facilities are undersized and need rehabilitation. As a result, localized flooding occurs in six "wet areas" during large storm events. Local flooding occurs when the CSS is full and storm water runoff cannot enter the system. An objective of the CSS Plan is to reduce localized flooding problems. The proposed CSS Plan would have a beneficial effect in the manner in which storm water runoff is collected and discharged. The CSS Plan would reduce flooding in the area by storing combined wastewater until the system can accommodate the flows.

Portions of the CSS service area are within the 100-year floodplain. It should be noted that the CSS Plan is not intended to address regional flooding issues associated with 100-year events. These issues were addressed in the EIR for the *Land Use Planning Policy*

Within the 100-Year Floodplain project. This analysis determined that flood-related risks to people and property created by new development in the 100-year floodplain would be significant and unavoidable. The City Council adopted the Policy making a finding of overriding consideration as set forth in the *Findings of Fact/Statement of Overriding Considerations for the Land Use Planning Policy Within the 100-Year Floodplain in the City of Sacramento*. This document and the EIR are available for review through the Department of Planning and Development.

(c) Phase 1 and Phase 2

Implementation of the proposed CSS Plan would include temporary earth disturbing activities which could result in increased rates of soil erosion leading to increased sediment loads in storm water runoff. This could adversely affect receiving water quality. All earth disturbing activities would be required to comply with the City's Grading, Erosion, and Sediment Control Ordinance (Ordinance 93-068). This ordinance requires preparation of erosion, sediment and pollution control plans for both during and after constriction of a proposed project, and preliminary and final grading plans. Best Management Practices (BMPs) are required to be developed as part of these plans. BMPs are approved by the City's Department of Utilities and include, but are not limited to: storm water drainage inlet protection including the use of straw bales, sandbags and gravel traps and filters. In addition, construction contractors must file a Notice of Intent under the State General Construction Activity Stormwater Permit in addition to the City's Ordinance. Compliance with existing State and local regulations would mitigate any potential water quality impacts during construction related to sedimentation, erosion, and debris/waste disposal. The issue will not be further evaluated in the EIR.

The CSS currently discharges flow into the Sacramento River. The quality of water in the Sacramento River is generally considered excellent and supports numerous beneficial uses including municipal and agricultural supply, and fish and wildlife uses. As previously identified in the discussion for Item 4(a), during heavy storm events the CSS experiences untreated overflows to the Sacramento River. The proposed CSS Plan would implement improvements to increase the capacity of the system and to reduce untreated overflows to the Sacramento River below existing discharge levels. It is therefore anticipated that implementation of the Plan would result in a beneficial impact on Sacramento River quality. However, since the CSS does experience these overflows to the Sacramento River it is required to comply with WDRs set forth in the NPDES permit (refer to the Project Description). The WDRs include prohibiting unpermitted discharges, limiting excess effluent discharges and complying with CVRWQCB water quality objectives. Regarding effluent limitations, the Sacramento River water quality was tested by the City during the 1994-1995 season specifically for mercury since previous testing indicated exceedance of EPA criteria. Although the 1994-1995 sampling revealed that the CSS discharges do not have a reasonable potential to contribute to or cause an exceedance of mercury criteria, the CVRWQCB has not made its final determination. As such, the amount of mercury discharged from the CSS is considered a potentially significant impact. The EIR will describe existing water quality, the regulations governing water quality and the resulting impacts of the project.

(f,g,h) Phase 1 and Phase 2

The presence of groundwater can greatly influence the construction methods and materials utilized. Groundwater in the City of Sacramento can be relatively shallow, generally of good quality, and suitable for municipal water supply and disinfection. Due to the shallow depth to groundwater in some portions of the CSS service area, it is possible that proposed improvements could encounter groundwater and require dewatering during construction. Dewatering activities could result in a short-term change in the quantity of groundwater, and/or direction or rate of flow, and groundwater quality. However, dewatering must comply with application requirements established by the CVRWQCB to ensure that dewatering activities would not result in changes to groundwater quality. Continuous dewatering can increase the potential for water quality impacts. The Department of Utilities has indicated that no continuous dewatering would occur. Since the requirements of the CVRWQCB must be implemented, the impact would become less-than-significant. This issue will not be further evaluated in the EIR. Also refer to the discussion under "c".

(i) Phase 1 and Phase 2

The City does not rely on groundwater for its source of public water supply. As such, the CSS Plan would not have any effect on water supply.

Issues		Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
5.	**AIR QUALITY.** *Would the proposal:*				
	a. Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☑	☐	☐
	b. Expose sensitive receptors to pollutants?	☐	☑	☐	☐
	c. Alter air movement, moisture, or temperature, or cause any change in climate?	☐	☐	☐	☑
	d. Create objectionable odors?	☐	☑	☐	☐

Discussion

(a) Phase 1 and Phase 2

The proposed CSS Plan would include natural gas and/or diesel engines to power emergency generators, increasing the number of system elements capable of generating emissions of criteria air pollutants. However, these generators would be used only when electricity from Sacramento Metropolitan Utility District (SMUD) power lines is unavailable or sporadically available. Such conditions can occur during severe weather conditions such as thunder storms or high winds. Typically, emergency power would be utilized on no more than a few occasions each year, and for no more than a few hours at a time. This usage and the resulting emissions would typically not occur during periods of the year (summer and early fall) when regional air quality is at its worst. The generators would also be powered on each month to assure that they are functioning properly, but the duration of these tests would be very brief. In addition, the pump station site is within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review activities. The SMAQMD is responsible for implementing emissions standards and other requirements of federal and state laws.

SMAQMD rules provide that a project is exempt from SMAQMD regulations if it provides emergency water pumping for flood control, is not a major source or major modification under the EPA definition, and operation for maintenance purposes is limited to 100 hours per year and scheduled in cooperation with the District. Since operation of the pump station would meet these criteria, this is considered a less-than-significant impact.

Increases in employee commute and system maintenance trips and deliveries related to the CSS Plan would have a negligible effect on levels of criteria air pollutants.

Construction activities associated with the CSS Plan could generate emissions of particulates. Fugitive dust is solid airborne or "particulate" matter emitted from any non-combustion sources, such as that occurring during construction. The SMAQMD has a regulation that limits the amount of fugitive dust emissions that occur periodically. This regulation, Rule 403, states:

> A person shall take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation. Reasonable precautions shall include, but are not limited to:
>
> 301.1 Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the construction of roadways, or the clearing of land.
>
> 301.2 Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts.
>
> 301.3 Other means approved by the Air Pollution Control Officer.

In addition to this SMAQMD Rule, the City Code requires control of dust in Section 9.09.381. This Code Section requires:

> Any person who has been issued a permit for any work covered by this code shall take reasonable precautions to prevent and control the movement of dust created by work activities to adjoining public or private property. Such dust shall be immediately settled by wetting the same. Work activities shall be stopped during periods of high winds that may carry dust from the job site before it can be settled by wetting.

It should also be noted that construction activities are expected to occur over relatively small areas, with little grading or ground disturbance of unpaved areas, which would not result in as much fugitive dust as construction on non-urban land.

These issues relative to potential air quality impacts, short-term and long-term, will not be evaluated in the EIR.

(b) Phase 1 and Phase 2

Refer to the discussion under (a).

(c) Phase 1

Any change in the surface area of exposed water at the Pioneer Reservoir site as a result of its utilization as a primary treatment facility would be insignificant due to the small size of the reservoir compared with the adjacent Sacramento River. None of the changes to the structures on this site or at the other Phase 1 facilities (e.g., the additions of enclosures for proposed emergency generators) would be substantial enough to cause climatological impacts.

Phase 2

Most of the system rehabilitation and improvements under Phase 2 would be performed on underground sewer lines, resulting in essentially no permanent change in the ground surface above. While less surface runoff may occur during storm events as a result of project-related enhancements, this would have essentially no effect on local or regional climatological factors.

None of the proposed Phase 1 or Phase 2 rehabilitation and improvement components would create a substantial alteration of air movement, moisture, or temperature, or cause any change in regional climate. These issues will not be addressed in the EIR.

(d) Phase 1

Although there is currently odor control at the existing Sump 2, there have been a number of odor complaints within the vicinity. To address this issue, the CSS Plan includes a new wet well and new odor controls at the Sump 2 facility. The new wet well would flush out solids more effectively. Sodium hypochlorite, or some other form of odor control, is proposed to eventually replace the existing chlorine gas system to eliminate safety concerns regarding delivery, storage, and use. In addition, the improvements would enhance the ability of the CSS to reduce the amount of standing water in the system, thereby reducing the opportunity for deposition of solids and generation of odors. Since the CSS Plan is designed to specifically address this existing odor issue and would result in a beneficial impact, the issue for Phase 1 will not be addressed in the EIR.

Phase 2

The system rehabilitation proposed under Phase 2 would enhance future system reliability, thereby reducing the potential for future system ruptures leading to acute odor impacts. However, the provision of additional capacity for peak storm events -- e.g., via upsized sewers -- could result in low dry weather flow velocities, increased deposition rates and greater generation of odors during summer months. Recent studies conducted by the City to address this issue have determined that system velocities during the summer months would be sufficient to flush the system and minimize any odor impacts. Therefore, the CSS Plan is designed to specifically address this odor issue and would result in a less-than-significant impact. This issue will not be addressed in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
6. TRANSPORTATION/CIRCULATION. *Would the proposal result in:*				
a. Increased vehicle trips or traffic congestion?	☐	☑	☐	☐
b. Hazards to safety from design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☑	☐	☐
c. Inadequate emergency access or access to nearby uses?	☐	☑	☐	☐
d. Insufficient parking capacity on-site or off-site?	☐		☐	☐
e. Hazards or barriers for pedestrians or bicyclists?	☐	☑	☐	☐
f. Conflicts with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☑	☐	☐
g. Rail, waterborne or air traffic impacts?	☐	☑	☐	☐

Discussion

a-g. The proposed project is not a traffic generator and as such would not result in a long term increase of vehicle trips. The City has adopted Standard Specifications for Public Works Construction that will address short term construction related congestion. Section 6, "Legal Relations and Responsibilities to the Public," requires that the contractor be responsible for furnishing, installing and maintaining all warning signs and devices necessary to safeguard the general public, and to provide for proper and safe routing of vehicular and pedestrian traffic during construction. A traffic control plan is also required and must comply with the Work Area and Traffic Control Handbook (WATCH). This section also specifically requires that traffic must be allowed to pass at all times while working within the public right-of-way. Since the City must comply with the City adopted Standard Specifications, which would reduce the sort term impacts to less than significant levels, this issue will not be further addressed in the EIR.

Issues		Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
7.	**BIOLOGICAL RESOURCES.** *Would the proposal result in impacts to:*				
	a. Endangered, threatened or rare species or their habitats (including, but not limited to plants, fish, insects, animals, and birds)?	☐	☐	☑	☐
	b. Locally designated species (e.g., heritage trees)?	☐	☑	☐	☐
	c. Locally designated natural communities (e.g., oak forest, coastal habitat, etc.)?	☐	☐	☐	☑
	d. Wetland habitat (e.g., marsh, riparian and vernal pool)?	☐	☐	☐	☑
	e. Wildlife dispersal or migration corridors?	☐	☑	☐	☐

Discussion

(a) Phase 1 and Phase 2

Construction of the proposed Phase 1 and Phase 2 components within the built urban environment of Sacramento would not result in any impacts to endangered, threatened or rare species or their habitat. Construction would be restricted to existing streets and pumping facilities within the City of Sacramento where no endangered, threatened or rare species, or their habitat occur. The increased treatment capacity under the operation of the proposed project would have a beneficial effect on Sacramento River endangered and threatened fish species such as the winter run chinook salmon and the Delta smelt. The increased treatment capacity would result in less untreated combined wastewater being pumped directly into the Sacramento River during the wet season. This beneficial impact will not be further addressed in the EIR.

(b) Phase 1 and Phase 2

Construction of Phase 1 and Phase 2 could adversely affect street trees where streets will require excavation for sewer pipeline rehabilitation or replacement. Many City street trees are considered to be heritage trees as defined by the City Tree Ordinance as any tree of any species with a trunk circumference of one hundred (100) inches or more and any native *Quercus* species (oaks), *Aesculus californica* (buckeye), and *Platanus racemosa* (sycamore) having a circumference of 36 inches or greater. The City's tree ordinance and heritage tree program require approval by the Director of City Neighborhood Services prior to the removal of any street tree (including heritage trees) as well as any activity that may injure, cut roots, deface, prune, or scar a street or heritage tree. Under the pipeline rehabilitation program, root control may involve chemical treatment (non-systemic herbicide) for complete root removal. This procedure is intended to kill roots and inhibit their growth without damaging trees and plants. It is the responsibility of any public agency to obtain permission from the Director of Neighborhood services prior to performing any construction activity that might harm street or heritage trees. Since the Utilities Department must follow this existing City procedure, the impact is considered less-than-significant. This issue will not be addressed in the EIR.

(c) Phase 1 and Phase 2

No locally designated natural communities (such as oak forests) exist within the CSS service area. Therefore, no impact on any natural communities would result from the proposed CSS Plan. This issue will not be addressed in the EIR.

(d) Phase 1

No structural modifications are necessary to intakes or outfalls. No wetlands or waters of the U.S. are within the CSS Service Area that could be affected by implementation of the CSS Plan. Therefore, no impacts would occur to wetland habitats or other waters of the U.S. This issue will not be addressed in the EIR.

e) Phase 1 and Phase 2

Phase 1 and Phase 2 would not have a significant impact on wildlife dispersal or migration corridors. However, some migratory bird species (mostly song birds and some raptors such as the Cooper's and sharp-shinned hawks) use the Sacramento urban landscape for migration and dispersal to and from breeding and wintering grounds. Some will nest in urban trees (such as the American robin) while others will either pass through during migration or spend the winter in the area. Migratory birds are protected against take (possession or killing) under the Migratory Bird Treaty Act. During the non-breeding season the "take" of birds would not occur since birds are highly mobile and will easily escape if disturbed by construction. Although there would be no tree removal, the take of "common" migratory birds could occur if they are nesting in a tree to be pruned during nesting season. Pruning of trees during the non-breeding season or avoidance of nest sites until the adults and young of the year are no longer dependent on the nest site would make this a less-than-significant impact. Although there is no City ordinance for the protection of nesting migratory birds the City Arborist would contact the Department of Fish and Game for guidance on any conflict issue. The issue is resolved by avoiding the tree during nesting season.[1] This issue will not be further evaluated and confirmed in the EIR.

Issues		Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
8.	**ENERGY AND MINERAL RESOURCES.** *Would the proposal:*				
a.	Conflict with adopted energy conservation plans?	☐	☑	☐	☐
b.	Use non-renewable resources in a wasteful and inefficient manner?	☐	☑	☐	☐
c.	Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	☐	☐	☐	☑

Discussion

a) Phase 1 and 2

The proposed CSS Plan would not conflict with any applicable energy conservation plans. This issue will not be addressed in the EIR.

b) The CSS meets its energy requirements through the use of electricity and fossil fuels. Electricity obtained from SMUD is generated partially through the consumption of non-renewable resources, while fossil fuels are themselves non-renewable resources.

Phase 1

The existing pumps at Sump 1A are powered by electric motors. Proposed Phase 1 improvements include the installation of Eddy-current clutches, which facilitate variable-speed operation by allowing the existing motors to operated at full speed while the clutch provides the necessary pump speed reduction. This modification would enhance pumping effectiveness at the expense of greater electricity consumption. Proposed improvements also include the installation of jacket water heaters on each of the three natural gas engines at Sump 1 to allow pre-heating during storm events, readying the engines for immediate operation when needed. The heating units quoted in the Preliminary Design Report are rated at 2,500 watts (W) each. They would consume much less electricity than would the electric motors used at Sump 1A. The diesel-fueled emergency power generator proposed for Sump 1/1A would allow for uninterrupted operation of electric-powered equipment at these facilities, but the reduced efficiency of emergency power generation could lead to a slight increase in long-term energy consumption. While each of the modifications identified above could result in increased energy consumption, the resulting inefficiencies would be experienced only for brief periods during peak storm events.

The 160-mgd pumping station proposed at the Sump 2 facility would include six new pumps, each driven by a 300-horsepower electric motor. The total increase in the connected load at the facility would be about 1,800 kilowatts (kW). This represents a more substantial increase in energy consumption than would occur at Sump 1/1A, especially since three of the six new pumps would be dedicated to dry-weather pumping and would operate continuously. In addition, a new 200 MGD pump station may be required at Pioneer Reservoir as part of Sump 1/1A improvements. However, the power required by these motors would not be used wastefully or inefficiently. A natural gas-fueled emergency generator is also proposed for Sump 2, but, as with Sump 1/1A, any inefficiencies associated with its use would be minor since it would be used rarely and briefly. Proposed modifications at the Pioneer Reservoir are expected to have a less-than-significant increase in energy consumption.

Energy would also be consumed during construction activities at the Phase 1 facilities. However, this consumption would occur only temporarily. This impact is considered less-than-significant, and will not be further addressed in the EIR.

Phase 2

The primary cause of energy consumption associated with Phase 2 activities would be construction activities. However, construction-related energy consumption would occur only temporarily, and would not create any long-term significant impacts.

Increased energy use would not result in significant impacts. The issue will not be addressed in the EIR.

(c) Refer to discussion under "Geology."

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
9. HAZARDS. *Would the proposal involve:*				
a. A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation)?	☐	☑	☐	☐
b. Possible interference with an emergency response plan or emergency evacuation plan?	☐	☑	☐	☐
c. The creation of any health hazard or potential health hazard?	☐	☑	☐	☐
d. Exposure of people to existing sources of potential health hazards?	☐	☑	☐	☐
e. Increased fire hazard in areas with flammable brush, grass, or trees?	☐	☐	☐	☑

Discussion

(a,c,d) Phase 1

The proposed improvements would have a beneficial effect in that they would reduce exposure to outflows of combined wastewater during storm events and reduce flooding. However, in fulfilling these human health objectives, the improvements may also create the potential for other health hazards.

The proposed conversion of Pioneer Reservoir to a primary treatment facility requires the addition of a disinfection system to kill pathogenic organisms prior to discharge to the Sacramento River in order to protect public health. Dechlorination must also be provided to reduce the toxic effects of disinfection on aquatic life. The disinfection system would utilize sodium hypochlorite for odor control instead of chlorine gas to avoid safety hazards. Sodium bisulfite would be used to reduce the residual chlorine concentration. These chemicals, including chlorine, are currently used at the City's CWTP. Although chlorine gas is currently used, it would eventually be phased out with implementation of the CSS Plan. The chemicals would be stored in four 10,000 gallon above ground tanks that would be installed inside a concrete block spill containment area. Proposed changes to both Sumps involve the use of generators for which diesel or gas may be used. Some lubricating oils, which may contain hazardous material, may also be present for routine operation and maintenance. Additionally, due to the electrical equipment that is used at pumping stations, the potential exists for explosion. The City is required to comply with existing federal and State laws and regulations that would reduce potential risks of exposure to these hazards. Federal agencies overseeing regulatory controls on hazardous materials are the EPA, the OSHA, the Nuclear Regulatory Commission (NRC), the Department of Transportation (DOT), and the National Institutes of Health (NIH). Hazardous waste regulations are overseen by the EPA under the Resource Conservation and Recovery Act (RCRA). The EPA handles hazardous waste sites under the Comprehensive Response Compensation and Liability Act (CERCLA). Applicable federal regulations are contained primarily in Titles 29, 40 and 49 of the Code of Federal Regulations (CFR).

State agencies overseeing regulatory controls on hazardous materials are the California Environmental Protection Agency (Cal-EPA) and the Office of Emergency Services (OES). The California Highway Patrol (CHP) and California Department of Transportation (Caltrans) enforce regulations for hazardous materials transport. Within the Cal-EPA, the Department of Toxic Substances Control (DTSC) has primary regulatory authority for hazardous materials regulation enforcement. State hazardous waste regulations are contained primarily in Title 22 of the CCR. The CCR also addresses hazardous materials by requiring that the removal of collected screenings, sludges and other solids from liquid wastes be disposed in a manner consistent with Chapter 15, Division 3 of Title 23. Since the City must implement and comply with existing regulations, impacts related to exposure to hazardous materials will not be further addressed in the EIR.

Phase 1 and Phase 2

In addition to the potential impacts identified for the Phase 1 project-specific components, both Phase 1 and Phase 2 components of the CSS Plan would involve trenching for rehabilitation of existing pipelines in the CSS area. Trenching work could expose workers to pre-existing soil and/or contaminated groundwater plumes. The rehabilitation of existing pipelines may also involve sewer bypassing, which could result in sewage spillage. Asbestos may be an issue at the Riverside Wastewater Treatment Plant if partial demolition is required to accommodate the emergency generator and locker/restroom facility for Sump 2. The application of chemical grouting and chemical treatment to inhibit root growth may also be utilized as part of the pipeline rehabilitation program. The potential exposure to hazardous materials and waste through skin contact, inhalation and accidental ingestion, is considered significant. However, all hazardous materials storage, use, transportation and disposal is highly regulated (refer to discussion under Phase 1). Specifically related to worker safety includes Cal/OSHA, which requires a site health and safety plan to ensure the protection of worker safety during construction from hazardous materials and substances (8CCR 5208). Since the City must implement and comply with existing regulations, impacts related to exposure to hazardous materials will not be further addressed in the EIR.

(b) Phase 1 and Phase 2

Construction activities associated with both Phase 1 and Phase 2 components could create possible interference with emergency response plans or routes in the CSS area. Temporary closure of streets or portions of streets and construction within intersections could interfere with police and fire response to emergency calls. However, the City has adopted *Standard Specifications for Public Works Construction* that would address this issue in Section 6 "Legal Relations and Responsibilities to the Public". This section requires that the contractor be responsible for furnishing, installing and maintaining all warning signs and devices necessary to safeguard the general public, and to provide for proper and safe routing of vehicular and pedestrian traffic during construction. A traffic control plan is also required and must comply with the Work Area and Traffic Control Handbook (WATCH). The section also specifically requires that traffic must be allowed to pass at all times while working within the public right-of-way. Since construction must comply with the City's adopted Standard Specifications, which would reduce impacts to less-than-significant levels, this issue will not be further addressed in the EIR.

(e) Phase 1 and Phase 2

The proposed CSS plan would not create an increased fire hazard in areas with flammable brush, grass or trees. Improvements would take place under city streets and within existing CSS structures. The presence of electrical equipment creates the potential for fire. However, the equipment must be installed in accordance with the National Fire Protection Association (Code 820), which requires all electrical equipment, particularly arc-producing equipment such as switches, to be explosion proof. Due to the implementation of these required standards, the CSS Plan would not result in the creation of fire hazards. This issue will not be addressed in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
10. NOISE.				
Would the proposal result in:				
a. Increases in existing noise levels?				
Short-term	☐	☐	☐	☑
Long-term	☐	☑	☐	☐
b. Exposure of people to severe noise levels?				
Short-term	☐	☐	☐	☑
Long-term	☐	☑	☐	☐

Discussion

a) Short-Term

Phases 1 and 2

Construction activities associated with Phase 1 and 2 rehabilitation and improvements could temporarily increase noise levels at nearby noise-sensitive receptors. City Code Chapter 66, "Noise Control", exempts activities including erection, excavation, demolition, alteration or repair of any building or structure between the hours of 7:00 a.m. and 6:00 p.m., Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. on Sunday. Internal combustion engines that are not equipped with suitable exhaust and intake silencers which are in good working order are not exempt. However, conformance with the City's Noise Control Ordinance would assure that the resultant noise impacts would remain less-than-significant. This issue will not be further addressed in the EIR.

Construction activity could also create vibration impacts which can pose a risk to nearby structures. Typical construction activity for the CSS Plan that could create vibration would include pavement breaking, the use of haul trucks or larger earthmoving and debris trucks, and possibly pile driving for the underground storage structures. Although there are no federal, State or City standards for vibration, the industry used threshold for determining significant impacts is a peak vibration particle velocity greater than 0.50 inches per second.[2] Earthmovers and haul trucks have never exceeded 0.10 inches per second at ten feet. Earth breaking equipment results in vibration levels below 0.20 inches per second. Although pile driving creates more vibration at 0.25 inches per second within 50 feet, the standard would not be exceeded.[3] Since the construction activity that would be associated with implementation of the CSS Plan would not exceed accepted standards, the impact is considered less-than-significant. This issue will not be further addressed in the EIR.

Long-Term

Phase 1

Noise-generating equipment introduced under Phase 1 of the CSS Plan would include additional electric motors for the proposed 160-mgd pumping station at the Sump 2 facility (located within a building enclosure), emergency power generators at Sumps 1/1A and 2 (located within dedicated enclosures), and automatic screen cleaners for the new pumping station (located at sewer inlets outside of building enclosures). Noise impacts from the first two source categories would be mitigated by the intervening solid enclosures, and by the fact that all of the individual sources except the three motors dedicated to dry-weather pumps would be operated only rarely and briefly. Regarding the emergency power generators, these uses are specifically exempt from the City's Noise Control Ordinance which allows any device or equipment related to or connected with emergency activities or emergency work. In addition, land uses surrounding Sump 1/1A are relatively insensitive to noise impacts, and Sump 2 is located near enough to Interstate 5 such that traffic noise tends to mask the impact of the project noise sources. The automatic screen cleaner, while inherently less noisy than the other two source categories, would operate continuously on an adjustable-length cycle, would not be mitigated by an intervening enclosure, and would be located on the opposite side of the facility from the freeway (tending to reduce the masking effect of freeway noise). Although these potential noise-generating equipment would likely be mitigated by design and required enclosures, the issue will be addressed and confirmed in the EIR.

Phase 2

Unlike Phase 1 modifications, Phase 2 modifications would not include any engines, motors or other powered devices, and all components would be buried underground. Furthermore, increases in employee commute and system maintenance trips related to the proposed Phase 2 improvements are expected to be minor. Therefore, long-term noise impacts are expected to be negligible. These issues will not be addressed in the EIR.

b) Short-Term

Phases 1 and 2

Construction activities associated with Phase 1 and 2 rehabilitation and improvements could temporarily expose nearby noise-sensitive receptors to severe noise levels. Refer to discussion under "a" above.

Long-Term

Phase 1

For reasons described under item (a) above, noise impacts associated with the new electric motors and emergency generators proposed as part of Phase 1 are not expected to generate severe noise levels at nearby noise-sensitive receptors. While noise from the proposed automatic screen cleaner may increase ambient noise levels, it would not be expected to expose surrounding residents to severe noise levels. However, these long-term noise issues will be further addressed and confirmed in the EIR.

Phase 2

Unlike Phase 1 modifications, Phase 2 modifications would not include any engines, motors or other powered devices, and all components would be buried underground. Furthermore, increases in employee commute and system maintenance trips related to the proposed Phase 2 improvements are expected to be minor. Therefore, long-term noise impacts are expected to be negligible. These issues will not be addressed in the EIR.

Issues			Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
11.	**PUBLIC SERVICES.** *Would the proposal have an effect upon, or result in a need for new or altered government services in any of the following areas:*					
	a.	Fire protection?	☐	☑	☐	☐
	b.	Police protection?	☐	☑	☐	☐
	c.	Schools?	☐	☐	☐	☑
	d.	Maintenance of public facilities, including roads?	☐	☑	☐	☐
	e.	Other governmental services?	☐	☐	☐	☑

Discussion

(a-c,e) Phase 1 and Phase 2

Phase 1 and Phase 2 components of the CSS Plan would not result in any changes to the projected population of the region. Because the demand for government services is based upon the projected population, the CSS Plan would not result in a need for new or altered government services, including fire protection, police protection, schools and other governmental agencies.

However, construction of the CSS Plan may effect the provision of public services within the service area, including reducing the response times of fire and police protection services. Refer to the "b" discussion under "Hazards", which specifically addresses possible interference with emergency response plans. No impact would occur to schools or other governmental agencies. These issues will not be further evaluated in the EIR.

(d) Phase 1 and Phase 2

The improved and rehabilitated facilities would be maintained by members of the Utilities Department. This maintenance is not unforeseen nor would it require large increases in staff time. The CSS Plan was developed to reduce the amount of Operation and Maintenance required at the existing facilities. Therefore, the CSS Plan would not result in an increase for maintenance.

During construction, damage to roads could occur from use of heavy equipment. However, the City's Standard Specifications require that no damage to public property result from construction. The specification states that any property damage caused by the contractor shall be repaired to the satisfaction of the City Engineer by the contractor at his own expense. Also refer to the discussion under "Utilities and Service Systems". Since the CSS Plan must be implemented in accordance with City Standard Specifications these issues will not be further addressed in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
12. UTILITIES AND SERVICE SYSTEMS. *Would the proposal result in a need for new systems or supplies, or substantial alterations to the following utilities:*				
a. Power or natural gas?	☐	☑	☐	☐
b. Communications systems?	☐	☑	☐	☐
c. Local or regional water treatment or distribution facilities?	☐	☑	☐	☐
d. Sewer or septic tanks?	☐	☑	☐	☐
e. Storm water drainage?	☐	☑	☐	☐
f. Solid waste disposal?	☐	☐	☐	☑
g. Local or regional water supplies?	☐	☑	☐	☐

Discussion

a-e,g) Phase 1 and Phase 2

Phase 1 project-specific improvements at Sump 1/1A, Sump 2, and Pioneer Reservoir, may disrupt sewer and stormwater drainage systems in the service area. Additionally, the construction of the programmatic improvements and rehabilitation program of Phase 2 may effect the provision of utilities, including interruptions in the provisions of power, gas, communications, and domestic water in the service area. Most of the existing utilities are three to five feet below grade, whereas the CSS pipelines are between eight and ten feet below grade. Construction of pipelines occur at a rate of approximately half a block per day. The City is a member of the Underground Service Alert (U.S.A.) one-call program. Under this program and the City's Standard Specifications, the contractor is required to notify the U.S.A. 48 hours in advance of performing excavation work. The City has the responsibility for the timely removal, relocation or protection of any existing utility facilities located on the site of any construction project. In addition, cities and counties are obligated to relocate their facilities when necessary to accommodate governmental use of streets. To address potential conflicts the Joint Utilities Coordination Committee was formed. The Committee has developed procedures to assist cities, counties and utility companies in coordinating public improvement projects. These procedures are intended to avoid conflicts with scheduling, location and construction with other agency facilities and projects. Since any contractor hired by the City must implement these existing procedures, the potential impacts to utilities and service systems would be less-than-significant. The issue will not be further addressed in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
13. AESTHETICS. *Would the proposal:*				
a. Affect a scenic vista or scenic highway?	☐	☐	☐	☑
b. Have a demonstrable negative aesthetic effect?	☐	☐	☐	☑
c. Create light or glare?	☐	☐	☐	☑

Discussion

(a) Phase 1 and Phase 2

There are no designated scenic highways located within the CSS area that could be affected by the CSS Plan. Construction activities could create short-term visual nuisance impacts along City streets, which could alter existing views. These changes would be temporary and would not be considered a significant and adverse alteration. This issue will not be evaluated in the EIR.

(b) Phase 1

For Phase 1 components, it is known that construction would need to take place at Sump 1/1A located at the southeast corner of J and Front Streets, at Sump 2 located at the southwest corner of Riverside Boulevard and 10th Street, and at Pioneer Reservoir located off Front and V Streets. Although many of the modifications to these three facilities would be within existing structures, new structures are proposed at Pioneer Reservoir to house disinfection facilities including four tanks that would be placed within a concrete block spill containment area. Seismic upgrades, structural modifications, and other miscellaneous improvements are also proposed, such as mechanical bar screens (Sump 2) and roof modifications for installation of equipment hatches (Sump 1/1A). Modifications to any historically significant structure will need to be reviewed by the Design and Preservation Review Board. This issue will be addressed in the Cultural Resources section of the EIR as a potential impact to historical resources. Refer to the "Cultural Resources" discussion for these potential resources.

Phase 2

Under Phase 2, regional storage facilities are proposed. Sites under consideration include the UPRR yards and the UCD Medical Center site. The facility would be primarily underground, with above ground structures necessary to house operational equipment. Depending on the size, location and appearance, the structure could create visual impacts. It should also be noted that both the UPRR and UCD Medical Center sites are not within the City's design review districts. However, the City has indicated that new structures would be designed to be architecturally compatible with surrounding adjacent buildings. Landscaping would be provided to specifically screen any visually obtrusive equipment. The EIR will not address these issues further.

(c) Phase 1 and Phase 2

No night time construction is anticipated during the implementation of the Phase 1 and Phase 2. Although most components of the CSS Plan would be either housed in existing structures or underground, some new lighting may be added to structures for security purposes. However, the lighting would be required to meet City standards that ensure new facility lighting would be shielded and directed so as to not disturb adjacent uses. Therefore, the potential for light and glare is not considered a significant impact. This issue will not be evaluated in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
14. CULTURAL RESOURCES. *Would the proposal:*				
a. Disturb paleontological resources?	☐	☐	☐	☑
b. Disturb archaeological resources?	☐	☑	☐	☐
c. Affect historical resources?	☑	☐	☐	☐
d. Have the potential to cause a physical change which would affect unique ethnic cultural values?	☐	☑	☐	☐
e. Restrict existing religious or sacred uses within the potential impact area?	☐	☑	☐	☐

Discussion

(a) Phase 1 and Phase 2

Due to rapid siltation in most of the project area and the depth of recent sedimentary deposits, paleontological resources are highly unlikely. This issue will not be addressed in the EIR.

(b) Phase 1 and Phase 2

Due to the early development of Sacramento, most prehistoric evidence has been destroyed or covered by structures. There is a line of village sites along the north bank of the American River and the west bank of the Sacramento, but the city side of both rivers has very few recorded resources. This does not reflect the known pre-Sutter village distribution, rather, it reflects the results of historic development. Since the construction activity must comply with Appendix K of the CEQA Guidelines, which requires avoidance, protection and/or preservation of resources, potential disturbance of archeological resources would be mitigated to less-than-significant levels. This issue will not be further evaluated in the EIR.

(c) Phase 1 and Phase 2

There are numerous historical resources within the study area. Since most of these are standing structures (Sutter's Fort, Old Town, etc.), the CSS projects would not affect them. However, Sump 1/1A and Sump 2 are listed with the California Office of Historic Preservation. It appears that they may also be eligible for National Register listing, but no official determination has been made. The EIR will review Sump 1/1A and Sump 2 against the Federal Register of Criteria for their eligibility. Any modifications to the structures will need to be evaluated against applicable State, federal and City guidelines, including the City's Preservation of Historic Structures Ordinance and the *Preservation Board Listed Structures Plan for Non-Residential Buildings* guidelines. It is not expected that Pioneer Reservoir or the RWTP are historically significant, but this will be confirmed in the EIR.

(d,e) Phase 1 and Phase 2

It is unlikely that implementation of the CSS Plan would affect any ethnic, religious or ceremonial uses within the study area. Since the construction activity must comply with Appendix K of the CEQA Guidelines, which requires avoidance, protection and/or preservation of resources, potential disturbance of archeological resources would be mitigated to less-than-significant levels. This issue will not be further evaluated in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
15. RECREATION. *Would the proposal:*				
a. Increase the demand for neighborhood or regional parks or other recreational facilities?	☐	☐	☐	☑
b. Affect existing recreational opportunities?	☐	☑	☐	☐

Discussion

(a) Phase 1 and Phase 2

The proposed components of the CSS Plan would not generate demand or affect existing recreational opportunities, since the Plan is not generating an increase in population. This issue will not be addressed in the EIR.

(b) Phase 1 and Phase 2

None of the proposed improvements would utilize park space for storage or other uses. The construction of the pipelines could temporarily affect park facilities if located adjacent to such facilities. However, if construction activity requires disruption of park facilities, existing Standard Specifications require that the contractor repair or replace damaged property to its original condition. Temporary interference with park activities due to construction would be short-term and nuisance related. This would not be considered an adverse impact on recreational uses. These issues will not be further addressed in the EIR.

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
16. MANDATORY FINDINGS OF SIGNIFICANCE.				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☑	☐	☐	☐
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	☐	☑	☐	☐

Issues	Potentially Significant Impact	Less-Than-Significant Impact	Beneficial Impact	No Impact
c. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☑	☐	☐	☐
d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☑	☐	☐	☐

IV. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below potentially would be affected by this project.

- ☐ Land Use and Planning
- ☑ Population and Housing
- ☐ Geological Problems
- ☑ Water
- ☐ Air Quality
- ☐ Transportation/Circulation
- ☐ Biological Resources
- ☐ Energy and Mineral Resources
- ☐ Hazards
- ☑ Noise
- ☐ Public Services
- ☐ Utilities and Service Systems
- ☐ Aesthetics
- ☑ Cultural Resources
- ☐ Recreation
- ☐ None Identified

V. DETERMINATION

On the basis of this initial evaluation:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because the project-specific mitigation measures described in Section V have been added to the project. A NEGATIVE DECLARATION will be prepared.

☑ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Joe Broadhead
Signature

July 30, 1996
Date

Joe Broadhead, EIR Project Manager
Printed Name

ENDNOTES

1. Telephone conversation with Dan Peskowksi, City of Sacramento Arborist, July 2, 1996.

2. City of Sacramento Planning and Development Department, *Crystal Ice Office Building Draft Environmental Impact Report*, page 6.5-15, prepared by EIP Associates, February 1995.

3. Ibid., page 6.5-19.

APPENDIX A
NPDES PERMIT

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
3443 Routier Road, Suite A
Sacramento, CA 95827-3098
PHONE: (916) 255-3000
FAX: (916) 255-3015

To: David Melko
Combined System NPDES
Permit
From: Craig Chalmers 5/10/96

27 March 1996

CERTIFIED MAIL
Z 175 115 223

Mr. Gary Reents
City of Sacramento
Department of Utilities
5770 Freeport Blvd., Suite 100
Sacramento, CA 95822-2911

CERTIFIED MAIL –
Z 175 115 222

Ms. Cheryl Creson
Sacramento County Public Works Agency
Water Quality Division
9660 Ecology Lane
Sacramento, CA 95827

TRANSMITTAL OF ADOPTED/AMENDED WASTE DISCHARGE REQUIREMENTS, AND RESCISSION OF CEASE AND DESIST ORDERS

Enclosed is an official copy of Order No. 96-090 as amended by the California Regional Water Quality Control Board, Central Valley Region, at its last regular meeting. (March 22, 1996)

Also enclosed is a copy of Order No. 96-089, which rescinded Cease and Desist Order Nos. 90-198 and 92-217. The Board determined that the Long-Term Control Plan for improvements is an acceptable solution to the problem of outflows from the combined sewer system, and included the time schedule in the renewed NPDES permit.

Kenneth D. Landau

KENNETH D. LANDAU
Senior Engineer

PHL:pl

Enclosures- Adopted Orders
Standard Provisions (Dischargers only)
Proposition 65 Information (Dischargers only)

cc: See attached list

cc: U.S. Environmental Protection Agency, Region IX, San Francisco
U.S. Army Corp of Engineers, Sacramento District, Sacramento
U.S. Fish and Wildlife Service, Sacramento
National Marine Fisheries Service, Santa Rosa
Office of Drinking Water, Department of Health Services, Sacramento
Environmental Management Branch, Department of Health Services, Sacramento
Department of Water Resources, Central District, Sacramento
Department of Fish and Game, Region 2, Rancho Cordova
Office of the Chief Counsel, State Water Resources Control Board, Sacramento
Division of Water Quality, State Water Resources Control Board, Sacramento
Office of Historic Preservation, Sacramento
Sacramento County Department of Environmental Health , Sacramento
Sacramento County Planning Department, Sacramento
Mr. Walter Bishop, Contra Costa Water District, Concord
Mr. Mark Beuhler, Metropolitan Water District of Southern California, Los Angeles
Mr. Byron Buck, California Urban Water Agencies, Sacramento
Mr. Bill Jennings, Deltakeeper, Stockton

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 96-090

NPDES NO. CA0079111

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF SACRAMENTO
AND
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The City of Sacramento and the Sacramento Regional County Sanitation District (hereafter Discharger) submitted a Report of Waste Discharge, dated 2 June 1995, and applied for a permit renewal to discharge waste from the Combined Wastewater Treatment Plant under the National Pollutant Discharge Elimination System (NPDES). Supplemental Information dated July 1995, August 1995, 16 January 1996 and 29 February 1996 was also submitted.

2. The City of Sacramento owns and operates a combined sewer system (CSS) that serves 7510 acres in the downtown, East Sacramento, and Land Park areas. An additional 3690 acres with separate sewers contributes sanitary sewage to the combined system (see Attachment A, which is a part of this Order).

3. The CSS conveys domestic and industrial wastewater and storm runoff to Sump 2, where up to 60 mgd is pumped to the Sacramento Regional County Sanitation District's regional wastewater treatment plant (SRWTP) for secondary treatment prior to discharge to the Sacramento River. This discharge is designated as point 001 and is governed by Waste Discharge Requirements Order No. 94-006 (NPDES No. CA0077682). When flow to Sump 2 exceeds 60 mgd, the City operates its Combined Wastewater Treatment Plant (CWTP), where an additional 130 mgd of combined wastewater receives primary treatment with disinfection and discharge to the Sacramento River at points 002 and 003. The CWTP basins may also be used for storage of flows and diversion of flows back to the SRWTP. Flows to Sump 2 greater than 190 mgd are diverted to the 28 million gallon Pioneer Interceptor and Reservoir for storage. During major storms, Sump 1/1A also pumps up to 120 mgd to Pioneer Reservoir. The stored combined wastewater is diverted back to the SRWTP or the CWTP for treatment as treatment capacity allows, or is discharged to the Sacramento River if storm flows exceed total treatment and storage capacity. The discharge from Pioneer Reservoir occurs at point 006 and receives partial settleable solids and floatables removal, in a flow-through process, without disinfection. During extreme high flow conditions, discharges of untreated combined wastewater may occur at Sump 2 bypass points 004 and 005 and at Sump 1 bypass point 007. The CWTP and sumps are

currently being managed under an interim operations plan dated 15 November 1994. Collected screenings are hauled to a landfill, and sludges and other solids removed from liquid wastes are pumped through the collection system to the RWTP. Discharges 002 through 007 are governed by these requirements (See Attachments B and C, which are part of this Order).

4. The CSS has inadequate hydraulic capacity and is in need of rehabilitation. Since many of the pipelines are too small and have too flat a slope to accommodate flows during moderate and intense storms, outflows of combined sewage and stormwater from the CSS have occurred over the years out of plumbing fixtures located in basements and low-lying drop inlets and maintenance holes onto the streets. In addition, localized flooding of stormwater occurs in several areas because runoff is greater than the CSS capacity. Much of the system is old and needs rehabilitation or replacement.

5. On 6 December 1985 the Board adopted Order No. 85-342, prescribing waste discharge requirements for the Combined Wastewater Collection and Treatment System. Discharge requirement E.1. stated, "Neither the discharge nor its treatment shall create a nuisance or pollution as defined in Section 13050 of the California Water Code."

6. The Board modified Order No. 85-342 on 22 June 1990 by adoption of Order No. 90-197 to specifically prohibit overflows of the CSS by adding requirement A.4, which stated, "The bypass of, or overflow from, the combined wastewater collection system is prohibited. The exceptions to this Discharge Prohibition are the discharges at Discharge points 004, 005, and 007 to the Sacramento River which are restricted by Discharge Prohibition A.3."

7. On 22 June 1990 the Board adopted Cease and Desist Order No. 90-198 requiring the City of Sacramento to cease and desist from discharging wastes in violation of Discharge Prohibition A.4. These violations were due to outflows of combined wastewater resulting in a possible public health threat through potential human contact with the wastewater. Cease and Desist Order No. 90-198 was amended twice, by adoption of Order No. 91-199 on 6 September 1991, and Order No. 92-217 on 23 October 1992. The Cease and Desist Order and its amendments required the City, in part, to prevent outflows by undertaking operational improvements on the Combined Wastewater Collection and Treatment System, submitting technical reports and time schedules for improvements to the system, conducting additional monitoring to better quantify the benefits of separation of the system, and performing a risk assessment on the known and potential health impacts from the outflow of combined sewage, as feasible. The City has complied with the intent of Order No. 92-217.

8. The Board renewed the NPDES permit on 2 November 1990 by adoption of Order No. 90-315. The renewed permit maintains the discharge prohibition, specifications, and provisions found in Order No. 90-197, keeping Cease and Desist Order No. 90-198 in effect.

9. The "*Retrospective Study Report: Public Health Risk Assessment for Outflows from the Combined Sewer System*", submitted by the City, was unable to provide a conclusive answer to whether or not outflows from the CSS constitute a human health risk, but additional studies would not likely be cost effective to provide a better answer. There have been no documented outbreaks of waterborne diseases associated with CSS outflows. The Department of Health Services concurs that additional health effects studies are unlikely to statistically define the potential health effects resulting from CSS outflows.

10. The City has determined that a project to completely separate the sanitary and storm sewers and conduct rehabilitation of the sewers would cost approximately $381 million, in 1992 dollars. This alternative would be extremely disruptive due to extensive in-street construction, would not result in significant decreases in outflows until the project is nearly complete in 20 years, and would only minimally decrease flooding. The City is instead recommending a Long-Term Control Plan which includes system improvements to reduce flooding and outflows in the combined sewer system area resulting from a 1-year storm event (i.e. a storm with a 100% probability of occurring every year) to a 10-year (10% probability) storm event, as well as preventing flood waters from reaching the ground floor of buildings and houses in a 100-year (1% probability) storm event. The long-term program to achieve this goal is estimated to cost approximately $414 million in 1995 dollars, and will take many years to complete.
(441)

The City has committed to spend $10 million per year on the long-term program to improve and rehabilitate the combined sewer system. A portion of this amount will be used to finance long-term debt so that major projects can be completed early in the program. The city plans to construct $84.5 million in improvements and rehabilitation in the first five years of the program. Major projects scheduled for completion in the five year term of the permit include increasing the pumping capacity of Sumps 1/1A and 2, rehabilitating the two sumps, and converting Pioneer Reservoir into a primary treatment facility. In addition, local improvement projects will be constructed and old sewers will be rehabilitated or replaced.

The City has set the following interim goals to be met as progress is made towards the final goal: (a) obtaining protection from a 5-year storm in the six areas of worst flooding, (b) obtaining protection from a 5-year storm throughout the combined sewer system area, (c) obtaining protection from a 10-year storm in the six areas of worst flooding, and then (d) obtaining the goal of protection from a 10-year storm event throughout the combined sewer system.

All the improvements will be designed to ultimately provide 10-year outflow and flood protection when the entire program is finally completed, however the level of protection provided by a specific improvement project will vary.

11. The Board concurs with Finding Nos. 9 and 10.

COMBINED WASTEWATER SYSTEM OVERFLOW (CSO) STRATEGIES

12. On 8 September 1989 the Federal Register published the National (EPA) CSO Strategy. The strategy's main objectives are to bring all CSO discharges into compliance with technology-based requirements of the Clean Water Act and applicable water quality objectives, minimize water quality, aquatic biota, and human health impacts from wet weather overflows, and to ensure that, if CSO discharges occur, they are the result of wet weather.

13. The National CSO Strategy required the development of a state-wide strategy by 15 January 1990. In response, the State Water Resources Control Board adopted Resolution No. 90-9, establishing a State Combined System Overflow Control Strategy.

14. On 19 April 1994 the Federal Register published the CSO Control Policy. The Policy elaborates on the National CSO Strategy, and establishes a consistent national approach for CSO control. The key objectives of the Policy are that: (1) Dischargers should immediately implement the Nine Minimum Controls (NMC) which are technology-based actions or measures that can reduce CSOs and their effects on receiving water quality (no later than 1 January 1997); (2) Dischargers should give priority attention to environmentally sensitive areas; (3) Dischargers should develop Long-Term Control Plans (LTCPs) for controlling CSOs by either demonstrating the controls contribute to achievement of water quality standards or provide minimum treatment that is presumed to meet water quality standards; (4) States should review and revise, as appropriate, State water quality standards during the CSO long-term planning process; and (5) Financial capability should be taken into account when developing CSO control plans.

15. These requirements implement the National and State CSO Strategies and Policy.

OTHER

16. The U.S. Environmental Protection Agency (EPA) and the Board have classified this discharge as a major discharge.

17. The Board adopted a Water Quality Control Plan, Third Edition, for the Sacramento River Basin and the San Joaquin River Basin (hereafter Basin Plan) which contains water quality objectives for waters of the Basin. These requirements implement the Basin Plan.

18. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. The Discharger collected water quality samples of the effluent and receiving water for 19 storm events from 1991 through 1995. The constituents evaluated included those which were regulated by the Inland Surface Waters Plan. All constituents appear significantly below potentially toxic concentrations for those chemicals, taking into account dilution and receiving water concentrations, with the exception of mercury. The Sacramento River frequently exceeds the 30-day average EPA Criteria of 0.012 μg/l to protect human health (due to bioaccumulation of mercury in fish tissue), and effluent from the CWTP also was found in excess of the criteria. The CWTP effluent data may not be indicative of the actual concentration of mercury, due to detection levels often above the criteria. Therefore, this Order contains provisions that :

    a. require the Discharger to use 'clean technique' for sample collection, handling, and analysis, in order to provide accurate information as to whether the levels of mercury in the discharge causes or contributes to an in-stream excursion above a water quality objective;

    b. if the discharge causes or contributes to an in-stream toxicity caused by mercury, requires the Discharger to submit information to calculate effluent limitations for those constituents; and

    c. allows the Board to reopen this Order and include effluent limitations for mercury.

19. The beneficial uses of the Sacramento River downstream of the discharge are municipal and domestic, industrial, and agricultural supply; water contact and noncontact recreation; esthetic enjoyment; navigation; ground water recharge, fresh water replenishment; and preservation and enhancement of fish, wildlife and other aquatic resources.

20. The beneficial uses of the underlying ground water are municipal and domestic, industrial, and agricultural supply.

21. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. The impact on existing water quality will be insignificant.

22. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 208(b), 301, 302, 304, and 307 of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

23. The discharge is presently governed by Waste Discharge Requirements Order No. 90-315, adopted by the Board on 2 November 1990.

24. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code.

25. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

26. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

27. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided EPA has no objections.

IT IS HEREBY ORDERED that Order No. 90-315 is rescinded and the City of Sacramento and the Sacramento Regional County Sanitation District, Combined Wastewater Collection and Treatment System, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. The discharge to the Sacramento River is prohibited at the following discharge points unless the specified conditions are met, or authorization has been granted under Provision E.7:

   a. CWTP Discharge Points 002 and 003. No discharge is allowed unless a flow of 60 mgd is being sent to the Sacramento County Regional Wastewater Treatment Plant.

   b. Sump 2 Bypass Discharge Points 004, 005, and Sump 1 Bypass Discharge Point 007. No discharge is allowed unless a flow of 130 mgd is being sent to the CWTP. After upgrade of Pioneer Reservoir, according to the time schedule in Provision E.3., no discharge is allowed unless a flow in conformance with the current Operations Plan is also being sent to the Pioneer Reservoir Treatment Facility.

c. Pioneer Reservoir Discharge Point 006. Prior to completion of upgrades, according to the time schedule in Provision E.3., no discharge is allowed unless a flow of 130 mgd is being sent to the CWTP. After completion of upgrades, no discharge is allowed unless a flow of 60 mgd is being sent to the Sacramento County Regional Wastewater Treatment Plant, and a flow in conformance with the current Operations Plan is being sent to the CWTP.

2. Other than as a result of wet weather, or as approved under Provision E.7., discharges from the CWTP, Pioneer Reservoir, or any sumps to surface waters or surface water drainage courses is prohibited.

3. Bypass of, or overflow from, the wastewater collection system to surface waters is prohibited, except as allowed by Standard Provision A.13 [See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)]. The exception to this Discharge Prohibition is the discharges at Discharge points 004, 005, 006, and 007 to the Sacramento River which are restricted by Discharge Prohibitions A.1. and A.2.

B. Effluent Limitations:

1. The discharge of effluent from the CWTP (Discharge Points 002 and 003) in excess of the following limits is prohibited:

Constituents	Units	Storm Year[1] Average	Storm Maximum	Storm Year[1] Median
Total Suspended Solids	mg/l	100[2]		
Settleable Solids	ml/l		1.0	
Chlorine Residual	mg/l		0.1	
Fecal Coliform Organisms	MPN/100 ml			200[3,4]

[1] 1 October through 30 September
[2] In addition, two consecutive samples shall not exceed 150 mg/l.
[3] In addition, no three consecutive samples shall exceed 1000 MPN/100 ml.
[4] The Discharger shall continuously operate the chlorination equipment when discharging to the Sacramento River.

2. The discharge of effluent from the Pioneer Reservoir Treatment Facility (Discharge Point 006) following upgrade in accordance with the time schedule in Provision E.3., in excess of the following limits is prohibited:

Constituents	Units	Storm Year[1] Average	Storm Maximum	Storm Year[1] Median
Chlorine Residual	mg/l		0.1	
Fecal Coliform Organisms	MPN/100 ml			200[2,3]

[1] 1 October through 30 September
[2] In addition, no three consecutive samples shall exceed 1000 MPN/100 ml.
[3] The Discharger shall continuously operate the chlorination equipment when discharging to the Sacramento River.

3. The Discharger shall eliminate or capture for treatment, or storage and subsequent treatment, at least 85% by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis. Sewage captured for treatment shall receive treatment, at a minimum to include primary clarification or equivalent, and disinfection.

4. The discharge shall not have a pH less than 6.5 nor greater than 8.5.

5. The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.

C. Sludge Disposal:

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner that is consistent with Chapter 15, Division 3, Title 23, of the California Code of Regulations and approved by the Executive Officer.

2. Any proposed change in sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and EPA Regional Administrator at least [illegible] days in advance of the change.

D. Receiving Water Limitations:

Receiving Water Limitations are site specific interpretations of water quality objectives from applicable water quality control plans. As such, they are a required part of this permit. Compliance with water quality objectives is to be determined after the discharge has mixed with the receiving water, at a representative location downstream of the discharge. However, a receiving water condition not in conformance with the limitation is not necessarily a violation of this Order. If a water quality objective is exceeded in the receiving water and the cause of the exceedance is unclear, the Board may require an investigation to determine cause and culpability prior to asserting a violation has occurred.

The discharge shall not cause the following in the receiving water:

1. Concentrations of dissolved oxygen to fall below 5.0 mg/l.

2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.

3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.

4. Chlorine to be detected in the receiving water in concentrations equal to or greater than 0.01 mg/l.

5. Aesthetically undesirable discoloration.

6. Fungi, slimes, or other objectionable growths.

7. Turbidity to increase more than 10 percent over background levels.

8. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.

9. Deposition of material that causes nuisance or adversely affects beneficial uses.

10. The normal ambient temperature to be increased more than 5°F.

11. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

12. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.

13. Violations of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.

14. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

E. Provisions:

1. Neither the discharge nor its treatment shall create a nuisance or pollution as defined in Section 13050 of the California Water Code.

2. The Discharger shall submit, **within 90 days of adoption of this Order**, an evaluation of the City's compliance with the nine minimum CSO controls outlined in **Attachment D**. If the City is not in compliance with all of the controls, a workplan and time schedule shall be submitted by which the City will attain compliance. This permit may be reopened and a compliance time schedule added to require compliance. The City shall implement necessary actions to achieve and maintain compliance with the nine minimum controls.

3. The Discharger shall implement its Long-Term Control Plan by completing work on the CSS in accordance with the following time schedule:

Task	**Compliance Date**	**Report Due**
Select design consultant for Sump 1/1A, Pioneer, and Sump 2 projects	31 August 1996	15 September 1996
Complete 42nd Street below-ground storage structure and pump station	31 December 1996	15 January 1997
Complete EIR process for Sump 1/1A, Pioneer, and Sump 2 projects	31 January 1997	15 February 1997

Task	Compliance Date	Report Due
Bid and award Sump 1/1A and Pioneer projects	30 April 1997	15 May 1997
Complete Sump 1/1A and Pioneer projects	31 March 1998	15 April 1998
Bid and award Phase I of Sump 2 project	30 April 1998	15 May 1998
Complete Phase I of Sump 2 project Bid and award Phase II of Sump 2 project	30 April 1999	15 May 1999
Complete Phase II of Sump 2 project	30 April 2000	15 May 2000

The Discharger shall submit to the Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Board by letter when it returns to compliance with the time schedule.

✓4. The Discharger shall maintain an approved Operations Plan for the CSS which is designed to maximize the removal of pollutants during and after each precipitation event using all available facilities within the collection and treatment system, with the goal of achieving the highest treatment possible and minimizing CSOs and outflows. A revised Operations Plan is due, by **30 June 1996**, which outlines, in part, how the Pioneer Reservoir will be operated after modifications and upgrades to the CSS are completed. The revised Operations Plan for the CSS shall also be provided, by **30 June 1996**, to interested parties who notify the Discharger. The Plan must also outline how pollutant loading to the receiving water will not be increased when pumping capacities at the sumps are increased. The Plan shall become an enforceable part of this permit upon approval by the Executive Officer. The Discharger shall operate the CSS in conformance with the approved Operations Plan and shall report any variation from the plan in the next monthly monitoring report. Further modifications to the Operations Plan must be submitted to interested parties and the Executive Officer for review, and must be approved by the Executive Officer before they may become effective.

5. **By 30 June of each year**, the Discharger shall submit a list of the combined sewer improvement and rehabilitation projects which are scheduled for completion in the next 12 months. The cost estimate for each project shall also be submitted.

6. There are indications that the discharge may contain a constituent (mercury) that has a reasonable potential to cause or contribute to toxicity in the receiving water. The Discharger shall submit, **within 60 days of adoption of this Order**, plans and a time schedule to conduct a study to determine, using 'clean technique', if concentrations of mercury in the effluent from the CWTP has reasonable potential to cause or contribute to toxicity in the receiving water. Once approved by the Executive Officer, the Discharger shall conduct the study in accordance with the approved time schedule.

   If, after review of the study results, it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order may be reopened and effluent limitations or appropriate requirements (e.g. to participate in the development of a Total Maximum Daily Load), along with time schedules may be added for the subject constituent.

7. The Discharger must obtain prior written approval from the Executive Officer to discharge from the CWTP, Pioneer Reservoir, or the CSS for maintenance or equipment testing, when the discharges would not be required by wet weather conditions.

8. In the event of wet weather outflows from the Discharger's combined collection and conveyance system, the Discharger shall notify the Board within 24 hours of knowledge of such discharges, and shall confirm this notification in writing within 5 days. At a minimum, the written confirmation shall state the time, location, an estimate of the volume of the outflow, measures taken to inform persons who might come into contact with outflowed sewage, and measures taken to minimize reoccurrence.

9. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)".

10. The Discharger shall comply with Monitoring and Reporting Program No. 96-090, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer

    When requested by EPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

✓ 11. This Order expires on 1 March 2001 and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

12. This permit may be modified or revoked and reissued, as provided pursuant to 40 CFR 122.62 and 124.5, for the following reasons:

    a. To include new or revised conditions developed to comply with any State or Federal law or regulation that addresses CSOs that is adopted or promulgated subsequent to the effective date of this permit;

    b. To include new or revised conditions if new information, not available at the time of permit issuance, indicates that CSO controls imposed under the permit have failed to ensure the attainment of State water quality standards;

    c. To include new or revised conditions based on new information resulting from implementation of the long-term plan; or

    d. For any reason specified in 40 CFR 122.62.

13. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from, the State Water Resources Control Board (Division of Water Rights).

14. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

    To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing ~~is~~ a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 22 March 1996.

William H. Crooks

WILLIAM H. CROOKS, Executive Officer

PHL
Amended 3/22/96

INFORMATION SHEET

CITY OF SACRAMENTO AND
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM
SACRAMENTO COUNTY

The City of Sacramento owns and operates a combined sewer system (CSS) that serves 7000 acres in the downtown, East Sacramento and Land Park areas. An additional 2200 acres with separate sewers contributes sanitary sewage to the combined system. Sump 2 of the CSS pumps up to 60 mgd to the Sacramento Regional County Sanitation District's regional wastewater treatment plant (RWTP) for secondary treatment prior to discharge to the Sacramento River. This discharge is governed by Waste Discharge Requirements Order No. 94-006 (NPDES No. CA0077682). When flow to Sump 2 exceeds 60 mgd, the City operates its Combined Wastewater Treatment Plant (CWTP), where an additional 130 mgd of combined wastewater receives primary treatment with disinfection and discharge to the Sacramento River. The CWTP basins may also be used for storage of flows and diversion of flows back to the SRWTP. Flows to Sump 2 greater than 190 mgd are diverted to the 28 million gallon Pioneer Interceptor and Reservoir for storage. During major storms Sump 1/1A also pumps up to 120 mgd to Pioneer Reservoir. The stored combined wastewater is diverted back to the CWTP for treatment as treatment capacity allows, or is discharged to the Sacramento River after partial solids removal, if storm flows exceed total treatment and storage capacity. During extreme high flow conditions, discharges of untreated combined wastewater may occur at Sumps 1 and 2 bypass points. Collected screenings are hauled to a landfill, and sludges and other solids removed from liquid wastes are pumped through the collection system to the RWTP. Discharges from the CWTP, Pioneer Reservoir, and Sumps 1 and 2 bypass points are governed by these requirements.

The CSS has inadequate hydraulic capacity and is in need of rehabilitation. Because many of the pipelines are too small and have too flat a slope to accommodate flows during moderate and intense storms, numerous outflows of combined sewage and stormwater from the CSS have occurred over the last several years, predominantly out of plumbing fixtures located in basements and low-lying drop inlets and maintenance holes onto the streets. In addition, localized flooding of stormwater occurs in several areas because runoff is greater than the CSS capacity. Much of the system is old and needs rehabilitation or replacement.

On 22 June 1990 the Board adopted Cease and Desist Order No. 90-198 due to the outflows of combined wastewater resulting in a possible public health threat through potential human contact with the wastewater. Cease and Desist Order No. 90-198 was amended twice, by adoption of Order No. 91-199 on 6 September 1991, and Order No. 92-217 on 23 October 1992. The Cease and Desist Order and its amendments required the City, in part, to prevent outflows by undertaking operational improvements on the Combined Wastewater Collection and Treatment System, submitting technical reports and time schedules for improvements to the system, conducting additional monitoring to better quantify the benefits of separation of the system, and performing a risk assessment on the known and potential health impacts from the outflow of combined sewage, as feasible. The City has complied with the intent of Order No. 92-217.

The Board renewed the NPDES permit on 2 November 1990 by adoption of Order No. 90-315. The renewed permit maintains the discharge prohibition, specifications, and provisions found in Order No. 90-197, keeping Order No. 90-198 in effect.

The "*Retrospective Study Report: Public Health Risk Assessment for Outflows from the Combined Sewer System*", submitted by the City, was unable to provide a conclusive answer to whether or not outflows from the CSS constitute a human health risk, and additional studies were shown to not be cost effective to provide a better answer. There have been no documented outbreaks of waterborne diseases associated with CSS outflows. The City showed that a project to completely separate the sanitary and storm sewers would cost $381 million dollars, would be extremely disruptive due to extensive in-street construction, and would not result in significant decreases in outflows or flooding until the project is nearly complete in 20 years. The City is instead recommending a Long-Term Control Plan which includes system improvements to reduce flooding and outflows in the combined sewer system area resulting from a 1-year storm event (i.e. a storm with a 100% probability of occurring every year) to a 10-year (10% probability) storm event, as well as preventing flood waters from reaching the ground floor of buildings and houses in a 100-year (1% probability) storm event. The long-term program to achieve this goal is estimated to cost approximately $414 million in 1995 dollars, and will take many years to complete.

The City has committed to spend $10 million per year on the long-term program to improve and rehabilitate the combined sewer system. A portion of this amount will be used to finance long-term debt so that major projects can be completed early in the program. The City plans to construct $84.5 million in improvements and rehabilitation in the first five years of the program. Major projects scheduled for completion in the five year term of the permit include increasing the pumping capacity of Sumps 1/1A and 2, rehabilitating the two sumps, and converting Pioneer Reservoir into a primary treatment facility. In addition, local improvement projects (such as the 42nd Street drainage area storage structure) will be constructed, and old sewers will be rehabilitated or replaced.

The City has set the following interim goals to be met as progress is made towards the final goal: (a) obtaining protection from a 5-year storm in the six areas of worst flooding, (b) obtaining protection from a 5-year storm throughout the combined sewer system area, (c) obtaining protection from a 10-year storm in the six areas of worst flooding, and then (d) obtaining the goal of protection from a 10-year storm event throughout the combined sewer system.

All the improvements will be designed to ultimately provide 10-year outflow and flood protection when the entire program is finally completed, however the level of protection provided by a specific improvement project will vary. Increased pumping capacity at Sumps 1/1A and 2 are the most cost effective projects to reduce outflows and flooding throughout the combined sewer system area and, therefore, will be constructed first. The increased capacity at Sumps 1/1A and 2 reduce flooding and outflows by 611,000 cubic feet, or 10% during a 10-year storm. The 42nd Street project will provide protection from approximately a 5-year (20% probability) storm event until downstream improvements are completed, and up to approximately a 10-year storm event afterward.

A time schedule for implementation of the first five year plan is included in the NPDES permit. NPDES regulations normally prevent inclusion of time schedules within the permit for correction of existing violations. This time schedule, however, deals with elimination of outflows from the CSS within the urbanized area. These outflows do not flow to surface waters, but pond on the ground surface until hydraulic capacity is available in the CSS and the ponded water can drain back into the CSS for discharge through permitted discharge points. As the corrective actions required by the time schedule are not related to the discharges to surface waters, inclusion of the time schedules in the NPDES permit does not conflict with U.S. Environmental Protection Agency regulations.

On 8 September 1989 the Federal Register published the National (EPA) CSO Strategy. The strategy's main objectives are to bring all CSO discharges into compliance with technology-based requirements of the Clean Water Act and applicable water quality objectives, minimize water quality, aquatic biota, and human health impacts from wet weather overflows, and to ensure that, if CSO discharges occur, they are the result of wet weather. In response to the National CSO Strategy, the State Water Resources Control Board adopted Resolution 90-9 establishing a State Combined System Overflow Control Strategy. Finally, on 19 April 1994 the Federal Register published the CSO Control Policy. The Policy elaborates on the National CSO Strategy, and establishes a consistent national approach for CSO control. The key objectives of the Policy are that: (1) Dischargers should immediately implement the Nine Minimum Controls (NMC) which are technology-based actions or measures that can reduce CSOs and their effects on receiving water quality (no later than 1 January 1997); (2) Dischargers should give priority attention to environmentally sensitive areas; (3) Dischargers should develop Long-Term Control Plans (LTCPs) for controlling CSOs by either demonstrating the controls contribute to achievement of water quality standards or provide minimum treatment that is presumed to meet water quality standards; (4) States should review and revise, as appropriate, State water quality standards during the CSO long-term planning process; and (5) Financial capability should be taken into account when developing CSO control plans. These requirements implement the National and State CSO Strategies and Policy.

Effluent limitations for the CWTP are the same as the previous permit, except for coliform organisms. The previous effluent limit was for total coliform organisms to meet a storm year median of 1000 MPN/100 ml, and no three consecutive samples were to exceed 7000 MPN/100 ml. This permit requires that fecal coliform organisms meet a storm year median of 200 MPN/100 ml, and no three consecutive samples exceed 1000 MPN/100 ml. The receiving water limitations in the Basin Plan for body contact recreation (REC1) in the Sacramento River are based on fecal coliform concentrations. Changing the discharge standards from total to fecal coliform will make the discharge standards compatible with the receiving water standards.

Pioneer Reservoir will be upgraded over the term of this permit, and therefore effluent limitations would normally be prescribed for the Pioneer plant upon completion of the upgrade. However, at this time the design flow has not been determined, and the ability of Pioneer Reservoir to operate at the same removal efficiencies as the CWTP has not been proven. It is possible that Pioneer Reservoir will have a design flow established for primary treatment, equivalent to the CWTP, including disinfection, and will also have a higher design flow established for partial solids removal and disinfection for the purpose of minimizing CSO events. An Operations Plan is required to be developed which will outline how the CSS, RWTP, CWTP, and the Pioneer Reservoir Treatment Facility will be operated following upgrade of the facilities. For this reason, only effluent limitations for fecal coliform organisms and chlorine residual have been included for the Pioneer Reservoir Treatment Plant.

Based on results of water quality samples collected by the Discharger, there are indications that the discharge may contain a constituent (mercury) that has a reasonable potential to cause or contribute to toxicity in the receiving water. The Sacramento River frequently exceeds the 30-day average EPA Criteria of 0.012 µg/l to protect human health (due to bioaccumulation of mercury in fish tissue), and effluent from the CWTP also was found in excess of the criteria. The CWTP effluent data may not be indicative of the actual concentration of mercury, due to detection levels often above the criteria. Therefore, this Order contains provisions that (1) require the Discharger to use 'clean technique' for sample collection, handling, and analysis, in order to provide accurate information as to whether the levels of mercury in the discharge causes or contributes to an in-stream excursion above a water quality objective; (2) if the discharge causes or contributes to an in-stream toxicity caused by mercury, requires the Discharger to submit information to calculate effluent limitations for those constituents; and (3) allows the Board to reopen this Order and include effluent limitations for mercury.

Receiving water monitoring has been modified for this permit term. Monitoring stations have been reduced from six to four locations, to better coincide with the locations sampled in previous water quality studies. The locations will provide for upstream and downstream samples at each outfall location. Monitoring of the discharge from Pioneer Reservoir is changed from the previous permit, to require analyses for suspended solids, settleable solids, total coliform organisms an[illegible] hlorine residual once upgrade to a primary treatment facility is completed.

Effluent toxicity monitoring has not been included in this permit. Results of testing c[illegible] lucted over the last five years has shown the discharges have had a negligible impact on the Sacra[illegible] to River, in part due to the significant dilution available during discharge events. However, certain [illegible]nstituents of concern which have been shown to cause toxicity in stormwater discharges in urban areas have been included in the monitoring program. These include dissolved copper, lead and zinc (as [illegible]ell as mercury which will be part of a separate study), and the pesticides diazinon, chlorpyriphos, and diuron.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 96-090

NPDES NO. CA0079111

FOR
CITY OF SACRAMENTO
AND
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM
SACRAMENTO COUNTY

SUMP 2 INFLUENT MONITORING

Samples shall be collected at approximately the same time as effluent samples and should be representative of the influent for the period sampled. If no discharge from the Combined Wastewater Treatment Plant and/or Pioneer Reservoir is occurring, Sump 2 influent monitoring is not required. The following shall constitute the influent monitoring program:

Constituent	Units	Type of Sample	Sampling Frequency
Flow	mgd	Daily Mean and Range	Continuous
Suspended Matter	mg/l	Flow-weighted Composite over event	Each storm
Settleable Matter	ml/l	Grab	Each Storm

CWTP EFFLUENT MONITORING

CWTP effluent samples shall be collected downstream from the last connection through which wastes can be admitted into outfalls 002 and 003. Samples collected from the effluent structure will be considered adequately composited. The following shall constitute the effluent monitoring program:

MONITORING AND REPORTING PROGRAM
CITY OF SACRAMENTO AND
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM
SACRAMENTO COUNTY

Constituents	Units	Type of Sample	Sampling Frequency
Suspended Solids	mg/l	Flow-Weighted Composite over event	Each Event
Settleable Solids	ml/l	Grab	Each Event[1]
pH	pH Units	Grab	Each Event[1]
Fecal Coliform Organisms	MPN/100 ml	Grab	Each Event[1]
Chlorine Residual	mg/l	Grab	Each Event[1]
Flow	mgd	Meter[2]	Continuous
Temperature	°F	Grab	Each Event[1]
Dissolved Copper	µg/l	Grab	4 Events per year
Dissolved Lead	µg/l	Grab	4 Events per year
Dissolved Zinc	µg/l	Grab	4 Events per year
Diazinon[3]	µg/l	Grab	4 Events per year
Chlorpyriphos[3]	µg/l	Grab	4 Events per year
Diuron[3]	µg/l	Grab	4 Events per year

1 At least one grab sample during the first four hours of an event. If the duration of the discharge event is greater than 24 hours, daily samples shall be collected. An event is defined as a period of continuous operation of the Combined Wastewater Treatment Plant with subsequent discharge to the Sacramento River.

2 In addition, the number, duration, and total flow for each event shall be recorded.

3 Analytical method shall have a detection level no greater than 100 ng/l

PIONEER RESERVOIR EFFLUENT MONITORING

Pioneer effluent samples shall be collected downstream from the last connection through which wastes can be admitted into outfall 006. Samples collected from the effluent structure will be considered adequately composited. The following shall constitute the effluent monitoring program:

Constituents	Units	Type of Sample	Sampling Frequency
Flow	mgd	Meter[1]	Continuous
pH	pH Units	Grab	Each Event[2]
Dissolved Oxygen	mg/l	Grab	Each Event[2]
Temperature	°F/°C	Grab	Each Event[2]
Suspended Solids	mg/l	Flow-Weighted Composite	Each Event[2,3]
Settleable Solids	ml/l	Grab	Each Event[2,3]
Fecal Coliform Organisms	MPN/100 ml	Grab	Each Event[2,3]
Chlorine Residual	mg/l	Grab	Each Event[2,3]
Dissolved Copper	µg/l	Grab	4 Events per year
Dissolved Lead	µg/l	Grab	4 Events per year
Dissolved Zinc	µg/l	Grab	4 Events per year
Diazinon[4]	µg/l	Grab	4 Events per year
Chlorpyriphos[4]	µg/l	Grab	4 Events per year
Diuron[4]	µg/l	Grab	4 Events per year

[1] In addition, the number, duration, and total flow for each event shall be recorded.

[2] At least one grab sample during the first four hours of an event. If the duration of the discharge event is greater than 24 hours, daily samples shall be collected. An event is defined as a period of continuous discharge from the Pioneer Reservoir to the Sacramento River.

[3] Monitoring to be implemented after completing upgrade to Pioneer Reservoir to a primary treatment facility with disinfection.

[4] Analytical method shall have a detection level no greater than 100 ng/l

SACRAMENTO RIVER MONITORING

When the CWTP and/or the Pioneer Reservoir systems are discharging then the Sacramento River flow (in MGD, daily mean, and range) shall be recorded. In addition, grab samples of the receiving water shall be taken from the following:

Station	Description
R-1	Upstream of CSO outfalls, at the Delta King
R-2	Downstream of outfalls 006 and 007, at Miller Park
R-3	Downstream of outfalls 004 and 005, at Captains Table
R-4	Downstream of outfalls 002 and 003, at Wooden Stairs

Precise locations shall be determined by agreement between Regional Board and Sacramento City staffs.

Samples shall be collected at stations R-1 and R-2 when discharge is occurring at outfalls 006 and/or 007 for the Pioneer Reservoir discharge or Sump 1 bypass, stations R-2 and R-3 when discharge is occurring at outfalls 004 and/or 005 for the Sump 2 bypass, and stations R-3 and R-4 when discharge is occurring at 002 and/or 003 for the Combined Wastewater Treatment Plant discharge, according to the following:

Constituent	Units	Type of Sample	Sampling Frequency
pH	pH units	Grab	Each Event[1]
Temperature	°F/°C	Grab	Each Event[1]
Dissolved Oxygen	mg/l	Grab	Each Event[1]
Turbidity	NTUs	Grab	Each Event[1]

1 Within first four hours of beginning of storm causing discharge at the above discharge points (outfalls), daily if the discharge event is greater than 24 hours.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-4. Attention shall be given to the presence or absence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
d. Aquatic life
e. Visible films, sheens or coatings
f. Fungi, slimes, or objectionable growths
g. Potential nuisance conditions

Notes on receiving water conditions shall be summarized in the monitoring report.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **20th day of the month** following sample collection. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **30 January of each year**, the Discharger shall submit a written report to the Executive Officer containing the following:

a. The names, certificate grades, and general responsibilities of all persons employed at the WWTP (Standard Provision A.5).

b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

c. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).

d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

The Discharger may also be requested to submit an annual report to the Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by: [signature]
WILLIAM H. CROOKS, Executive Office

22 March 1996

PHL

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 96-089

RESCISSION OF CEASE AND DESIST ORDER NOS. 90-198 AND 92-217
FOR
THE CITY OF SACRAMENTO
COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The Board adopted Cease and Desist Order No. 90-198 in June 1990 against the City of Sacramento, Combined Wastewater Collection and Treatment System, (hereafter Discharger), for violation of Waste Discharge Requirements Order No. 90-197 due to outflows from the combined wastewater collection system resulting in a public health threat through potential human contact with the wastewater. The Board amended the Order in 1991 with Order No. 91-199, and again amended the Order on 23 October 1992 with Order No. 92-217. The Cease and Desist Order and its amendments required the City, in part, to prevent outflows by undertaking operational improvements on the Combined Wastewater Collection and Treatment System, submitting technical reports and time schedules for improvements to the system, conducting additional monitoring to better quantify the benefits of separation of the system, and performing a risk assessment on the known and potential health impacts from the outflow of combined sewage, as feasible. Order Nos. 90-198 and 92-217 remain in effect.

2. The Board has approved the City's proposed Long-Term Control Plan which includes system improvements to reduce flooding and outflows. Recommended projects include increasing the pumping capacities at Sumps 1 and 2, constructing below-ground storage facilities in areas prone to flooding, and converting the Pioneer Reservoir into a primary treatment plant with disinfection. The plan for the first five years will reduce flooding and outflows from approximately a 1-year event to a 5-year event. A time schedule to complete the improvements has been included in an NPDES permit.

3. The Discharger has complied with the Cease and Desist Orders.

4. The issuance of this Order is exempt from the Provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et. seq.), in accordance with Section 15321(a)(2), Title 14, California Code of Regulations.

5. The Board, on 22 March 1996, in Sacramento, California, held a public hearing and considered all evidence on this matter.

IT IS HEREBY ORDERED THAT Cease and Desist Order Nos. 90-198 and 92-217 are rescinded.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 22 March 1996.

William H. Crooks

WILLIAM H. CROOKS, Executive Officer

STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD —
CENTRAL VALLEY REGION
3443 ROUTIER ROAD, SUITE A
SACRAMENTO, CA 95827-3098
PHONE: (916) 255-3000
FAX: (916) 255-3015

TO: Dischargers in the Central Valley Region

SUBJECT: ***PROPOSITION 65***

The Safe Drinking Water and Toxic Enforcement Act of 1986 (which was approved by the voters as Proposition 65 in the 1986 General Election) forbids businesses from discharging, into present or potential sources of drinking water, chemicals which have been listed by the Governor as causing cancer or reproductive toxicity. The prohibition does not take effect until 20 months after the chemical has been listed by the Governor.

The text of Proposition 65 may be found in the California Health and Safety Code, beginning with Section 25249.5. The lead agency for implementation of Proposition 65 is the Office of Environmental Health Hazard Assessment (OEHHA) of the California Environmental Protection Agency (Cal-EPA). A Scientific Advisory Panel, appointed by the Governor, is responsible for adding chemicals to the list of carcinogens and reproductive toxicants. The current list of Proposition 65 chemicals and their listing dates is attached. Information about these chemicals, as well as other information relating to Proposition 65, may be obtained by contacting OEHHA at 601 North 7th Street, P. O. Box 942732, Sacramento, California 94234-7320. This information is also published on a regular basis in the California Regulatory Notice Register and may be found in Title 22, Division 2 of the California Code of Regulations (CCR), beginning with Section 12000.

Since you discharge waste to surface or ground waters in the State, or you discharge waste to land where components of the discharge may migrate to and enter these waters, you should read the attached list carefully and determine if any chemical listed may be contained in your discharge. Even though you have a valid waste discharge permit or an NPDES permit which authorizes the discharge of waste containing a listed chemical, those permits do not insulate you from the requirements of Proposition 65. The law does not apply to public entities, to businesses with fewer than ten employees, or to a discharge which does not place a significant amount of a listed chemical in drinking water. A "significant amount" is defined by OEHHA regulations in Title 22 of CCR; you should contact that agency to be sure you understand their definitions. The burden of proof that a discharge does not involve a significant amount or a significant risk is placed on the discharger of the waste.

Even though OEHHA is doing what it can to aid dischargers in complying with Proposition 65, nothing it does will provide absolute immunity to lawsuits brought by either local prosecutors or individual citizens.

You should also be aware of a warning requirement contained in Proposition 65. Beginning 12 months from the date a chemical is listed by the Governor, it may be discharged only if people who may be exposed to the chemical have been notified of the potential exposure. Thus, even though a discharge will not be prohibited for 20 months after its chemical component is listed, it will be subject to the warning requirement after 12 months.

The following are answers by Regional Water Board staff to three of the most common questions you may have about Proposition 65. For additional information, please contact OEHHA at (916) 445-6900 or the State Water Resources Control Board at (916) 657-0687. Tell the person who answers that you are inquiring about Proposition 65.

Proposition 65 Discharge Prohibition
Questions & Answers

Proposition 65 prohibits the discharge of a listed chemical where any "significant amount" of the chemical will enter any "source of drinking water." There are three aspects of this discharge prohibition where uncertainty often exists:

1) ***What is a "source of drinking water"?***

   Proposition 65 defines "source of drinking water" as either a present source of drinking water or water which is designated in a *Water Quality Control Plan* (*Basin Plan*) adopted by a Regional Water Board as being suitable for domestic or municipal uses. However, in some cases, the Basin Plans are unclear as to which bodies of water have the potential for domestic or municipal uses. In May 1988, the State Water Resources Control Board adopted Resolution No. 88–63, *Adoption of Policy Entitled "Sources of Drinking Water"*, which clarifies this matter. A copy of this policy for water quality control is attached.

2) ***What is a "significant amount" of a listed chemical?***

   Proposition 65 defines a "significant amount" as a "detectable amount," unless the discharger can show that a greater amount poses no "significant risk" of cancer or reproductive toxicity. For some of the more common chemicals, OEHHA has issued regulations containing levels which represent daily exposures below which there is assumed to be no "significant risk." These regulatory levels may be found in Title 22, Division 2 of the California Code of Regulations, Sections 12705, 12709 and 12711 for carcinogens, and Section 12805 for reproductive toxicants.

3) ***How will these levels affect regulation of my discharge by the Regional Water Boards?***

   The Regional Water Boards may consider the Proposition 65 discharge prohibition in the development and revision of waste discharge requirements and NPDES permits. The State Water Resources Control Board has stated that regulatory limits promulgated by OEHHA will be considered in the modification of these permits by the Regional Water Boards. The State Water Board is currently developing specific guidance for the Regional Water Boards on how to use Proposition 65 regulatory levels in the revision of requirements and permits affecting surface waters.

Attachments

STATE OF CALIFORNIA

ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT

SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986

CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER OR REPRODUCTIVE TOXICITY

The Safe Drinking Water and Toxic Enforcement Act of 1986 requires that the Governor revise and republish at least once per year the list of chemicals known to the State to cause cancer or reproductive toxicity. The identification number indicated in the following list is the Chemical Abstracts Service (CAS) Registry Number. No CAS number is given when several substances are presented as a single listing. The date refers to the initial appearance of the chemical on the list.

CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER

Chemical	CAS Number	Date
A-alpha-C (2-Amino-9H-pyrido[2,3-b]indole)	26148085	January 1, 1990
Acetaldehyde	75070	April 1, 1988
Acetamide	60355	January 1, 1990
Acetochlor	34256821	January 1, 1989
2-Acetylaminofluorene	53963	July 1, 1987
Acifluorfen	62476599	January 1, 1990
Acrylamide	79061	January 1, 1990
Acrylonitrile	107131	July 1, 1987
Actinomycin D	50760	October 1, 1989
Adriamycin (Doxorubicin hydrochloride)	23214928	July 1, 1987
AF-2;[2-(2-furyl)-3-(5-nitro-2-furyl)]acrylamide	3688537	July 1, 1987
Aflatoxins	---	January 1, 1988
Alachlor	15972608	January 1, 1989
Alcoholic beverages, when associated with alcohol abuse	---	July 1, 1988
Aldrin	309002	July 1, 1988
Allyl chloride	107051	January 1, 1990
2-Aminoanthraquinone	117793	October 1, 1989
p-Aminoazobenzene	60093	January 1, 1990
ortho-Aminoazotoluene	97563	July 1, 1987
4-Aminobiphenyl (4-aminodiphenyl)	92671	February 27, 1987
3-Amino-9-ethylcarbazole hydrochloride	6109973	July 1, 1989
1-Amino-2-methylanthraquinone	82280	October 1, 1989
2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole	712685	July 1, 1987
Amitrole	61825	July 1, 1987
Analgesic mixtures containing phenacetin	---	February 27, 1987
Aniline	62533	January 1, 1990
ortho-Anisidine	90040	July 1, 1987
ortho-Anisidine hydrochloride	134292	July 1, 1987
Antimony oxide (Antimony trioxide)	1309644	October 1, 1990
Aramite	140578	July 1, 1987
Arsenic (inorganic arsenic compounds)	---	February 27, 1987
Asbestos	1332214	February 27, 1987
Auramine	492808	July 1, 1987
Azaserine	115026	July 1, 1987
Azathioprine	446866	February 27, 1987
Azacitidine	320672	January 1, 1992
Azobenzene	103333	January 1, 1990
Benz[a]anthracene	56553	July 1, 1987
Benzene	71432	February 27, 1987
Benzidine [and its salts]	92875	February 27, 1987
Benzidine-based dyes	---	October 1, 1992
Benzo[b]fluoranthene	205992	July 1, 1987
Benzo[j]fluoranthene	205823	July 1, 1987
Benzo[k]fluoranthene	207089	July 1, 1987
Benzofuran	271896	October 1, 1990
Benzo[a]pyrene	50328	July 1, 1987
Benzotrichloride	98077	July 1, 1987
Benzyl chloride	100447	January 1, 1990
Benzyl violet 4B	1694093	July 1, 1987
Beryllium and beryllium compounds	---	October 1, 1987
Betel quid with tobacco	---	January 1, 1990
Bis(2-chloroethyl)ether	111444	April 1, 1988
N,N-Bis(2-chloroethyl)-2-naphthylamine (Chlornapazine)	494031	February 27, 1987
Bischloroethyl nitrosourea (BCNU) (Carmustine)	154938	July 1, 1987
Bis(chloromethyl)ether	542881	February 27, 1987
Bitumens, extracts of steam-refined and air refined	---	January 1, 1990
Bracken fern	---	January 1, 1990
Bromodichloromethane	75274	January 1, 1990
Bromoform	75252	April 1, 1991
1,3-Butadiene	106990	April 1, 1988
1,4-Butanediol dimethanesulfonate (Busulfan)	55981	February 27, 1987
Butylated hydroxyanisole	25013165	January 1, 1990
beta-Butyrolactone	3068880	July 1, 1987
Cadmium and cadmium compounds	---	October 1, 1987
Caffeic acid	331395	October 1, 1994
Captafol	2425061	October 1, 1988
Captan	133062	January 1, 1990

Chemical	CAS Number	Date
Carbon tetrachloride	56235	October 1, 1987
Carbon-black extracts	---	January 1, 1990
Ceramic fibers (airborne particles of respirable size)	---	July 1, 1990
Certain combined chemotherapy for lymphomas	---	February 27, 1987
Chlorambucil	305033	February 27, 1987
Chloramphenicol	56757	October 1, 1989
Chlordane	57749	July 1, 1988
Chlordecone (Kepone)	143500	January 1, 1988
Chlordimeform	6164983	January 1, 1989
Chlorendic acid	115286	July 1, 1989
Chlorinated paraffins (Average chain length, C12; approximately 60 percent chlorine by weight)	108171262	July 1, 1989
p-Chloroaniline	106478	October 1, 1994
Chlorodibromomethane	124481	January 1, 1990
Chloroethane (Ethyl chloride)	75003	July 1, 1990
1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU) (Lomustine)	13010474	January 1, 1988
1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea (Methyl CCNU)	13909096	October 1, 1988
Chloroform	67663	October 1, 1987
Chloromethyl methyl ether (technical grade)	107302	February 27, 1987
3-Chloro-2-methylpropene	563473	July 1, 1989
4-Chloro-ortho-phenylenediamine	95830	January 1, 1988
p-Chloro-o-toluidine	95692	January 1, 1990
Chlorothalonil	1897456	January 1, 1989
Chlorozotocin	54749905	January 1, 1992
Chromium (hexavalent compounds)	---	February 27, 1987
Chrysene	218019	January 1, 1990
C.I. Acid Red 114	6459945	July 1, 1992
C.I. Basic Red 9 monohydrochloride	569619	July 1, 1989
Ciclosporin (Cyclosporin A, Cyclosporine)	59865133 79217600	January 1, 1992
Cinnamyl anthranilate	87296	July 1, 1989
Cisplatin	15663271	October 1, 1988
Citrus Red No. 2	6358538	October 1, 1989
Cobalt metal powder	7440484	July 1, 1992
Cobalt [II] oxide	1307966	July 1, 1992
Coke oven emissions	---	February 27, 1987
Conjugated estrogens	---	February 27, 1987
Creosotes	---	October 1, 1988
para-Cresidine	120718	January 1, 1988
Cupferron	135206	January 1, 1988
Cycasin	14901087	January 1, 1988
Cyclophosphamide (anhydrous)	50180	February 27, 1987
Cyclophosphamide (hydrated)	6055192	February 27, 1987

Chemical	CAS Number	Date
D&C Orange No. 17	3468631	July 1, 1990
D&C Red No. 8	2092560	October 1, 1990
D&C Red No. 9	5160021	July 1, 1990
D&C Red No. 19	81889	July 1, 1990
Dacarbazine	4342034	January 1, 1988
Daminozide	1596845	January 1, 1990
Dantron (Chrysazin, 1,8-Dihydroxyanthraquinone)	117102	January 1, 1992
Daunomycin	20830813	January 1, 1988
DDD (Dichlorodiphenyldichloroethane)	72548	January 1, 1989
DDE (Dichlorodiphenyldichloroethylene)	72559	January 1, 1989
DDT (Dichlorodiphenyltrichloroethane)	50293	October 1, 1987
DDVP (Dichlorvos)	62737	January 1, 1989
N,N'-Diacetylbenzidine	613354	October 1, 1990
2,4-Diaminoanisole	615054	October 1, 1990
2,4-Diaminoanisole sulfate	39156417	January 1, 1988
4,4'-Diaminodiphenyl ether (4,4'-Oxydianiline)	101804	January 1, 1988
2,4-Diaminotoluene	95807	January 1, 1988
Diaminotoluene (mixed)	---	January 1, 1990
Dibenz[a,h]acridine	226368	January 1, 1988
Dibenz[a,j]acridine	224420	January 1, 1988
Dibenz[a,h]anthracene	53703	January 1, 1988
7H-Dibenzo[c,g]carbazole	194592	January 1, 1988
Dibenzo[a,e]pyrene	192654	January 1, 1988
Dibenzo[a,h]pyrene	189640	January 1, 1988
Dibenzo[a,i]pyrene	189559	January 1, 1988
Dibenzo[a,l]pyrene	191300	January 1, 1988
1,2-Dibromo-3-chloropropane (DBCP)	96128	July 1, 1987
2,3-Dibromo-1-propanol	96139	October 1, 1994
p-Dichlorobenzene	106467	January 1, 1989
3,3'-Dichlorobenzidine	91941	October 1, 1987
1,4-Dichloro-2-butene	764410	January 1, 1990
3,3'-Dichloro-4,4'-diaminodiphenyl ether	28434868	January 1, 1988
1,1-Dichloroethane	75343	January 1, 1990
Dichloromethane (Methylene chloride)	75092	April 1, 1988
1,2-Dichloropropane	78875	January 1, 1990
1,3-Dichloropropene	542756	January 1, 1989
Dieldrin	60571	July 1, 1988
Dienestrol	84173	January 1, 1990
Diepoxybutane	1464535	January 1, 1988
Diesel engine exhaust	---	October 1, 1990
Di(2-ethylhexyl)phthalate	117817	January 1, 1988
1,2-Diethylhydrazine	1615801	January 1, 1988

STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL VALLEY REGION
3443 ROUTIER ROAD, SUITE A
SACRAMENTO, CA 95827-3098
PHONE: (916) 255-3000
FAX: (916) 255-3015

TO: Dischargers in the Central Valley Region

SUBJECT: *PROPOSITION 65*

The Safe Drinking Water and Toxic Enforcement Act of 1986 (which was approved by the voters as Proposition 65 in the 1986 General Election) forbids businesses from discharging, into present or potential sources of drinking water, chemicals which have been listed by the Governor as causing cancer or reproductive toxicity. The prohibition does not take effect until 20 months after the chemical has been listed by the Governor.

The text of Proposition 65 may be found in the California Health and Safety Code, beginning with Section 25249.5. The lead agency for implementation of Proposition 65 is the Office of Environmental Health Hazard Assessment (OEHHA) of the California Environmental Protection Agency (Cal-EPA). A Scientific Advisory Panel, appointed by the Governor, is responsible for adding chemicals to the list of carcinogens and reproductive toxicants. The current list of Proposition 65 chemicals and their listing dates is attached. Information about these chemicals, as well as other information relating to Proposition 65, may be obtained by contacting OEHHA at 601 North 7th Street, P. O. Box 942732, Sacramento, California 94234-7320. This information is also published on a regular basis in the California Regulatory Notice Register and may be found in Title 22, Division 2 of the California Code of Regulations (CCR), beginning with Section 12000.

Since you discharge waste to surface or ground waters in the State, or you discharge waste to land where components of the discharge may migrate to and enter these waters, you should read the attached list carefully and determine if any chemical listed may be contained in your discharge. Even though you have a valid waste discharge permit or an NPDES permit which authorizes the discharge of waste containing a listed chemical, those permits do not insulate you from the requirements of Proposition 65. The law does not apply to public entities, to businesses with fewer than ten employees, or to a discharge which does not place a significant amount of a listed chemical in drinking water. A "significant amount" is defined by OEHHA regulations in Title 22 of CCR; you should contact that agency to be sure you understand their definitions. The burden of proof that a discharge does not involve a significant amount or a significant risk is placed on the discharger of the waste.

Even though OEHHA is doing what it can to aid dischargers in complying with Proposition 65, nothing it does will provide absolute immunity to lawsuits brought by either local prosecutors or individual citizens.

You should also be aware of a warning requirement contained in Proposition 65. Beginning 12 months from the date a chemical is listed by the Governor, it may be discharged only if people who may be exposed to the chemical have been notified of the potential exposure. Thus, even though a discharge will not be prohibited for 20 months after its chemical component is listed, it will be subject to the warning requirement after 12 months.

The following are answers by Regional Water Board staff to three of the most common questions you may have about Proposition 65. For additional information, please contact OEHHA at (916) 445-6900 or the State Water Resources Control Board at (916) 657-0687. Tell the person who answers that you are inquiring about Proposition 65.

Proposition 65 Discharge Prohibition
Questions & Answers

Proposition 65 prohibits the discharge of a listed chemical where any "significant amount" of the chemical will enter any "source of drinking water." There are three aspects of this discharge prohibition where uncertainty often exists:

1) ***What is a "source of drinking water"?***

   Proposition 65 defines "source of drinking water" as either a present source of drinking water or water which is designated in a *Water Quality Control Plan (Basin Plan)* adopted by a Regional Water Board as being suitable for domestic or municipal uses. However, in some cases, the Basin Plans are unclear as to which bodies of water have the potential for domestic or municipal uses. In May 1988, the State Water Resources Control Board adopted Resolution No. 88–63, *Adoption of Policy Entitled "Sources of Drinking Water"*, which clarifies this matter. A copy of this policy for water quality control is attached.

2) ***What is a "significant amount" of a listed chemical?***

   Proposition 65 defines a "significant amount" as a "detectable amount," unless the discharger can show that a greater amount poses no "significant risk" of cancer or reproductive toxicity. For some of the more common chemicals, OEHHA has issued regulations containing levels which represent daily exposures below which there is assumed to be no "significant risk." These regulatory levels may be found in Title 22, Division 2 of the California Code of Regulations, Sections 12705, 12709 and 12711 for carcinogens, and Section 12805 for reproductive toxicants.

3) ***How will these levels affect regulation of my discharge by the Regional Water Boards?***

   The Regional Water Boards may consider the Proposition 65 discharge prohibition in the development and revision of waste discharge requirements and NPDES permits. The State Water Resources Control Board has stated that regulatory limits promulgated by OEHHA will be considered in the modification of these permits by the Regional Water Boards. The State Water Board is currently developing specific guidance for the Regional Water Boards on how to use Proposition 65 regulatory levels in the revision of requirements and permits affecting surface waters.

Attachments

Chemical	CAS Number	Date
Diethyl sulfate	64675	January 1, 1988
Diethylstilbestrol	56531	February 27, 1987
Diglycidyl resorcinol ether (DGRE)	101906	July 1, 1989
Dihydrosafrole	94586	January 1, 1988
Diisopropyl sulfate	2973106	April 1, 1993
3,3'-Dimethoxybenzidine (ortho-Dianisidine)	119904	January 1, 1988
3,3'-Dimethoxybenzidine dihydrochloride (ortho-Dianisidine dihydrochloride)	20325400	October 1, 1990
Dimethyl sulfate	77781	January 1, 1988
4-Dimethylaminoazobenzene	60117	January 1, 1988
trans-2-[(Dimethylamino)methylimino]-5-[2-(5-nitro-2-furyl)vinyl]-1,3,4-oxadiazole	55738540	January 1, 1988
7,12-Dimethylbenz(a)anthracene	57976	January 1, 1990
3,3'-Dimethylbenzidine (ortho-Tolidine)	119937	January 1, 1988
3,3'-Dimethylbenzidine dihydrochloride	612828	April 1, 1992
Dimethylcarbamoyl chloride	79447	January 1, 1988
1,1-Dimethylhydrazine (UDMH)	57147	October 1, 1989
1,2-Dimethylhydrazine	540738	January 1, 1988
Dimethylvinylchloride	513371	July 1, 1989
1,6-Dinitropyrene	42397648	October 1, 1990
1,8-Dinitropyrene	42397659	October 1, 1990
2,4-Dinitrotoluene	121142	July 1, 1988
1,4-Dioxane	123911	January 1, 1988
Diphenylhydantoin (Phenytoin)	57410	January 1, 1988
Diphenylhydantoin (Phenytoin), sodium salt	630933	January 1, 1988
Direct Black 38 (technical grade)	1937377	January 1, 1988
Direct Blue 6 (technical grade)	2602462	January 1, 1988
Direct Brown 95 (technical grade)	16071866	October 1, 1988
Disperse Blue 1	2475458	October 1, 1990
Epichlorohydrin	106898	October 1, 1987
Erionite	12510428	October 1, 1988
Estradiol 17B	50282	January 1, 1988
Estrone	53167	January 1, 1988
Ethinylestradiol	57636	January 1, 1988
Ethyl acrylate	140885	July 1, 1989
Ethyl methanesulfonate	62500	January 1, 1988
Ethyl-4,4'-dichlorobenzilate	510156	January 1, 1990
Ethylene dibromide	106934	July 1, 1987
Ethylene dichloride (1,2-Dichloroethane)	107062	October 1, 1987
Ethylene oxide	75218	July 1, 1987
Ethylene thiourea	96457	January 1, 1988
[illegible]	[illegible]	January 1, 1988
Folpet	133073	January 1, 1989
Formaldehyde (gas)	50000	January 1, 1988
2-(2-Formylhydrazino)-4-(5-nitro-2-furyl)thiazole	3570750	January 1, 1988
Furan	110009	October 1, 1993
Furazolidone	67458	January 1, 1990
Furmecyclox	60568050	January 1, 1990
Gasoline engine exhaust (condensates/extracts)	---	October 1, 1990
Glasswool fibers (airborne particles of respirable size)	---	July 1, 1990
Glu-P-1 (2-Amino-6-methyldipyrido[1,2-a:3',2'-d]imidazole)	67730114	January 1, 1990
Glu-P-2 (2-Aminodipyrido[1,2-a:3',2'-d]imidazole)	67730103	January 1, 1990
Glycidaldehyde	765344	January 1, 1988
Glycidol	556525	July 1, 1990
Griseofulvin	126078	January 1, 1990
Gyromitrin (Acetaldehyde methylformylhydrazone)	16568028	January 1, 1988
HC Blue 1	2784943	July 1, 1989
Heptachlor	76448	July 1, 1988
Heptachlor epoxide	1024573	July 1, 1988
Hexachlorobenzene	118741	October 1, 1987
Hexachlorocyclohexane (technical grade)	---	October 1, 1987
Hexachlorodibenzodioxin	34465468	April 1, 1988
Hexachloroethane	67721	July 1, 1990
Hexamethylphosphoramide	680319	January 1, 1988
Hydrazine	302012	January 1, 1988
Hydrazine sulfate	10034932	January 1, 1988
Hydrazobenzene (1,2-Diphenylhydrazine)	122667	January 1, 1988
Indeno[1,2,3-cd]pyrene	193395	January 1, 1988
IQ (2-Amino-3-methylimidazo[4,5-f]quinoline)	76180966	April 1, 1990
Iron dextran complex	9004664	January 1, 1988
Isosafrole	120581	October 1, 1989
Lactofen	77501634	January 1, 1989
Lasiocarpine	303344	April 1, 1988
Lead acetate	301042	January 1, 1988
Lead and lead compounds	---	October 1, 1992
Lead phosphate	7446277	April 1, 1988
Lead subacetate	1335326	October 1, 1989
Lindane and other hexachlorocyclohexane isomers	---	October 1, 1989
Mancozeb	8018017	January 1, 1990

Chemical	CAS Number	Date
Maneb	12427382	January 1, 1990
Me-A-alpha-C (2-Amino-3-methyl-9H-pyrido[2,3-b]indole)	68006837	January 1, 1990
Medroxyprogesterone acetate	71589	January 1, 1990
MeIQ (2-Amino-3,4-dimethylimidazo[4,5-f]quinoline)	7094112	October 1, 1994
MeIQx (2-Amino-3,8-dimethylimidazo[4,5-f]quinoxaline)	7500040	October 1, 1994
Melphalan	148823	February 27, 1987
Merphalan	531760	April 1, 1988
Mestranol	72333	April 1, 1988
8-Methoxypsoralen with ultraviolet A therapy	298817	February 27, 1987
5-Methoxypsoralen with ultraviolet A therapy	484208	October 1, 1988
2-Methylaziridine (Propyleneimine)	75558	January 1, 1988
Methylazoxymethanol	590965	April 1, 1988
Methylazoxymethanol acetate	592621	April 1, 1988
3-Methylcholanthrene	56495	January 1, 1990
5-Methylchrysene	3697243	April 1, 1988
4,4'-Methylene bis(2-chloroaniline)	101144	July 1, 1987
4,4'-Methylene bis(N,N-dimethyl)benzenamine	101611	October 1, 1989
4,4'-Methylene bis(2-methylaniline)	838880	April 1, 1988
4,4'-Methylenedianiline	101779	January 1, 1988
4,4'-Methylenedianiline dihydrochloride	13552448	January 1, 1988
Methylhydrazine and its salts	---	July 1, 1992
Methyl iodide	74884	April 1, 1988
Methyl methanesulfonate	66273	April 1, 1988
2-Methyl-1-nitroanthraquinone (of uncertain purity)	129157	April 1, 1988
N-Methyl-N'-nitro-N-nitrosoguanidine	70257	April 1, 1988
N-Methylolacrylamide	924425	July 1, 1990
Methylthiouracil	56042	October 1, 1989
Metiram	9006422	January 1, 1990
Metronidazole	443481	January 1, 1988
Michler's ketone	90948	January 1, 1988
Mirex	2385855	January 1, 1988
Mitomycin C	50077	April 1, 1988
Monocrotaline	315220	April 1, 1988
5-(Morpholinomethyl)-3-[(5-nitro-furfurylidene)-amino]-2-oxazolidinone	139913	April 1, 1988
Mustard Gas	505602	February 27, 1987
Nafenopin	3771195	April 1, 1988
1-Naphthylamine	134327	October 1, 1989
2-Naphthylamine	91598	February 27, 1987
Nickel and certain nickel compounds	---	October 1, 1989
Nickel carbonyl	13463393	October 1, 1987
Nick[illegible] ry dust from the pyrometallurgical process	---	October 1, 1987
Nickel subsulfide	12035722	October 1, 1987
Niridazole	61574	April 1, 1988
Nitrilotriacetic acid	139139	January 1, 1988
Nitrilotriacetic acid, trisodium salt monohydrate	18662538	April 1, 1989
5-Nitroacenaphthene	602879	April 1, 1988
5-Nitro-o-anisidine	99592	October 1, 1989
o-Nitroanisole	91236	October 1, 1992
4-Nitrobiphenyl	92933	April 1, 1988
6-Nitrochrysene	7496028	October 1, 1990
Nitrofen (technical grade)	1836755	January 1, 1988
2-Nitrofluorene	607578	October 1, 1990
Nitrofurazone	59870	January 1, 1990
1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	555840	April 1, 1988
N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide	531828	April 1, 1988
Nitrogen mustard (Mechlorethamine)	51752	January 1, 1988
Nitrogen mustard hydrochloride (Mechlorethaminehydrochloride)	55867	April 1, 1988
Nitrogen mustard N-oxide	126852	April 1, 1988
Nitrogen mustard N-oxide hydrochloride	302705	April 1, 1988
2-Nitropropane	79469	January 1, 1988
1-Nitropyrene	5522430	October 1, 1990
4-Nitropyrene	57835924	October 1, 1990
N-Nitrosodi-n-butylamine	924163	October 1, 1987
N-Nitrosodiethanolamine	1116547	January 1, 1988
N-Nitrosodiethylamine	55185	October 1, 1987
N-Nitrosodimethylamine	62759	October 1, 1987
p-Nitrosodiphenylamine	156105	January 1, 1988
N-Nitrosodiphenylamine	86306	April 1, 1988
N-Nitrosodi-n-propylamine	621647	January 1, 1988
N-Nitroso-N-ethylurea	759739	October 1, 1987
3-(N-Nitrosomethylamino)propionitrile	60153493	April 1, 1990
4-(N-Nitrosomethylamino)-1-(3-pyridyl)1-butanone	64091914	April 1, 1990
N-Nitrosomethylethylamine	10595956	October 1, 1989
N-Nitroso-N-methylurea	684935	October 1, 1987
N-Nitroso-N-methylurethane	615532	April 1, 1988
N-Nitrosomethylvinylamine	4549400	January 1, 1988
N-Nitrosomorpholine	59892	January 1, 1988
N-Nitrosonornicotine	16543558	January 1, 1988
N-Nitrosopiperidine	100754	January 1, 1988
N-Nitrosopyrrolidine	930552	October 1, 1987
N-Nitrososarcosine	13256229	January 1, 1988
Norethisterone (Norethindrone)	68224	October 1, 1989
Ochratoxin A	303479	Jul[illegible] '0

Chemical	CAS Number	Date
Oil Orange SS	2646175	April 1, 1988
Oral contraceptives, combined	---	October 1, 1989
Oral contraceptives, sequential	---	October 1, 1989
Oxadiazon	19666309	July 1, 1991
Oxymetholone	434071	January 1, 1988
Oxazepam	604751	October 1, 1994
Panfuran S	794934	January 1, 1988
Pentachlorophenol	87865	January 1, 1990
Phenacetin	62442	October 1, 1989
Phenazopyridine	94780	January 1, 1988
Phenazopyridine hydrochloride	136403	January 1, 1988
Phenesterin	3546109	July 1, 1989
Phenobarbital	50066	January 1, 1990
Phenoxybenzamine	59961	April 1, 1988
Phenoxybenzamine hydrochloride	63923	April 1, 1988
Phenyl glycidyl ether	122601	October 1, 1990
Phenylhydrazine and its salts	---	July 1, 1992
o-Phenylphenate, sodium	132274	January 1, 1990
PhIP(2-Amino-1-methyl-6-phenylimidazol[4,5-b]pyridine)	105650235	October 1, 1994
Polybrominated biphenyls	---	January 1, 1988
Polychlorinated biphenyls	---	October 1, 1989
Polychlorinated biphenyls (containing 60 or more percent chlorine by molecular weight)	---	January 1, 1988
Polychlorinated dibenzo-p-dioxins	---	October 1, 1992
Polychlorinated dibenzofurans	---	October 1, 1992
Polygeenan	53973981	January 1, 1988
Ponceau MX	3761533	April 1, 1988
Ponceau 3R	3564098	April 1, 1988
Potassium bromate	7758012	January 1, 1990
Procarbazine	671169	January 1, 1988
Procarbazine hydrochloride	366701	January 1, 1988
Procymidone	32809168	October 1, 1994
Progesterone	57830	January 1, 1988
1,3-Propane sultone	1120714	January 1, 1988
Propargite	2312358	October 1, 1994
beta-Propiolactone	57578	January 1, 1988
Propylene oxide	75569	October 1, 1988
Propylthiouracil	51525	January 1, 1988
Radionuclides	---	July 1, 1989
Reserpine	50555	October 1, 1989
Residual (heavy) fuel oils	---	October 1, 1990

Chemical	CAS Number	Date
Saccharin	81072	October 1, 1989
Saccharin, sodium	128449	January 1, 1988
Safrole	94597	January 1, 1988
Selenium sulfide	7446346	October 1, 1989
Shale-oils	68308349	April 1, 1990
Silica, crystalline (airborne particles of respirable size)	---	October 1, 1988
Soots, tars, and mineral oils (untreated and mildly treated oils and used engine oils)	---	February 27, 1987
Sterigmatocystin	10048132	April 1, 1988
Streptozotocin	18883664	January 1, 1988
Styrene oxide	96093	October 1, 1988
Sulfallate	95067	January 1, 1988
Talc containing asbestiform fibers	---	April 1, 1990
Terrazole	2593159	October 1, 1994
Testosterone and its esters	58220	April 1, 1988
2,3,7,8-Tetrachlorodibenzo-para-dioxin (TCDD)	1746016	January 1, 1988
1,1,2,2-Tetrachloroethane	79345	July 1, 1990
Tetrachloroethylene (Perchloroethylene)	127184	April 1, 1988
p-α,α,α-Tetrachlorotoluene	5216251	January 1, 1990
Tetranitromethane	509148	July 1, 1990
Thioacetamide	62555	January 1, 1988
4,4'-Thiodianiline	139651	April 1, 1988
Thiourea	62566	January 1, 1988
Thorium dioxide	1314201	February 27, 1987
Tobacco, oral use of smokeless products	---	April 1, 1988
Tobacco smoke	---	April 1, 1988
Toluene diisocyanate	26471625	October 1, 1989
ortho-Toluidine	95534	January 1, 1988
ortho-Toluidine hydrochloride	636215	January 1, 1988
para-Toluidine	106490	January 1, 1990
Toxaphene (Polychlorinated camphenes)	8001352	January 1, 1988
Treosulfan	299752	February 27, 1987
Trichlormethine (Trimustine hydrochloride)	817094	January 1, 1992
2,4,6-Trichlorophenol	88062	January 1, 1988
Triphenyltin hydroxide	76879	July 1, 1992
Trichloroethylene	79016	April 1, 1988
Tris(aziridinyl)-para-benzoquinone (Triaziquone)	68768	October 1, 1989
Tris(1-aziridinyl)phosphine sulfide (Thiotepa)	52244	January 1, 1988
Tris(2-chloroethyl) phosphate	115968	April 1, 1992
Tris(2,3-dibromopropyl)phosphate	126727	January 1, 1988
Trp-P-1 (Tryptophan-P-1)	62450060	April 1, 1988
Trp-P-2 (Tryptophan-P-2)	62450071	April 1, 1988

Chemical	CAS Number	Date
Trypan blue (commercial grade)	72571	October 1, 1989
Unleaded gasoline (wholly vaporized)	---	April 1, 1988
Uracil mustard	66751	April 1, 1988
Urethane (Ethyl carbamate)	51796	January 1, 1988
Vinyl bromide	593602	October 1, 1988
Vinyl chloride	75014	February 27, 1987
4-Vinyl-1-cyclohexene diepoxide (Vinyl cyclohexenedioxide)	106876	July 1, 1990
Vinyl trichloride (1,1,2-Trichloroethane)	79005	October 1, 1990
2,6-Xylidine (2,6-Dimethylaniline)	87627	January 1, 1991
Zineb	12122677	January 1, 1990

6

CHEMICALS KNOWN TO THE STATE TO CAUSE REPRODUCTIVE TOXICITY

Developmental toxicity

Chemical	CAS Number	Date
Acetohydroxamic acid	546883	April 1, 1990
Actinomycin D	50760	October 1, 1992
All-trans retinoic acid	302794	January 1, 1989
Alprazolam	28981977	July 1, 1990
Amikacin sulfate	39831555	July 1, 1990
Aminoglutethimide	125848	July 1, 1990
Aminoglycosides	---	October 1, 1992
Aminopterin	54626	July 1, 1987
Angiotensin converting enzyme (ACE) inhibitors	---	October 1, 1992
Anisindione	117373	October 1, 1992
Aspirin (NOTE: It is especially important not to use aspirin during the last three months of pregnancy, unless specifically directed to do so by a physician because it may cause problems in the unborn child or complications during delivery.)	50782	July 1, 1990
Barbiturates	---	October 1, 1992
Benomyl	17804352	July 1, 1991
Benzphetamine hydrochloride	5411223	April 1, 1990
Benzodiazepines	---	October 1, 1992
Bischloroethyl nitrosourea (BCNU) (Carmustine)	154938	July 1, 1990
Bromoxynil	1689845	October 1, 1990
Butabarbital sodium	143817	October 1, 1992

Chemical	CAS Number	Date
1,4-Butanediol dimethylsulfonate (Busulfan)	55981	January 1, 1989
Carbon disulfide	75150	July 1, 1989
Carbon monoxide	630080	July 1, 1989
Carboplatin	41575944	July 1, 1990
Chenodiol	474259	April 1, 1990
Chlorcyclizine hydrochloride	1620219	July 1, 1987
Chlorambucil	305033	January 1, 1989
Chlordecone (Kepone)	143500	January 1, 1989
Chlordiazepoxide	58253	January 1, 1992
Chlordiazepoxide hydrochloride	438415	January 1, 1992
1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU) (Lomustine)	13010474	July 1, 1990
Clomiphene citrate	50419	April 1, 1990
Clorazepate dipotassium	57109907	October 1, 1992
Cocaine	50362	July 1, 1989
Colchicine	64868	October 1, 1992
Conjugated estrogens	---	April 1, 1990
Cyanazine	21725462	April 1, 1990
Cycloheximide	66819	January 1, 1989
Cyclophosphamide (anhydrous)	50180	January 1, 1989
Cyclophosphamide (hydrated)	6055192	January 1, 1989
Cyhexatin	13121705	January 1, 1989
Cytarabine	147944	January 1, 1989
Danazol	17230885	April 1, 1990
Daunorubicin hydrochloride	23541506	July 1, 1990
Demeclocycline hydrochloride (internal use)	64733	January 1, 1992
Diazepam	439145	January 1, 1992
Dicumarol	66762	October 1, 1992
Diethylstilbestrol (DES)	56531	July 1, 1987
Dinocap	39300453	April 1, 1990
Dinoseb	88857	January 1, 1989
Diphenylhydantoin (Phenytoin)	57410	July 1, 1987
Doxycycline (internal use)	564250	July 1, 1990
Doxycycline calcium (internal use)	94088854	January 1, 1992
Doxycycline hyclate (internal use)	24390145	October 1, 1991
Doxycycline monohydrate (internal use)	17086281	October 1, 1991
Ergotamine tartrate	379793	April 1, 1990
Ethyl alcohol in alcoholic beverages	---	October 1, 1987
Ethylene glycol monoethyl ether	110805	January 1, 1989
Ethylene glycol monomethyl ether	109864	January 1, 1989
Ethylene glycol monoethyl ether acetate	111159	January

Chemical	CAS Number	Date
Ethylene glycol monomethyl ether acetate	110496	January 1, 1993
Ethylene thiourea	96457	January 1, 1993
Etoposide	33419420	July 1, 1990
Etretinate	54350480	July 1, 1987
Fluorouracil	51218	January 1, 1989
Fluoxymesterone	76437	April 1, 1990
Flurazepam hydrochloride	1172185	October 1, 1992
Flutamide	13311847	July 1, 1990
Halazepam	23092173	July 1, 1990
Hexachlorobenzene	118741	January 1, 1989
Ifosfamide	3778732	July 1, 1990
Iodine-131	10043660	January 1, 1989
Isotretinoin	4759482	July 1, 1987
Lead	...	February 27, 1987
Lithium carbonate	554132	January 1, 1991
Lithium citrate	919164	January 1, 1991
Lorazepam	846491	July 1, 1990
Lovastatin	75330755	October 1, 1992
Medroxyprogesterone acetate	71589	April 1, 1990
Megestrol acetate	595335	January 1, 1991
Melphalan	148823	July 1, 1990
Menotropins	9002680	April 1, 1990
Meprobamate	57534	January 1, 1992
Mercaptopurine	6112761	July 1, 1990
Mercury and mercury compounds	...	July 1, 1990
Methacycline hydrochloride	3963959	January 1, 1991
Methimazole	60560	July 1, 1990
Methotrexate	59052	January 1, 1989
Methotrexate sodium	15475566	April 1, 1990
Methyl bromide as a structural fumigant	74839	January 1, 1993
Methyl mercury	...	July 1, 1987
Methyltestosterone	58184	April 1, 1990
Midazolam hydrochloride	59467968	July 1, 1990
Minocycline hydrochloride (internal use)	13614987	January 1, 1992
Misoprostol	59122462	April 1, 1990
Mitoxantrone hydrochloride	70476823	July 1, 1990
Nafarelin acetate	86220420	April 1, 1990

Chemical	CAS Number	Date
Neomycin sulfate (internal use)	1405103	October 1, 1992
Netilmicin sulfate	56391572	July 1, 1990
Nicotine	54115	April 1, 1990
Nitrogen mustard (Mechlorethamine)	51752	January 1, 1989
Nitrogen mustard hydrochloride (Mechlorethamine hydrochloride)	55867	July 1, 1990
Norethisterone (Norethindrone)	68224	April 1, 1990
Norethisterone acetate (Norethindrone acetate)	51989	October 1, 1991
Norethisterone (Norethindrone)/Ethinyl estradiol	68224/57636	April 1, 1990
Norethisterone (Norethindrone)/Mestranol	68224/72333	April 1, 1990
Norgestrel	6533002	April 1, 1990
Oxazepam	604751	October 1, 1992
Oxytetracycline (internal use)	79572	January 1, 1991
Oxytetracycline hydrochloride (internal use)	2058460	October 1, 1991
Paramethadione	115673	July 1, 1990
Penicillamine	52675	January 1, 1991
Pentobarbital sodium	57330	July 1, 1990
Phenacemide	63989	July 1, 1990
Phenprocoumon	435972	October 1, 1992
Pipobroman	54911	July 1, 1990
Plicamycin	18378897	April 1, 1990
Polybrominated biphenyls	922660	October 1, 1994
Polychlorinated biphenyls	...	January 1, 1991
Procarbazine hydrochloride	366701	July 1, 1990
Propylthiouracil	51525	July 1, 1990
Retinol/retinyl esters, when in daily dosages in excess of 10,000 IU, or 3,000 retinol equivalents. (NOTE: Retinol/retinyl esters are required and essential for maintenance of normal reproductive function. The recommended daily level during pregnancy is 8,000 IU.)	...	July 1, 1989
Ribavirin	36791045	April 1, 1990
Secobarbital sodium	309433	October 1, 1992
Streptomycin sulfate	3810740	January 1, 1991
Tamoxifen citrate	54965241	July 1, 1990
Temazepam	846504	April 1, 1990
Testosterone cypionate	58208	October 1, 1991
Testosterone enanthate	315377	April 1, 1990
2,3,7,8-Tetrachlorodibenzo-para-dioxin (TCDD)	1746016	April 1, 1991
Tetracyclines (internal use)	...	October 1, 1992
Tetracycline (internal use)	60548	October 1, 1991

Chemical	CAS Number	Date
Tetracycline hydrochloride (internal use)	64755	January 1, 1991
Thalidomide	50351	July 1, 1987
Thioguanine	154427	July 1, 1990
Tobacco smoke (primary)	---	April 1, 1988
Tobramycin sulfate	49842071	July 1, 1990
Toluene	108883	January 1, 1991
Triazolam	28911015	April 1, 1990
Trilostane	13647353	April 1, 1990
Trimethadione	127480	January 1, 1991
Uracil mustard	66751	January 1, 1992
Urethane	51796	October 1, 1994
Urofollitropin	26995915	April 1, 1990
Valproate (Valproic acid)	99661	July 1, 1987
Vinblastine sulfate	143679	July 1, 1990
Vincristine sulfate	2068782	July 1, 1990
Warfarin	81812	July 1, 1987
Female reproductive toxicity		
Aminopterin	54626	July 1, 1987
Anabolic steroids	---	April 1, 1990
Aspirin (NOTE: It is especially important not to use aspirin during the last three months of pregnancy, unless specifically directed to do so by a physician because it may cause problems in the unborn child or complications during delivery.)	50782	July 1, 1990
Carbon disulfide	75150	July 1, 1989
Cocaine	50362	July 1, 1989
Cyclophosphamide (anhydrous)	50180	January 1, 1989
Cyclophosphamide (hydrated)	6055192	January 1, 1989
Ethylene oxide	75218	February 27, 1987
Lead	---	February 27, 1987
Tobacco smoke (primary)	---	April 1, 1988
Uracil mustard	66751	January 1, 1992

Male:

Chemical	CAS Number	Date
Anabolic steroids		April 1, 1990
Benomyl	17804352	July 1, 1991
Carbon disulfide	75150	July 1, 1989
Colchicine	64868	October 1, 1992
Cyclophosphamide (anhydrous)	50180	January 1, 1989
Cyclophosphamide (hydrated)	6055192	January 1, 1989
1,2 Dibromo-3-chloropropane (DBCP)	96128	February 27, 1987
m-Dinitrobenzene	99650	July 1, 1990
o-Dinitrobenzene	528290	July 1, 1990
p-Dinitrobenzene	100254	July 1, 1990
Dinoseb	88857	January 1, 1989
Ethylene glycol monoethyl ether	110805	January 1, 1989
Ethylene glycol monomethyl ether	109864	January 1, 1989
Ethylene glycol monoethyl ether acetate	111159	January 1, 1993
Ethylene glycol monomethyl ether acetate	110496	January 1, 1993
Hexamethylphosphoramide	680319	October 1, 1994
Lead	---	February 27, 1987
Nitrofurantoin	67209	April 1, 1991
Tobacco smoke (primary)	---	April 1, 1988
Uracil mustard	66751	January 1, 1992

Date: October 1, 1994

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 88-63

ADOPTION OF POLICY ENTITLED
"SOURCES OF DRINKING WATER"

WHEREAS:

1. California Water Code Section 13140 provides that the State Board shall formulate and adopt State Policy for Water Quality Control; and,

2. California Water Code Section 13240 provides that Water Quality Control Plans "shall conform" to any State Policy for Water Quality Control; and,

3. The Regional Boards can conform the Water Quality Control Plans to this policy by amending the plans to incorporate the policy; and,

4. The State Board must approve any conforming amendments pursuant to Water Code Section 13245; and,

5. "Sources of drinking water" shall be defined in Water Quality Control Plans as those water bodies with beneficial uses designated as suitable, or potentially suitable, for municipal or domestic water supply (MUN); and,

6. The Water Quality Control Plans do not provide sufficient detail in the description of water bodies designated MUN to judge clearly what is, or is not, a source of drinking water for various purposes.

THEREFORE BE IT RESOLVED:

All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards[1] with the exception of:

1. Surface and ground waters where:

   a. The total dissolved solids (TDS) exceed 3,000 mg/L (5,000 uS/cm, electrical conductivity) and it is not reasonably expected by Regional Boards to supply a public water system, or

b. There is contamination, either by natural processes by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices, or

c. The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

2. Surface waters where:

a. The water is in systems designed or modified to collect or treat municipal or industrial wastewaters, process waters, mining wastewaters, or storm water runoff, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards; or,

b. The water is in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards.

3. Ground water where:

The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 Code of Federal Regulations, Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR, Section 261.3.

4. Regional Board Authority to Amend Use Designations:

Any body of water which has a current specific designation previously assigned to it by a Regional Board in Water Quality Control Plans may retain that designation at the Regional Board's discretion. Where a body of water is not currently designated as MUN but, in the opinion of a Regional Board, is presently or potentially suitable for MUN, the Regional Board shall include MUN in the beneficial use designation.

The Regional Boards shall also assure that the beneficial uses of municipal and domestic supply are designated for protection wherever those uses are presently being attained, and assure that any changes in beneficial use designations for waters of the State are consistent with all applicable regulations adopted by the Environmental Protection Agency.

The Regional Boards shall review and revise the Water Quality Control Plans to incorporate this policy.

---

1 This policy does not affect any determination of what is a potential source of drinking water for the limited purposes of maintaining a surface impoundment after June 30, 1988, pursuant to Section 25208.4 of the Health and Safety Code.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a policy duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 19, 1988.

Maureen Marche
Administrative Assistant to the Board

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS
(National Pollutant Discharge Elimination System)

1 March 1991

A. GENERAL PROVISIONS

1. Any violation of this Order constitutes a violation of the Federal Clean Water Act (CWA) and the California Water Code (CWC) and, therefore, may result in enforcement action under either or both laws.

2. The CWA provides that any person who violates a portion of this Order implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who willfully or negligently violates this Order with regard to these sections of the CWA is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both.

3. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another; protect the Discharger from liability under federal, state, or local laws; or guarantee the Discharger a capacity right in the receiving waters.

4. The Discharger shall allow representatives of the Regional Water Quality Control Board (hereafter Board), the State Water Resources Control Board and the Environmental Protection Agency (hereafter EPA), upon presentation of credentials, at reasonable hours, to:

   a. enter premises where wastes are treated, stored, or discharged and facilities in which any required records are kept;

   b. copy any records required to be kept under terms and conditions of this Order;

   c. inspect facilities, monitoring equipment, practices, or operations regulated or required by this Order; and

   d. sample, photograph or video tape any discharge, waste, waste unit or monitoring device.

5. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by the California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, California Code of Regulations (CCR), Division 3, Chapter 14.

6. The Discharger shall at all times properly operate and maintain all facilities, and systems of treatment and control including sludge use and disposal facilities (and related appurtenances) that are installed or used to achieve compliance with this Order.

   Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger only when necessary to achieve compliance with this Order.

7. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

   a. violation of any term or condition contained in this Order;

   b. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

   c. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

   d. a material change in the character, location, or volume of discharge.

   The causes for modification include:

   a. **New regulations.** New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

   b. **Land application plans.** When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

c. **Change in sludge use or disposal practice.** Under 40 Code of Federal Regulations (CFR) 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Board may review and revise this Order at any time upon application of any affected person or the Board's own motion.

8. The filing of a request by the Discharger for modification, revocation and reissuance, or termination of this Order, or notification of planned changes or anticipated noncompliance, does not stay any condition of this Order.

   The Discharger shall furnish, within a reasonable time, any information the Board or EPA may request to determine compliance with this Order or whether cause exists for modifying or terminating this Order. The Discharger shall also furnish to the Board, upon request, copies of records required to be kept by this Order.

9. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

   The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, **even if this Order has not yet been modified.**

10. If more stringent applicable water quality standards are approved, pursuant to Section 303 of the CWA, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

11. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

    a. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

    b. controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

12. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

13. By-pass (the intentional diversion of waste streams from any portion of a treatment facility or collection system, except those portions designed to meet variable effluent limits) is prohibited except under the following conditions:

a. (1) by-pass was unavoidable to prevent loss of life, personal injury, or severe property damage; (severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a by-pass; severe property damage does not mean economic loss caused by delays in production;)

and

(2) there were no feasible alternatives to by-pass, such as the use of auxiliary treatment facilities or retention of untreated waste; this condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a by-pass that would otherwise occur during normal periods of equipment downtime or preventive maintenance;

or

b. (1) by-pass is required for essential maintenance to assure efficient operation;

and

(2) neither effluent nor receiving water limitations are exceeded;

and

(3) the Discharger notifies the Board ten days in advance.

The permittee shall submit notice of an unanticipated by-pass as required in paragraph B.1. below.

14. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, failure to implement an appropriate pretreatment program, or careless or improper action. A Discharger that wishes to establish the affirmative defense of an upset in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other evidence, that:

    a. an upset occurred due to identifiable cause(s);

    b. the permitted facility was being properly operated at the time of the upset;

    c. notice of the upset was submitted as required in paragraph B.1.; and

    d. remedial measures were implemented as required under paragraph A.17.

    In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof.

15. This Order is not transferable to any person except after notice to the Board. The Board may modify or revoke and reissue the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA.

16. Except for data determined to be confidential under Section 13267 of the CWC, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board and EPA. Effluent data are not confidential.

17. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge or sludge use or disposal.

18. The fact that it would have been necessary for the Discharger to halt or reduce the permitted activity in order to comply with this Order shall not be a defense for violating this Order.

19. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by EPA under Section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

20. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

21. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

22. Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the CWC, Section 13050.

B. GENERAL REPORTING REQUIREMENTS

1. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, daily maximum effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Board by telephone (916) 255-3000 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and, prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

2. Safeguard to electric power failure:

   a. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

   b. Upon written request by the Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Board.

c. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Board that the existing safeguards are inadequate, provide to the Board and EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Board, become a condition of this Order.

3. The Discharger, upon written request of the Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under B.2.

   The technical report shall:

   a. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

   b. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

   c. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

4. The Discharger shall file with the Board a Report of Waste Discharge at least 180 days before making any material change in the character, location, or volume of the discharge. A **material change** includes, but is not limited to, the following:

   a. Adding a major industrial waste discharge to a discharge of essentially domestic sewage, or adding a new process or product by an industrial facility resulting in a change in the character of the waste.

b. Significantly changing the disposal method or location, such as changing the disposal to another drainage area or water body.

c. Significantly changing the method of treatment.

d. Increasing the discharge flow beyond that specified in the Order.

5. A publicly owned treatment works (POTW) whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the Discharger shall notify the Board by **31 January.** A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Board may extend the time for submitting the report.

6. A manufacturing, commercial, mining, or silvicultural discharger shall notify the Board as soon as it knows or has reason to believe:

a. That any activity has occurred or will occur that would result in the discharge of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels":

(1) 100 micrograms per liter (μg/l);

(2) 200 μg/l for acrolein and acrylonitrile; 500 μg/l for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/l) for antimony;

(3) five times the maximum concentration value reported for that pollutant in the Report of Waste Discharge; or

(4) the level established by the Board in accordance with 40 CFR 122.44(f).

b. That it expects to begin to use or manufacture, as an intermediate or final product or by-product, any toxic pollutant that was not reported in the Report of Waste Discharge.

7. A POTW shall provide adequate notice to the Board of:

   a. any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants, and

   b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order.

   c. Any planned physical alterations or additions to the permitted facility, or changes planned in the Discharger's sludge use or disposal practice, where such alterations, additions, or changes may justify the application of permit conditions that are different from or absent in the existing permit including notification of additional disposal sites not reported during the permit application process, or not reported pursuant to an approved land application plan.

   Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

8. The Discharger shall give advance notice to the Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order.

9. The Discharger shall submit technical reports as directed by the Executive Officer.

10. Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both.

C. PROVISIONS FOR MONITORING

1. All analyses shall be performed in accordance with the latest edition of *Guidelines Establishing Test Procedures for Analysis of Pollutants*, promulgated by EPA (40 CFR 136) or other procedures approved by the Board.

2. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a

noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Board staff. The Quality Assurance-Quality Control Program must conform to EPA guidelines or to procedures approved by the Board.

Unless otherwise specified, all metals shall be reported as Total Metals.

Unless otherwise specified, bioassays shall be performed in the following manner:

a. Acute bioassays shall be performed in accordance with guidelines approved by the Board and the Department of Fish and Game or in accordance with methods described in EPA's manual for measuring acute toxicity of effluents (EPA/620/4-85/013 and subsequent amendments).

b. Short-term chronic bioassays shall be performed in accordance with EPA guidelines (EPA/600/4-89/001 and subsequent amendments).

3. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Board and EPA.

4. The Discharger shall conduct analysis on any sample provided by EPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to EPA's DMQA manager.

5. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

6. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.

7. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or be imprisoned for not more than two years per violation, or by both.

8. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of

continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

9. The records of monitoring information shall include:

   a. the date, exact place, and time of sampling or measurements,
   b. the individual(s) who performed the sampling of measurements,
   c. the date(s) analyses were performed,
   d. the individual(s) who performed the analyses,
   e. the laboratory which performed the analyses,
   f. the analytical techniques or methods used, and
   g. the results of such analyses.

D. REPORTING REQUIREMENTS FOR MONITORING

1. The Discharger shall file with the Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.

2. Monitoring reports shall be submitted on forms to be supplied by the Board to the extent that the information reported may be entered on the forms. Alternate forms may be approved for use by the Board.

3. The results of all monitoring required by this Order shall be reported to the Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

4. The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in the Monitoring and Reporting Program, shall be reported to the Board and used in determining compliance.

5. Upon written request of the Board, the Discharger shall submit a summary monitoring report to the Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

6. All reports shall be signed by a person identified below:

   a. **For a corporation:** by a principal executive officer of at least the level of senior vice-president.

   b. **For a partnership or sole proprietorship:** by a general partner or the proprietor, respectively.

   c. **For a municipality, state, federal or other public agency:** by either a principal executive officer or ranking elected or appointed official. Monitoring reports must also be signed by the chief plant operator and if the chief plant operator is not in the direct line of supervision of the laboratory function, the chief of the laboratory also.

   d. A duly authorized representative of a person designated in 6a, 6b or 6c of this requirement if;

      (1) the authorization is made in writing by a person described in 6a, 6b, or 6c of this provision,

      (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position), and

      (3) the written authorization is submitted to the Board.

Each person signing a report required by this Order or other information requested by the Board shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The Discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

In addition, dischargers designated as a "major" discharger shall transmit a copy of all monitoring reports to EPA (see address in Provision G.10).

E. DEFINITIONS:

1. The **daily discharge rate** is obtained from the following calculation for any calendar day:

$$\text{Daily discharge rate (lbs/day)} = \frac{8.34}{N} \sum_{1}^{N} Q_i C_i$$

In which N is the number of samples analyzed in a day. Q_i and C_i are the flow rate (mgd) and the constituent concentration (mg/l), respectively, which are associated with each of the N grab samples which may be taken in a day. If a composite sample is taken, C_i is the concentration measured in the composite sample and Q_i is the average flow rate occurring during the period over which samples are composited.

2. The **monthly or weekly average discharge rate** is the total of daily discharge rates during a calendar month or week, divided by the number of days in the month or week that the facility was discharging.

   Where less than daily sampling is required by this permit, the monthly or weekly average discharge rate shall be determined by the summation of all the daily discharge rates divided by the number of days during the month or week for which the rates are available.

   For other than weekly or monthly periods, compliance shall be based upon the average of all rates available during the specified period.

3. The **monthly or weekly average concentration** is the arithmetic mean of measurements made during a calendar month or week, respectively.

4. The **daily maximum discharge rate** means the total discharge by weight during one day.

5. The **daily maximum concentration** is the greatest concentration found in grab or composite samples analyzed for one day.

6. A **grab sample** is an individual sample collected in less than 15 minutes.

7. Unless otherwise specified, a **composite sample** is a combination of individual samples collected over the specified sampling period:

   a. at equal time intervals, with a maximum interval of one hour, and

   b. at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow.

   The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results.

8. **Sludge** means the solids, residues, and precipitates separated from, or created in, wastewater by the unit processes of a treatment system.

9. **Median** is the value below which half the samples (ranked progressively by increasing value) fall. It may be considered the middle value, or the average of the two middle values.

10. **Overflow** means the intentional or unintentional diversion of flow from the collection and transport systems, including pumping facilities.

F. **PRETREATMENT PROGRAM REQUIREMENTS** (Applies to dischargers required to establish pretreatment programs by this Order.)

The Discharger shall be responsible for the performance of all pretreatment requirements contained in 40 CFR Part 403 and shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. Environmental Protection Agency (EPA), or other appropriate parties, as provided in the Clean Water Act, as amended (33 USC 1351 et seq.) (hereafter Act).

The Discharger shall implement and enforce its Approved publicly owned treatment works (POTW) Pretreatment Program. The Discharger's Approved POTW Pretreatment Program is hereby made an enforceable condition of this permit. EPA may

initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Act.

The Discharger shall enforce the requirements promulgated under Sections 307(b), (c), and (d) and Section 402(b) of the Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

1. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 including, but not limited to:

   a. Implement the necessary legal authorities as provided in 40 CFR 403.8(f)(1).

   b. Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6.

   c. Implement the programmatic functions as provided in 40 CFR 403.8(f)(2), in particular, the publishing of a list of significant violators.

   d. Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3).

G. **ANNUAL PRETREATMENT REPORT REQUIREMENTS** (Applies to dischargers required to establish pretreatment programs by this Order.)

The Discharger shall submit annually a report to the Regional Board, with copies to EPA Region 9 and the State Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

An annual report shall be submitted by **28 February** or as otherwise specified in the Order and include at least the following items:

1. A summary of analytical results from representative, flow-proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants EPA has identified under Section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

The Discharger is not required to sample and analyze for asbestos until EPA promulgates an applicable analytical technique under 40 CFR 136. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto.

2. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

3. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

4. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

   a. complied with baseline monitoring report requirements (where applicable);

   b. consistently achieved compliance;

   c. inconsistently achieved compliance;

d. significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

e. complied with schedule to achieve compliance (include the date final compliance is required);

f. did not achieve compliance and not on a compliance schedule; and

g. compliance status unknown.

A report describing the compliance status of each industrial user characterized by the descriptions in items c. through g. above shall be submitted for each calendar quarter **within 21 days of the end of the quarter.** The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly reporting requirement shall commence upon issuance of this Order.

5. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:

   a. the names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and

   b. the conclusions or results from the inspection or sampling of each industrial user.

6. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

   a. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.

b. Administrative orders regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

c. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

d. Criminal actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

e. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.

f. Restriction of flow to the POTW.

g. Disconnection from discharge to the POTW.

7. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

8. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

9. A copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If no notice was published, explain why.

10. A description of any changes in sludge disposal methods and discussion of any concerns not described elsewhere in the report.

Duplicate signed copies of these reports shall be submitted to the Board and the

State Water Resources Control Board
Division of Water Quality
Regulatory Unit
P.O. Box 944213
Sacramento, CA 94244-2130

and the

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

Revised March 1993 to update phone number of Central Valley Regional Board
Revised December 1995 to update signatory requirements (D.6.c)

# # # #

APPENDIX 15-2

NOP COMMENTS

State of California

GOVERNOR'S OFFICE OF PLANNING AND RESEARCH

1400 TENTH STREET
SACRAMENTO 95814

PETE WILSON
GOVERNOR

LEE GRISSOM
DIRECTOR

RECEIVED
AUG 05 1996
PLANNING SERVICES

DATE: July 30, 1996

TO: Reviewing Agencies

RE: COMBINED SEWER SYSTEM IMPROVEMENT AND REHABILITATION PLAN
SCH# 96072100

Attached for your comment is the Notice of Preparation for the COMBINED SEWER SYSTEM IMPROVEMENT AND REHABILITATION PLAN draft Environmental Impact Report (EIR).

Responsible agencies must transmit their concerns and comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

JOE BRAODHEAD
CITY OF SACRAMENTO
1231 I STREET, ROOM 301
SACRAMENTO, CA 95814

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Kristen Derscheid at (916) 445-0613.

Sincerely,

Antero A. Rivasplata

ANTERO A. RIVASPLATA
Chief, State Clearinghouse

Attachments

cc: Lead Agency

S = sent by lead agency
X = sent by SCH

Resources Agency

- [X] **Nadell Gayou**, *Resources Agency*, 1020 Ninth Street, Third Floor, Sacramento, CA 95814, 916/327-1722 Fax 916/327-1648
- [ ] **Nicole Leirla**, *Dept. of Boating & Waterways*, 1629 S Street, Sacramento, CA 95814, 916/445-6281 916/327-7250
- [ ] **Elizabeth A. Fuchs**, *California Coastal Commission*, 45 Fremont Street, Suite 1970, San Francisco, CA 94105-2219, 415/904-5200 Fax 415/904-5400
- [ ] **Reed Holderman**, *State Coastal Conservancy*, 1330 Broadway, Suite 1100, Oakland, CA 94612, 510/286-1015 Fax 510/286-0470
- [X] **Keren Yowell**, *Dept. of Conservation*, 801 K Street, MS-24-02, Sacramento, CA 95814, 916/445-8733 Fax 916/324-0948
- [ ] **Dale Wierman**, *Dept. of Forestry*, 1416 Ninth Street, Room 1516-2, Sacramento, CA 95814, 916/653-9451 Fax 916/653-0989
- [ ] **Hans Kreutzberg**, *Office of Historic Preservation*, P.O. Box 942896, Sacramento, CA 94296-0001, 916/653-9107 Fax 916/653-9824
- [X] **Ken Pierce**, *Dept. of Parks and Recreation*, P.O. Box 942896, Sacramento, CA 94296-0001, 916/653-0538
- [ ] **Wendy Halverson-Martin**, *Reclamation Board*, 1020 Ninth Street, Room 240, Sacramento, CA 95814, 916/327-1531 Fax 916/327-1600
- [ ] **Steve McAdam**, *S.F. Bay Conservation & Dev't. Comm.*, 30 Van Ness Avenue, Room 2011, San Francisco, CA 94102, 415/557-3686 Fax 415/557-3767
- [X] **Nadell Gayou**, *Department of Water Resources*, 1020 Ninth Street, Third Floor, Sacramento, CA 95814, 916/327-1722 Fax 916/327-1648

Health & Welfare

- [ ] **Kim Dinh**, *Dept. of Health*, 601 N. 7th Street, PO Box 942732, Sacramento, CA 94234-7320, 916/323-6111 Fax 916/327-6092

Fish and Game - Regional Offices

- [ ] **Richard L. Elliott**, Regional Manager, Department of Fish and Game, 601 Locust, Redding, CA 96001, 916/225-2363 Fax 916/225-2381
- [X] **Ryan Broddrick**, Regional Manager, Department of Fish & Game, 1701 Nimbus Road, Suite A, Rancho Cordova, CA 95670, 916/358-2900 Fax 916/358-2912
- [ ] **Ken Aasen**, Acting Regional Manager, Department of Fish and Game, P.O. Box 47, Yountville, CA 94599, 707/944-5518 Fax 707/944-5563
- [ ] **George Nokes**, Regional Manager, Department of Fish and Game, 1234 East Shaw Avenue, Fresno, CA 93710, 209/445-6152 Fax 209/445-6607
- [ ] **Department of Fish and Game**, *Environmental Services*, 330 Golden Shore, Suite 50, Long Beach, CA 90802, 310/590-5132 Fax 310/590-5192

Independent Commissions/Agencies

- [ ] **California Energy Commission**, 1516 Ninth Street, MS-15, Sacramento, CA 95814, 916/654-3944
- [X] **Native American Heritage Comm.**, 915 Capitol Mall, Room 364, Sacramento, CA 95814, 916/653-4082 Fax 916/657-5390
- [ ] **Douglas Long**, *Public Utilities Commission*, 505 Van Ness Avenue, San Francisco, CA 94102, 415/703-2011 Fax 415/703-1965
- [X] **Betty Silva**, *State Lands Commission*, 100 Howe Avenue, Suite 100-S, Sacramento, CA 95826, 916/574-1872 Fax 916/574-1885
- [ ] **Gerald R. Zimmerman**, *Colorado River Board*, 770 Fairmont Avenue, Suite 100, Glendale, CA 91203-1035, 818/543-4676 Fax 818/543-543-4685
- [ ] **Tahoe Regional Planning**, *Environmental Review*, P.O. Box 1038, Zephyr Cove, NV 89448, 702/588-4547 Fax 702/588-4527
- [ ] **Thomas Otteman**, *Office of Emergency Services*, P.O. Box 29998, San Francisco, CA 94129, 415/666-9300
- [ ] **Debby Eddy**, *Delta Protection Commission*, P.O. Box 530, Walnut Grove, CA 95690, 916/776-2290 FAX 776-2293

Department of Transportation District Contacts

- [ ] **Martin Urkofsky**, *Caltrans, District 1*, 1656 Union Street, Eureka, CA 95501, 707/445-5812 Fax 707/445-5869
- [ ] **Gary Otremba**, *Caltrans, District 2*, P.O. Box 494040, Redding, CA 96049-4040, 916/225-3133 Fax 916/225-3146
- [X] **Jeff Pulverman**, *Caltrans, District 3*, 703 B Street, Marysville, CA 95901, 916/327-3859 Fax 916/323-7669
- [ ] **Gary F. Adams**, *Caltrans, District 4*, P.O. Box 23660, Oakland, CA 94623-0660, 510/286-5578 Fax 510/286-5513
- [ ] **Lawrence Newland**, *Caltrans, District 5*, P.O. Box 8114, San Luis Obispo, CA 93403-8114, 805/549-3683 Fax 805/549-3077
- [ ] **Marc Birnbaum**, *Caltrans, District 6*, P.O. Box 12616, Fresno, CA 93778-2616, 209/448-4088 Fax 209/488-4101
- [ ] **Stephen J. Buswell**, *Caltrans, District 7*, 120 South Spring Street, Los Angeles, CA 90012, 213/897-4429 Fax 213/897-4358
- [ ] **Harvey Sawyer**, *Caltrans, District 8*, P.O. Box 231, San Bernardino, CA 92402, 909/383-4808 Fax 909/383-7934
- [ ] **Robert Ruhnke**, *Caltrans, District 9*, 500 South Main Street, Bishop, CA 93514, 619/872-0689 Fax 619/872-0678
- [ ] **Dana Cowell**, *Caltrans, District 10*, P.O. Box 2048, Stockton, CA 95201, 209/948-7906 Fax 209/948-7906
- [ ] **Lon Salazar**, *Caltrans, District 11*, P.O. Box 85406, MS S-5, 2829 Juan Street, San Diego, CA 92186-5406, 619/688-6002 Fax 619/688-2511
- [ ] **Aileen Kennedy**, *Caltrans, District 12*, 2501 Pullman St, Santa Ana, CA 92705, 714/724-2239 Fax 714/724-2592

Business, Transportation, & Housing

- [ ] **Sandy Hesnard**, *Caltrans - Division of Aeronautics*, P.O. Box 942874, Sacramento, CA 94274-0001, 916/324-1833 Fax 916/327-9093
- [ ] **Alice Huffaker**, *California Highway Patrol*, Office of Special Projects, Planning and Analysis Division, 2555 1st Ave, Sacramento, CA 95818, 916/657-7222 Fax 916/452-3151
- [ ] **Ron Helgeson**, *Caltrans - Planning*, P.O. Box 942874, Sacramento, CA 94274-0001, 916/653-9966 Fax 916/653-0001

State and Consumer Services

- [ ] **Robert Sleppy**, *Dept. of General Services*, 400 R Street, Suite 5100, Sacramento, CA 95814, 916/324-0214 Fax 916/322-3987
- [ ] **Office of Local Assistance**, 501 J Street, Suite 400, Sacramento, CA 95814, 916/445-3160

California Environmental Protection Agency

- [ ] **Mike Tollstrup**, *Air Resources Board*, 2020 L Street, Sacramento, CA 95815, 916/322-8267 Fax 916/322-5982
- [ ] **Mark deBie**, *Calif. Waste Management Board*, 8800 Cal Center Drive, Sacramento, CA 95826, 916/255-4164 Fax 916/255-4071
- [ ] **Wayne Hubbard**, *State Water Resources Control Board*, *Division of Clean Water Programs*, P.O. Box 944212, Sacramento, CA 94244-2120, 916/227-4408 Fax 916/227-4549
- [ ] **Phil Zentner**, *State Water Resources Control Board*, *Division of Water Quality*, P.O. Box 944213, Sacramento, CA 94244-2130, 916/657-0912 Fax 916/657-2388
- [ ] **Mike Falkenstein**, *State Water Resouces Control Board*, *Division of Water Rights*, 901 P Street, 3rd Floor, Sacramento, CA 95814, 916/657-1377 Fax 916/657-1485
- [ ] **Dept. of Toxic Substances Control**, *CEQA Tracking Center*, 400 P Street, Fourth Floor, P.O. Box 806, Sacramento, CA 95812-0806, 916/324-3119 Fax 916/324-1788

Regional Water Quality Control Board

- [ ] NORTH COAST REGION (1), 5550 Skyline Blvd., Suite A, Santa Rosa, CA 95403, 707/576-2220 Fax 707/523-0135
- [ ] SAN FRANCISCO BAY REGION (2), 2101 Webster, Suite 500, Oakland, CA 94612, 510/286-1255 Fax 510/286-1380
- [ ] CENTRAL COAST REGION (3), 81 Higuera Street, Suite 200, San Luis Obispo, CA 93401-5427, 805/549-3147 Fax 805/543-0397
- [ ] LOS ANGELES REGION (4), 101 Centre Plaza Drive, Monterey Park, CA 91754-2156, 213/266-7556 Fax 213/266-7600
- [X] CENTRAL VALLEY REGION (5), 3443 Routier Road, Suite A, Sacramento, CA 95827-3098, 916/255-3000 Fax 916/255-3015
  - ( ) **Fresno Branch Office**, 3614 East Ashlan Avenue, Fresno, CA 93726, 209/445-5116 Fax 209/445-5910
  - ( ) **Redding Branch Office**, 415 Knollcrest Drive, Redding, CA 96002, 916/224-4845 Fax 916/224-4857
- [ ] LAHONTAN REGION (6), 2092 Lake Tahoe Boulevard, South Lake Tahoe, CA 96150, 916/542-5400 Fax 916/544-2271
  - ( ) **Victorville Branch Office**, 15428 Civic Drive, Suite 100, Victorville, CA 92392-2359, 619/241-6583 Fax 619/241-7308
- [ ] COLORADO RIVER BASIN REGION (7), 73720 Fred Waring Drive, #100, Palm Desert, CA 92260-2564, 619/346-7491 Fax 619/341-6820
- [ ] SANTA ANA REGION (8), 3737 Main Street, Suite 500, Riverside, CA 92501-3339, 714/782-4130 Fax 909/781-6288
- [ ] SAN DIEGO REGION (9), 9771 Clairemont Mesa Blvd., Suite B, San Diego, CA 92124-1331, 619/467-2952 Fax 619/571-6972
- [ ] OTHER ________
- [ ] OTHER ________

AMERICAN RIVER FLOOD CONTROL DISTRICT
165 COMMERCE CIRCLE, SUITE D, SACRAMENTO, CALIFORNIA 95815

(916) 929-4006
(916) 929-4160 (FAX)

August 20, 1996

Mr. Joe Broadhead, EIR Project Manager
City Planning Department
1231 "I" Street, Room 300
Sacramento, CA. 95814

Subject: Notice of Availability - Notice of Preparation/Initial Study Combined Sewer System

Dear Mr. Broadhead:

The extent of the Combined Sewer System Project is such that it is expected that the project will entail extensive modification of existing public facilities as well as construction of new sewer facilities.

To whatever extent this project involves modifications of existing facilities or construction of new facilities that encroach on lands or flood control facilities under the jurisdictional authority of American River Flood Control District, such modification or construction of new facilities will be permissible only under permits obtained from the District, and concurrently from the California Reclamation Board. Appropriate permit application forms are available from either agency, along with standards that will be utilized in making the administrative decisions regarding issuance of the permits.

The need for such permits and information regarding applicable standards should be noted in any environmental documentation produced for the project.

Sincerely
AMERICAN RIVER FLOOD CONTROL DISTRICT

Ted A. Smith

Ted A. Smith
General Manager

cc: *Ricardo Pineda, Calif. Recl. Bd.*
Ward Tabor, Calif. Recl. Bd.

STATE OF CALIFORNIA—THE RESOURCES AGENCY

PETE WILSON, *Governor*

THE RECLAMATION BOARD
116 Ninth Street, Room 1148
Sacramento, CA 95814-5509
(916) 653-5434 FAX: (916) 653-9745
Permits: (916) 653-5726 FAX: (916) 653-5805

AUG 15 1996

RECEIVED
AUG 20 1996
PLANNING SERVICES

Mr. Joe Broadhead, EIR Project Manager
City of Sacramento
Planning Services Division
1231 I Street, Room 300
Sacramento, California 95814

Dear Mr. Broadhead:

We have reviewed the notice of preparation/initial study for the Combined Sewer System project at various locations in the City of Sacramento, and we have the following comments:

The City of Sacramento contains floodways and levees over which The Reclamation Board has jurisdiction; therefore, a Reclamation Board permit must be obtained prior to start of any work, including excavation and construction activities, within these areas, as required by Section 8710 of the California Water Code.

Also, the Board permits only limited activities within the floodways and levees during the flood season from November 1 to April 15.

Thank you for the opportunity to comment. For further information, you may contact Carol Calton at the above address or telephone (916) 653-9898.

Sincerely,

Samuel Brandon
FOR

I-Ming Cheng, Acting Chief
Floodway Protection Section

PETE WILSON
GOVERNOR

State of California

GOVERNOR'S OFFICE OF PLANNING AND RESEARCH
1400 TENTH STREET
SACRAMENTO 95814

LEE GRISSOM
DIRECTOR

RECEIVED
AUG 0 9 1996
PLANNING SERVICES

DATE: August 6, 1996

TO: Reviewing Agencies

RE: COMBINED SEWER SYSTEM
SCH# 96082013

Attached for your comment is the Notice of Preparation for the COMBINED SEWER SYSTEM draft Environmental Impact Report (EIR).

Responsible agencies must transmit their concerns and comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

JOE BROADHEAD
CITY OF SACRAMENTO
1231 I STREET
SACRAEMTNO, CA 95814-2904

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Kristen Derscheid at (916) 445-0613.

Sincerely,

Antero A. Rivasplata

ANTERO A. RIVASPLATA
Chief, State Clearinghouse

Attachments

cc: Lead Agency

S = sent by lead agency
X = sent by SCH

SCH # ______

Resources Agency

[X] **Nadell Gayou**
Resources Agency
1020 Ninth Street, Third Floor
Sacramento, CA 95814
916/327-1722 Fax 916/327-1648

[ ] **Nicole Leiria**
Dept. of Boating & Waterways
1629 S Street
Sacramento, CA 95814
916/445-6281 916/327-7250

[ ] **Elizabeth A. Fuchs**
California Coastal Commission
45 Fremont Street, Suite 1970
San Francisco, CA 94105-2219
415/904-5200 Fax 415/904-5400

[ ] **Reed Holderman**
State Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612
510/286-1015 Fax 510/286-0470

[X] **Keren Yowell**
Dept. of Conservation
801 K Street, MS-24-02
Sacramento, CA 95814
916/445-8733 Fax 916/324-0948

[ ] **Dale Wierman**
Dept. of Forestry
1416 Ninth Street, Room 1516-2
Sacramento, CA 95814
916/653-9451 Fax 916/653-0989

[ ] **Hans Kreutzberg**
Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001
916/653-9107 Fax 916/653-9824

[X] **Ken Pierce**
Dept. of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001
916/653-0538

[ ] **Wendy Halverson-Martin**
Reclamation Board
1020 Ninth Street, Room 240
Sacramento, CA 95814
916/327-1531 Fax 916/327-1600

[ ] **Steve McAdam**
S.F. Bay Conservation & Dev't Comm
30 Van Ness Avenue, Room 2011
San Francisco, CA 94102
415/557-3686 Fax 415/557-3767

[X] **Nadell Gayou**
Department of Water Resources
1020 Ninth Street, Third Floor
Sacramento, CA 95814
916/327-1722 Fax 916/327-1648

Health & Welfare

[ ] **Kim Dinh**
Dept. of Health
601 N. 7th Street, PO Box 942732
Sacramento, CA 94234-7320
916/323-6111 Fax 916/327-6092

Fish and Game - Regional Offices

[ ] **Richard L. Elliott**, Regional Manager
Department of Fish and Game
601 Locust
Redding, CA 96001
916/225-2363 Fax 916/225-2381

[X] **Ryan Broddrick**, Regional Manager
Department of Fish & Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
916/358-2900 Fax 916/358-2912

[ ] **Ken Aasen**, Acting Regional Manager
Department of Fish and Game
P.O. Box 47
Yountville, CA 94599
707/944-5518 Fax 707/944-5563

[ ] **George Nokes**, Regional Manager
Department of Fish and Game
1234 East Shaw Avenue
Fresno, CA 93710
209/445-6152 Fax 209/445-6607

[ ] **Department of Fish and Game**
Environmental Services
330 Golden Shore, Suite 50
Long Beach, CA 90802
310/590-5132 Fax 310/590-5192

Independent Commissions/Agencies

[ ] **California Energy Commission**
1516 Ninth Street, MS-15
Sacramento, CA 95814
916/654-3944

[X] **Native American Heritage Comm.**
915 Capitol Mall, Room 364
Sacramento, CA 95814
916/653-4082 Fax 916/657-5390

[ ] **Douglas Long**
Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
415/703-2011 Fax 415/703-1965

[X] **Betty Silva**
State Lands Commission
100 Howe Avenue, Suite 100-S
Sacramento, CA 95826
916/574-1872 Fax 916/574-1885

[ ] **Gerald R. Zimmerman**
Colorado River Board
770 Fairmont Avenue, Suite 100
Glendale, CA 91203-1035
818/543-4676 Fax 818/543-543-4685

[ ] **Tahoe Regional Planning**
Environmental Review
P.O. Box 1038
Zephyr Cove, NV 89448
702/588-4547 Fax 702/588-4527

[ ] **Thomas Ottoman**
Office of Emergency Services
P.O Box 29998
San Francisco, CA 94129
415/666-9300

[ ] **Debby Eddy**
Delta Protection Commission
P.O Box 530
Walnut Grove, CA 95690
916/776-2290 FAX 776-2293

Department of Transportation District Contacts

[ ] **Martin Urkofsky**
Caltrans, District 1
1656 Union Street
Eureka, CA 95501
707/445-5812 Fax 707/445-5869

[ ] **Gary Otremba**
Caltrans, District 2
P.O. Box 494040
Redding, CA 96049-4040
916/225-3133 Fax 916/225-3146

[X] **Jeff Pulverman**
Caltrans, District 3
703 B Street
Marysville, CA 95901
916/327-3859 Fax 916/323-7669

[ ] **Gary F. Adams**
Caltrans, District 4
P.O. Box 23660
Oakland, CA 94623-0660
510/286-5578 Fax 510/286-5513

[ ] **Lawrence Newland**
Caltrans, District 5
P.O. Box 8114
San Luis Obispo, CA 93403-8114
805/549-3683 Fax 805/549-3077

[ ] **Marc Birnbaum**
Caltrans, District 6
P.O. Box 12616
Fresno, CA 93778-2616
209/448-4088 Fax 209/488-4101

[ ] **Stephen J. Buswell**
Caltrans, District 7
120 South Spring Street
Los Angeles, CA 90012
213/897-4429 Fax 213/897-4358

[ ] **Harvey Sawyer**
Caltrans, District 8
P.O. Box 231
San Bernardino, CA 92402
909/383-4808 Fax 909/383-7934

[ ] **Robert Ruhnke**
Caltrans, District 9
500 South Main Street
Bishop, CA 93514
619/872-0689 Fax 619/872-0678

[ ] **Dana Cowell**
Caltrans, District 10
P.O. Box 2048
Stockton, CA 95201
209/948-7906 Fax 209/948-7906

[ ] **Lou Salazar**
Caltrans, District 11
P.O. Box 85406, MS S-5
2829 Juan Street
San Diego, CA 92186-5406
619/688-6002 Fax 619/688-2511

[ ] **Aileen Kennedy**
Caltrans, District 12
2501 Pullman St
Santa Ana, CA 92705
714/724-2239 Fax 714/724-2592

Business, Transportation, & Housing

[ ] **Sandy Hesnard**
Caltrans - Division of Aeronautics
P.O. Box 942874
Sacramento, CA 94274-0001
916/324-1833 Fax 916/327-9093

[ ] **Alice Huffaker**
California Highway Patrol
Office of Special Projects
Planning and Analysis Division
2555 1st Ave
Sacramento, CA 95818
916/657-7222 Fax 916/452-3151

[ ] **Ron Helgeson**
Caltrans - Planning
P.O. Box 942874
Sacramento, CA 94274-0001
916/653-9966 Fax 916/653-0001

State and Consumer Services

[ ] **Robert Sleppy**
Dept. of General Services
400 R Street, Suite 5100
Sacramento, CA 95814
916/324-0214 Fax 916/322-3987

[ ] **Office of Local Assistance**
501 J Street, Suite 400
Sacramento, CA 95814
916/445-3160

California Environmental Protection Agency

[ ] **Mike Tollstrup**
Air Resources Board
2020 L Street
Sacramento, CA 95815
916/322-8267 Fax 916/322-5982

[ ] **Mark deBie**
Calif. Waste Management Board
8800 Cal Center Drive
Sacramento, CA 95826
916/255-4164 Fax 916/255-4071

[ ] **Wayne Hubbard**
State Water Resources Control Board
Division of Clean Water Programs
P.O. Box 944212
Sacramento, CA 94244-2120
916/227-4408 Fax 916/227-4549

[ ] **Phil Zentner**
State Water Resources Control Board
Division of Water Quality
P.O. Box 944213
Sacramento, CA 94244-2130
916/657-0912 Fax 916/657-2388

[ ] **Mike Falkenstein**
State Water Resouces Control Board
Division of Water Rights
901 P Street, 3rd Floor
Sacramento, CA 95814
916/657-1377 Fax 916/657-1485

[ ] **Dept. of Toxic Substances Control**
CEQA Tracking Center
400 P Street, Fourth Floor
P.O Box 806
Sacramento, CA 95812-0806
916/324-3119 Fax 916/324-1788

Regional Water Quality Control Board

[ ] NORTH COAST REGION (1)
5550 Skyline Blvd Suite A
Santa Rosa, CA 95403
707/576-2220 Fax 707/523-0135

[ ] SAN FRANCISCO BAY REGION (2)
2101 Webster, Suite 500
Oakland, CA 94612
510/286-1255 Fax 510/286-1380

[ ] CENTRAL COAST REGION (3)
81 Higuera Street, Suite 200
San Luis Obispo, CA 93401-5427
805/549-3147 Fax 805/543-0397

[ ] LOS ANGELES REGION (4)
101 Centre Plaza Drive
Monterey Park, CA 91754-2156
213/266-7556 Fax 213/266-7600

[X] CENTRAL VALLEY REGION (5)
3443 Routier Road, Suite A
Sacramento, CA 95827-3098
916/255-3000 Fax 916/255-3015

( ) **Fresno Branch Office**
3614 East Ashlan Avenue
Fresno, CA 93726
209/445-5116 Fax 209/445-5910

( ) **Redding Branch Office**
415 Knollcrest Drive
Redding, CA 96002
916/224-4845 Fax 916/224-4857

[ ] LAHONTAN REGION (6)
2092 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150
916/542-5400 Fax 916/544-2271

( ) **Victorville Branch Office**
15428 Civic Drive; Suite 100
Victorville, CA 92392-2359
619/241-6583 Fax 619/241-7308

[ ] COLORADO RIVER BASIN REGION (7)
73720 Fred Waring Drive, #100
Palm Desert, CA 92260-2564
619/346-7491 Fax 619/341-6820

[ ] SANTA ANA REGION (8)
3737 Main Street, Suite 500
Riverside, CA 92501-3339
714/782-4130 Fax 909/781-6288

[ ] SAN DIEGO REGION (9)
9771 Clairemont Mesa Blvd., Suite B
San Diego, CA 92124-1331
619/467-2952 Fax 619/571-6972

[ ] OTHER ______

[ ] OTHER ______

SCH 6/6/96

LPCA

LAND PARK COMMUNITY ASSOCIATION

August 28, 1996

RECEIVED
AUG 28 1996
PLANNING SERVICES

Mr. Joseph Broadhead, Project Manager
City of Sacramento
Department of Planning and Development
Environmental Services Division
1231 I Street, Room 301
Sacramento, CA 95814

Dear Mr. Broadhead

The Land Park Community Association has reviewed:

A Notice of Availability - Combined Sewer System (CSS) Notice of Preparation/Initial Study, July 30, 1996

B Initial Study - Combined Sewer System Improvements and Rehabilitation Plan, July 30, 1996

C Notice of Preparation of a Draft Environmental Impact Report for the Combined Sewer System Improvements and Rehabilitation Plan, July 30, 1996

D 27 March 1996 letter from Kenneth D. Landau to Mr. Gary Reents and Ms. Cheryl Creson on "Transmittal of Adopted/Amended Waste Discharge Requirements, and Rescission of Cease and Desist Orders", with enclosures

We generally agree with the proposed scope of the EIR. The following paragraphs contain our requirements for it. Most of them are in the context of CEQA Guidelines Section 15131. Our comments on document B also apply to C, which is included in B.

The EIR must be complete, readable and not unnecessarily long or technical, so that people impacted by the project can read and understand it. The references to the Standard Specifications for Public Works and ASTM on Page 15 and in other parts of B would be inappropriate. They would be confusing to the public and imply a false sense of completeness.

Make the project "Objectives" listed on Page 9 of B completely consistent with Item 10 and the other parts of Order No. 96-090 (in D). The "Objectives" appear to be less

P.O. Box 188285 • Sacramento, California 95818-8285

specific than the order.

Include Item 9 of Order 96-090 on the public risk assessment rather than the discussion on Page 3 of B. The State Department of Health agreed with the Regional Board that the results of the assessment study were inconclusive.

Rewrite the first paragraph on Page 2 of B before using it in the EIR. Correct the inference, near the end of it, that outflows only effect streets and below ground basements. Outflows routinely inundate lawns within and around William Land Park, which is located in the lowest part of the combined sewer system. In the winter of 1994-95 there were outflows from plumbing in buildings at Holy Spirit School, the condition described in the middle of the paragraph.

Include an evaluation of the public health aspects of the outflows discussed on Pages 4-232 through 239 of the Final EIR for Zoo - 2002. Consider that the zoo animals are exotic and some, if not all, are quarantined. Include the mitigation measures listed by the Department of Public Works and give a specific schedule for constructing them.

Identify in the project description, the "six wet areas" mentioned near the bottom of Page 17 of B. Describe the Department of Utilities" "Project Priority Ranking System for Flood Reduction in the Combined Sewer System". Reconcile both of them with Item 4 on Page 7 and Items 3 and 4 on Page 8 of B.

Discuss air quality aspects of both Phases 1 and 2. Councilman Jimmie Yee says that he receives many complaints about odors from the CWTP at South Land Park Drive and Semas Avenue. Admit the well known fact that handling and treatment of intermittent sewage flows is extremely difficult. List mitigation measures to be constructed as part of the project and develop a mitigation monitoring program. In the latter, require that a reserve for retrofitting to abate odors be included in the project budget. In the "Early Response Action Plan" discussed on Page 9 of B, provide a phone number for neighbor's to call to have odors promptly abated.

Discuss long term noise impacts of both phases. Provide mitigation and mitigation monitoring similar to that described above for odors.

Analyze and discuss the hazards presented by the Unocal and Chevron facilities next to Pioneer Reservoir and construction adjacent to the high pressure pipelines under Broadway, R Street and other streets.

Evaluate and discuss aesthetics to assure that there are no negative affects in either phase, at locations in the middle of residential neighborhoods like Sump 2. Expand the requirement, on Pages 33 and 34 of B, for review of modification of all structures at such locations by the Design Review and Preservation Board, not just the historically significant ones.

Sump 2 is at the northwest corner of Riverside Blvd. and 11th Avenue and not on the southwest corner (Page 2 of B) or the southwest corner of Riverside Blvd. and 10th <u>Street</u> (Page 33 of B).

The statement in (i) on Page 19 of B, that the City does not rely on ground water for its source of public water supply is somewhat misleading. Groundwater is used in lieu of treated water for park irrigation.

The statements on Page 26 of B that the primary energy consumption of Phase 2 will be construction activities and on Page 30 of B that Phase 2 will not include engines, motors and other power devises conflicts with Item 2 on Page 8 of B. It indicates that pumps will be needed at subregional and regional storage facilities.

We did not receive Appendix B, Table B-1 referred to on Page 10 of C, but assume that it will be in the EIR.

If you have any questions on our comments, please call me at 446-8950 or Don Babbitt at 442-0990.

Sincerely,

Steven A. Kahn
President

cc: Councilman Jimmie Yee
City of Sacramento
915 I Street
Sacramento, CA 95814

William H. Crooks, Executive Officer
California Regional Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

COUNTY OF SACRAMENTO

Public Works Agency
Water Quality Division Memorandum

August 29, 1996
E225.000

TO: Bob Davison
Public Infrastructure Planning & Finance Section

FROM: Bob Lilly BL.
Water Quality Division

SUBJECT: NOP FOR A DRAFT EIR FOR THE COMBINED SEWER SYSTEM IMPROVEMENT AND REHABILITATION PLAN

Water Quality Division staff has reviewed the subject document on behalf of Sacramento Regional County Sanitation District (SRCSD).

The subject document describes two phases of the Combined Sewer System (CSS) Improvement Plan. The first phase includes rehabilitation and or replacement to Sump 1/1A, Sump 2 and the underground collection system. This portion of the CSS plan would have no detrimental affect on SRCSD. Should the pump station listed in item 2 of the subject document page 10, be 60 MGD rather than 160 MGD?

Phase 2 of the CSS plan includes increasing storage for the combined sewage/stormwater flow. After a significant storm, the stored wastewater would be pumped to the Sacramento Regional Wastewater Treatment Plant (Plant) later at a rate of 60 MGD. This increases the total volume of wastewater treated at the Plant and may affect timing or other operational details. Therefore, coordination with Plant staff will be necessary during the development and implementation of this project. Copies of correspondence and documents relating to the CSS should be sent to:

Bob Lilly SRCSD 9660 Ecology Lane Sacramento, CA 95837 Phone - 855-8265 Fax - 855-8053	Mary James SRWTP 8521 Laguna Station Road Elk Grove, CA 95758 Phone - 875-9120 Fax - 875-9049

Water Quality Division staff is interested in reviewing information on the potential impacts on the Sacramento River water quality such as trace elements.

If you have any questions, please contact me at 855-8265.

BL:baf

cc: Michael A. Maggi, John C. Boehm, W. Kido, Stan Dean, Mike Mulkerin, Mary James

lilly/davison.mem/205641

Joe Broadhead
City of Sacramento
Planning Services Division
1231 I Street, Room 300
Sacramento, Ca 95814

PLANNING AND DEVELOPMENT
AUG 30 1996
RECEIVED

Gary Collier
PO Box 38826
Parker Homes Neighborhood Association
Sacramento, CA 95838

August 29, 1996

Dear Sir:

I would like to express several concerns regarding what I and my neighbors consider to be fatal flaws and inadequacies in the Combined Sewer System (CSS) Study. As the project is currently proposed, their is substantial evidence that the project will be financed at the cost of deferring substantial improvements in the substantially larger geographic areas of the city not encompassed in this study. These areas have some neighborhoods that have never been supplied with sewer service. These areas have neighborhoods that have Annual flooding of streets and sewage backups as well. The City of Sacramento is well aware of these deficiencies, however only appears to mobilize in response to building moratorium threats from oversight agencies. We wonder, has the City told these agencies of our problems as required by law?

What is most irritating is that we in the city with insufficient systems will be asked (for the first time) to pay for the significantly smaller CSS project, putting our requested services off indefinitely and most likely beyond the lifetime expectations of the local residents. Is this fair? Why should the downtown get the lion share of monies to renovate their infrastructure when we are told to "be patient" by city officials? They have redeveloped the downtown repeatedly in the last century, however nothing has been done to our area to bring it up to modern standards.

The decision to spread the cost of the CSS across all city users and taxpayers is particularly galling in that we have no doubt that the Mayor will not see fit to raise his taxes to pay for our infrastructure improvements, despite his propensity for taxation and originating new fees for services.

PLANNING AND DEVELOPMENT

AUG 30 1996

RECEIVED

Mayor Joe (Taxem but don't tell em) Serna is more likely to raise fees to get a baseball stadium or throw away a scrawny $360,000 on the Opera when they were known to be in dismal financial health. How many citizens health and lives could have been improved by providing adequate public sanitation services with that $360,000. We will probably never know because that money has been spent so the conductor could live ann extravagant lifestyle in London, England.

Profound and unmitigatable impacts upon the poorest portions of our city is inevitable if we are not included in a city wide assessment and repair project. We desperately need major infrastructure improvements in the north area of the city, or our area will further slip into decay and become a putrid ghetto. These improvements have been requested for over 50 years by residents to no avail. It is patently unfair to impose further delay of our infrastructure improvements when the improvements proposed are as a result of increased development of high rises in the CSS project area, predominantly those of the State of California. This project will only facilitate further development, and further delays of our communities needs is hurtful and a threat to our citizens health, particularly when we have sewage outflows from septic tanks and the resulting disease vectors breeding in the effluent. The state of California annually warns of the potential for encephalitis from mosquitoes, however nothing is done to facilitate drainage of sewage effluent or storm runoff.

This CSS proposal should address all the cities infrastructure needs and not be done piecemeal. It should address all the financial implications it will have on the city as a whole. To divide this project based on it being a combined system is artificial and negates the needs of our community for adequate city services. Mayor Serna talks of our being a world class city with the coming baseball team, well we already one but its a third class, underdeveloped area surrounding a glittering mall and government center. We are talking about the most basic of city services and the city has shown itself wholly inadequate to provide those services to the neighborhoods. Sacramento is rapidly becoming one of rental properties. Some neighborhoods have 95% ownership by absentee landlords, thereby depressing land prices and thereby property tax revenues to the city. It is a vicious circle that the city is unwilling and/or incapable of solving.

PLANNING AND DEVELOPMENT

AUG 30 1996

RECEIVED

It is particularly ironic that this project has apparently come close to fruition in in such a timely manner when it directly impacts the Mayor's home. He already has a system it just needs separating. Some areas have no access at all. The areas that have had infrastructure deficits decades prior to the development in the downtown which surcharged the sewer system should have their improvements included in this proposal or have the improvements completed before the CSS project is completed. If the city fails to provide for its current resident concerns and needs, it should be precluded from allowing further development in recently annexed areas or in the enormous proposal to develop the Natomas drainage basin.

The refusal of the city to provide adequate services is directly related to local property values. In the last month a 3 bedroom home sold on Nimitz street in the city limits of Sacramento for $16,000. This is not an isolated [illegible] the norm for homes [illegible] near [illegible] sell for in excess of [illegible] and sometimes as much as $400,[illegible] local realtors [illegible] referred to [illegible] location however when the very city you pay taxes too will allow this sort of disparity to propagate, we wonder, what public interest is their that this can continue to be tolerated? What is truly puzzling is that these homes selling for such scant sums are not in a floodplain while Mayor Serna's home is definitely at risk.

Perhaps the only mitigation that is workable would be for the city to allow the north area to form its own city, so that the dominant political representatives would work to solve our infrastructure problems rather than being a pariah that uses our tax base for other neighborhoods enrichment.

Yours truly,

Gary Collier

Gary Collier

cc:NIH
cc:MayorSerna
cc:HUD
cc:SHRA
cc:cvrqcb

PLANNING AND DEVELOPMENT

AUG 30 1996

RECEIVED

CONTRA COSTA
WATER DISTRICT

1331 Concord Avenue
P.O. Box H2O
Concord, CA 94524
(510) 688-8000 FAX (510) 688-8122

August 28, 1996

Joe Broadhead, Project Manager
City of Sacramento
Planning and Development
Environmental Services Division
1231 I Street, Room 301
Sacramento, California 95814

Subject: Notice of Preparation of a Draft EIR for the Combined Sewer System Improvement and Rehabilitation Plan

Dear Mr. Broadhead:

The Contra Costa Water District ("District") appreciates receiving the Notice of Preparation and Initial Study for the Draft EIR for Phase 1 and 2 of the Sacramento Combined Sewer System Improvement and Rehabilitation Plan.

The District is a publicly-owned water supply agency serving approximately 400,000 people in central and eastern Contra Costa County and has a vital interest in protecting the quality and reliability of its water supply. A description of CCWD's existing water system and new facilities under construction is given in Appendix I to this letter. Essentially all of CCWD's drinking water supply comes from the Sacramento River and is vulnerable to any degradation in its water quality. Untreated wet weather discharges from the City of Sacramento and elsewhere pose a health risk to the District's customers.

The District would urge that the Project proceeds as quickly as possible to reduce the wet weather overflow into the Sacramento River. The District has no specific comment on the Project at this point. However, the District is interested in following the progress of the Project and would appreciate receiving future mailings and the Draft EIR.

Sincerely,

Greg Gartrell

Greg Gartrell
Director of Planning

APPENDIX I. CCWD OPERATIONS AND FACILITIES

The Contra Costa Water District ("CCWD") operates raw water distribution facilities, water treatment plants and treated water distribution facilities. CCWD supplies raw and treated water to Antioch, Concord, Diablo Water District (serving Oakley), Pittsburg, Southern California Water Company (serving Bay Point), Martinez, parts of Pleasant Hill and Walnut Creek. CCWD serves approximately 400,000 people throughout north-central and east Contra Costa County. Its clients also include 10 major industries, 36 smaller industries and businesses, and 50 agricultural users.

The Contra Costa Water District is entirely dependent on the Delta for its water supply. The Contra Costa Canal system is currently CCWD's principal water supply and delivery system. This system obtains water from unregulated flows and regulated flows from the Bureau of Reclamation's ("Bureau") Central Valley Project ("CVP") storage releases from Shasta, Folsom, and Trinity Lakes into the Sacramento River. Diversions and rediversions are then made in the Delta to CCWD's system at Rock Slough. Under Water Service Contract I75r-3401 (amended) with the Bureau, CCWD can divert up to 195,000 acre-feet annually ("AFA") of water from Rock Slough. Currently, CCWD uses between 125,000 and 140,000 AFA. CCWD can also divert up to 26,780 AFA of water from Mallard Slough (Water Rights License No.3167 and Permit No.19856). The City of Antioch and Gaylord Container, customers of the District, also have water rights permits in the Delta.

The Contra Costa Water District has obtained its water from the Delta since 1940. Delta water is subject to large variations in salinity and mineral concentrations and this water supply has made CCWD and its customers vulnerable to any man-made or natural sources that could degrade Delta water quality.

Water quality changes in Delta water are noticeable to those who drink the water or use the water in commercial and industrial processes. Degradation in water quality is objectionable to many CCWD customers, costly to all residential and industrial users, and a health risk for some individuals. Degradation impairs the beneficial uses of water supplied by CCWD.

The Contra Costa Water District is committed to supplying its customers with the highest quality water practicable and providing all reasonable protection of the supply from any known or potential source of hazardous contamination. CCWD Resolution No. 88-45 states in part that:

> *"CCWD is committed to reducing the concentration of sodium and chloride in the District's water, thereby reducing household and landscape irrigation concerns and industrial and manufacturing costs caused by the fluctuating sodium and chloride level of the District's Delta source...."*

In May 1987, CCWD's Board of Directors adopted water quality objectives for water distributed within its service area. The acceptable levels of sodium and chloride were established at 50 milligrams per liter (mg/l) and 65 mg/l, respectively. In 1988, the voter-constituents of CCWD approved the issuance of bonds to finance a $450 million water quality and reliability project known as the Los Vaqueros Project. The primary purposes of the Los Vaqueros Project are to improve the quality of water supplied to CCWD customers and minimize seasonal quality changes, and to improve the reliability of the emergency water supply available to CCWD. The Los Vaqueros Project consists of a reservoir with about 100,000 acre-feet of storage, a new point of diversion (at Old River south of the Highway 4 crossing) which will operate in conjunction with the current Rock Slough diversion point, associated water conveyance and delivery facilities, pumping plants, and other facilities.

On June 2, 1994, the State Water Resources Control Board issued Decision No. 1629 which gives CCWD additional rights to divert and store water for beneficial uses. The State Board subsequently issued Water Rights Permits No. 20749 and 20750 for filling Los Vaqueros Reservoir from the new intake at Old River near Highway 4 and diversion and storage of the water of Kellogg Creek. These rights are in addition to the contractual rights to divert and store water furnished through the Central Valley Project. Construction of the reservoir began in September 1994 and it is expected that diversion from the Old River intake will begin in late 1996 or early 1997. Up to 95,850 AFA may be diverted for storage between November 1 of each year to June 30 of the succeeding year under Permit No. 20749. To meet the objective of 65 mg/l chloride in its water supply, CCWD will divert when water quality at the Old River intake is below 50 mg/l in chloride concentration.

COUNTY OF SACRAMENTO

PUBLIC WORKS AGENCY

COUNTY ADMINISTRATION BUILDING
827 SEVENTH STREET, ROOM 304
SACRAMENTO, CA 95814

Phone: (916) 440-6581
Fax: (916) 440-7100

DOUGLAS M. FRALEIGH, Administrator
WARREN H. HARADA, Director
Public Works Administration
ROBERT SHANKS, Director
District Engineering
TERRY TICE, Director
County Engineering

August 30, 1996

AUG 30 1996
PLANNING SERVICES

Joe Broadhead, EIR Project Manager
City of Sacramento
Department of Planning and Development
1231 I Street
Sacramento, California 95814-2904

Subject: **NOTICE OF PREPARATION / INITIAL STUDY - COMBINED SEWER SYSTEM IMPROVEMENT AND REHABILITATION PLAN**

Dear Mr. Broadhead:

In response to your request for comments regarding the above cited Notice of Preparation, attached is a copy of a letter from Bob Lilly of the Water Quality Division dated August 29, 1996. There are no other comments from the Public Works Agency at this time.

If you have any questions regarding this response, please call Bob Davison at 440-6525.

Sincerely,

Douglas M. Fraleigh
Administrator

DMF/RAD:rad
Attachments

cc:				
	Warren Harada	Keith DeVore	Pat Groff	John Boehm
	Terry Tice	Tom Zlotkowski	Donna Dean	Steve Pedretti
	Robert Shanks	Cheryl Creson	Randy Foust	Greg Ohanesian

STATE OF CALIFORNIA — THE RESOURCES AGENCY

PETE WILSON, *Governor*

OFFICE OF HISTORIC PRESERVATION

DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 942896
SACRAMENTO 94296-0001
(916) 653-6624
FAX: (916) 653-9824

October 8, 1996

Kendra Ryan
EIP Associates
1200 Second St., Suite 200
SACRAMENTO CA 95814

Subject: City of Sacramento Combined Sewer System Improvement and Rehabilitation Plan

Dear Ms. Ryan:

I have received the Notice of Preparation (NOP) and Initial Study for the subject action. Thank you for providing copies.

It is evident that the both Phase 1 and 2 have the potential to impact cultural resources.

The documents allude to the possibility of discovering buried archaeological deposits during implementation. Because of that possibility, it would seem prudent to follow the requirements in Section 21083.2 of the Public Resources Code rather than Appendix K. The latter has no provision for accidental discoveries during implementation.

The NOP identifies that the sewers piping system is approaching 100 years of age. For the purposes of CEQA the significance of impacts to structures with that level of antiquity should be considered.

The significance of both Sump 1 (330 Front Street) and Sump 2 (915 11th Street) needs to be determined. If either is determined significant, impacts to these structures need to be addressed. Mitigation guidance can be found in the Secretary of Interiors Standards for Historic Preservation Projects.

If you have questions, please contact Steven Grantham of my staff at (916) 653-8920.

Sincerely,

Ms. Cherilyn E. Widell
State Historic Preservation Officer

cc: Peak & Associates

APPENDIX 15-3

EXISTING APPLICABLE REGULATIONS

15.3 EXISTING APPLICABLE REGULATIONS

CITY OF SACRAMENTO

Standard Specifications for Public Works Construction (1989)

During project construction, the City's *Standard Specifications for Public Works Construction* require construction contractors to build to City standards related to structural integrity and erosion control as well as be responsible for preparing a traffic control plan, in accordance with the Work Area Traffic Control Handbook. Contractors are responsible for furnishing, installing, and maintaining all warning signs and devices necessary to safeguard the general public and to provide proper and safe routing of vehicles and pedestrians during construction. City contracts typically include the following specifications, found in the 1989 *Standard Specifications for Public Works Construction*, that a contractor will be required to adhere to during construction:

Maintenance of Traffic, Public Safety and Convenience

- Spillage resulting from haul operations along or across streets will be removed.
- Water or dust palliative will be applied to alleviate or prevent dust nuisance.
- Establish traffic scheduling, control measures, and/or detours for vehicles and pedestrians affected by construction work.
- Install warning signs and other devices to safeguard the general public.
- Provide access to all existing driveways, rear access to buildings and parking at all times unless other arrangements are made with property owner. Closure would require 48-hour advance notice.
- Install steel plates or other methods to cover open excavations during non-working hours of project.
- At night and at other times when work is not in progress, the entire roadway or alley will be open to the public for traffic.
- Removal of on-street parking would require 48-hour advance notice with signed barricades in place.
- Coordinate with City Police and Fire Department Communications Center and City Transportation, Street Maintenance, and Parking Divisions.

Maintaining Existing Sewer Flows and Water Services

- Maintain existing sewer flows until new sewer improvements are complete and functioning.

- Notify residents or users 24-hours in advance prior to any water service interruption, with a maximum interruption of 4 hours.

Utilities, Existing Improvements and Adjacent Property

- Protect existing underground utilities; existing improvements, including pavements and sidewalks; and adjacent property, including trees, shrubbery, fences and walls.

- Coordinate with the City Arborist on pruning of street trees and root removal methods during sewer rehabilitation/replacement.

Health and Safety

- Because of danger of solvents, gasoline and other hazardous materials in the existing sewer system, these areas are to be considered hazardous to open flame, sparks or unventilated occupancy.

- Sewer system facilities are to be considered contaminated with disease-causing organisms, therefore, personnel must be advised to take necessary precautions.

- In the event of an accidental discharge from the sewer system, containment and disinfection is to be applied.

Permits

- Obtain encroachment permits or temporary construction easements for use of public and/or private property as construction staging areas.

Compliance with the City standard specifications would reduce the potential for interference with an emergency response plan, ensure erosion control measures are taken to prevent unstable earth conditions from occurring during construction, and minimize any inconvenience to the general public and abutting property owners as is possible.

In addition to the Standard Specifications listed above, the City implements various roadway improvement strategies to minimize potential construction-related impacts on transportation and circulation. Table 15.3-1 lists these strategies.

<u>Grading, Erosion, and Sediment Control Ordinance 93-068</u>

During and after project construction, the contractor is required to prepare erosion, sediment, and pollution control plans. In addition, Best Management Practices (BMPs) are also required to be

TABLE 15.3-1

LIST OF ROADWAY IMPROVEMENT STRATEGIES TO MINIMIZE CONSTRUCTION ROADWAY IMPACTS

STRATEGY	APPLICABLE ROADWAY TYPE	NOTE
Lane construction to maintain maximum possible number of traffic lanes.	Roadways with wide lanes.	The constricted (narrowed) width should be at least 9 feet wide.
Lane closure	Roadways with more than two lanes	Whenever possible, one lane each way should be maintained.
Alternating one-way operation in one lane.	Two lane roadways	May result in queuing traffic and congestion. Should only be done with flag control to avoid the risk of head-on collision.
Street closure with detouring	Usually two-lane roadways with light traffic	Should be avoided on blocks where handicapped persons live or where access to emergency facilities would be impeded.
Use of painted median or two-way left-turn lane as traffic lane.	Roadways with painted median or two-way left- turn lane.	
Restriction of work to off-peak hours only.	All types	Capacity would be reduced during peak hours. May increase construction time.
Nighttime work	Non-residential roadways	Disturbance to existing traffic would be minimized.
Remove parking or loading zones for use as traffic lanes, or because of trenching location.	Roadways with on-street parking or loading zones.	May result in business loss if applied in commercial area.
Postpone work to off-season	Industrial and commercial streets	Only applicable when significant volume reduction occurs during off-season period. Particularly important for seasonal shopping peaks and seasonal industries such as produce processing.
Work only on weekends	All types	Applicable when the work does not require coordination between contractors or when work is done by property owners. May increase construction time.
Redesign to change pipeline alignment.	Heavily traveled streets, inform soils, important wildlife habitats	Avoid the heaviest traffic area when rerouting the pipeline. May increase costs and/or construction time.

TABLE 15.3-1

LIST OF ROADWAY IMPROVEMENT STRATEGIES TO MINIMIZE CONSTRUCTION ROADWAY IMPACTS

STRATEGY	APPLICABLE ROADWAY TYPE	NOTE
Restrict work area to length of trench that an be completed in one day.	All types	Limited to some types of construction. Work on interceptor, for example, cannot be completed in one day.
Plank trenches during rush hour.	High traffic volume streets.	Minimizes rush hour traffic disruption; increase construction time and cost.
Plank trenches at driveways to maintain access.	All types	Necessary for emergency facilities without alternate access. Desirable for business which would be severely affected economically and for residential access for handicapped persons.
Restrict multiple construction site scheduling.	All types	Avoid simultaneous construction on alternate routes for diverted traffic.
Use of temporary surfacing immediately after backfill when permanent surface cannot be emplaced.	All types	Minimizes lane closure and parking loss, particularly on weekends.
Signing of alternate routes	All types, particularly high volume streets.	Minimizes traffic congestion and accidents due to driver confusion.
Pedestrian bridging	High volume pedestrian use streets.	Needed for access to schools and emergency facilities; desirable in high-use commercial areas.
Scheduling to avoid major private construction projects.	Business, industrial, high- density residential streets.	Avoid construction where street and sidewalk already encroached.
Off-street parking for contractors' vehicles	All types where curb parking is in high demand.	Should be planned prior to start of construction to avoid unnecessary street blockage.
Dewatering discharge to operational catch basin	All types	Avoids hazards of wet pavement
Use of barricades, cones, high-level warnings, etc.	All types	Use of high-level warnings particularly important in hilly areas where on-coming drivers may not be able to see trench.

TABLE 15.3-1

LIST OF ROADWAY IMPROVEMENT STRATEGIES TO MINIMIZE CONSTRUCTION ROADWAY IMPACTS

STRATEGY	APPLICABLE ROADWAY TYPE	NOTE
Temporarily remove traffic diverters	Berkeley residential streets.	May be necessary to provide alternate routes.
Signing directing to alternate parking.	Commercial and industrial streets with loss of substantial curb parking.	Minimizes loss of business and operational disruption.
Early notification of all adjacent property owners.	All types	Advance information lowers public concern and lessens confusion which causes traffic delays and increases.
Coordination with police departments for traffic control. Notification with fire departments and ambulance services of closed streets.	Busy streets. All types	Minimizes emergency vehicle delay.

SOURCE: City of Sacramento Transportation Division and California Department of Transportation, 1993.

developed as part of these plans. All construction activities related to implementation of the CSS Plan (i.e., trenching to replace sewer lines, installation of underground storage tanks) would be required to conform to the City's ordinance. This would reduce the potential for any unstable earth conditions from occurring during construction.

Dust Control Ordinance 3969

Section 9.09.381 of the Municipal Code, Ordinance 3969, states that any construction activity taking place within the City must take reasonable precautions to prevent and control dust created by work activities to adjoining public and/or private property. These controls include wetting down the site and not working during periods of high winds. During project construction all contractors are required to comply with this regulation to help minimize the emission of non-combustion source airborne particulates (i.e., dust). Compliance with this ordinance would help to reduce the presence of particulate matter (dust) associated with short-term construction activities.

Title 66 Noise Control

Title 66, Noise Control, states that construction activities can only take place during certain times of the day and on certain days of the week. Short-term construction activities, providing they occur during the specified days/times are exempt from the noise ordinance. All contractors are required to comply with the City's noise ordinance to minimize potential short-term construction-related noise impacts at nearby noise-sensitive receptors.

Title 45 Trees

Prior to the removal of any trees, including heritage trees defined as having a trunk circumference of 100-inches or more, or any activity that may injure, cut roots, deface, prune, or scar a tree the contractor is required to get approval from the Director of City Neighborhood Services. During project construction, if any street trees need to be removed or if there is a possibility of harm occurring to that tree, then the contractor must get approval from the Director of City Neighborhood Services prior to commencement of such activities. Compliance with this regulation would reduce the potential for unnecessary tree removal to occur as a result of construction activities.

Title 32 Preservation of Historic Structures

The Preservation of Historic Structures Ordinance requires that any modifications to a historic structure must be reviewed by City staff prior to any action being taken. Sump 1/1A and Sump 2 are listed with the California Office of Historic Preservation and may be eligible for the National Register. Compliance with the ordinance would reduce the potential for any impacts occurring that would in some way damage or severely modify structures protected under this ordinance.

STATE OF CALIFORNIA

Hazardous Materials

The California Environmental Protection Agency (Cal-EPA), California Occupational Safety and Health Act (Cal-OSHA), Department of Toxic Substances Control (DTSC), Office of Emergency Services (OES), California Highway Patrol (CHP), and the California Department of Transportation (Caltrans) are all responsible agencies for overseeing regulatory controls on hazardous materials. The California Code of Regulations contains all the required regulations. Included within the CSS Plan is the addition of a disinfection system as part of the conversion proposed for Pioneer Reservoir. The disinfection system would utilize sodium hypochlorite for odor control and sodium bisulfite for dechlorination treatment.

To ensure the protection of worker safety from hazardous materials and substances during construction, Cal-OSHA requires that a health and safety plan is prepared. Compliance with this State regulation would reduce the potential for workers to be exposed to hazardous materials through skin contact, inhalation, and accidental ingestion.

California Code of Regulations (CCR) (Title 8, 22, 23)

Title 8 of the CCR requires that any project involving excavation must be shored or otherwise stabilized to preclude slope failure from occurring during construction. During project construction contractors are required to comply with the existing State regulations to minimize any potential impact that may occur due to grading and excavation activities.

Title 22 and 23 of the CCR contains all the hazardous waste regulations related to, among other things, the proper removal of sewer and stormwater wastes, sludge and other solids.

The City is required to comply with the State's existing regulations that oversee erosion and changes in topography along with the handling and transportation of hazardous materials. Compliance with the applicable State regulations would reduce the potential for any significant impacts to occur.

Central Valley Regional Water Quality Control Board (CVRWQCB)

The State Water Resources Control Board (SWRCB) and the Central Valley Regional Water Quality Control Board (CVRWQCB) are responsible for assuring implementation and compliance with the provisions of the federal CWA and the Porter-Cologne Water Quality Act. Due to the shallow depth to groundwater in some portions of the CSS service area if any dewatering is required during construction, the contractor must comply with the application requirements established by the CVRWQCB. Compliance with the CVRWQCB requirements would reduce the potential for a short-term change in the quantity, and/or direction or rate of flow of the groundwater during construction activities.

General Construction Activity Stormwater Permit

General stormwater discharge permits are required by the State for stormwater discharges associated with construction activities involving the disturbance of five acres or more. Permit applicants are required to prepare and retain at the construction site, a Stormwater Pollution Prevention Plan (SWPPP) that describes the site, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, and non-stormwater management controls. Prior to the start of construction the contractor must file a Notice of Intent with the State. Compliance with the applicable State regulations would reduce the potential for short-term, construction-related water quality impacts related to sedimentation, erosion, and debris/waste disposal from occurring.

FEDERAL

Hazardous Materials

The Environmental Protection Agency (EPA), Occupational Safety and Health Act (OSHA), Nuclear Regulatory Commission (NRC), Department of Transportation (DOT), National Institutes of Health (NIH) Resource Conservation and Recovery Act (RCRA), and Comprehensive Response Compensation and Liability Act (CERCLA) are responsible agencies that oversee regulatory controls on hazardous materials and sites. Included within the CSS Plan is the addition of a disinfection system. The disinfection system would utilize sodium hypochlorite for odor control and sodium bisulfite for dechlorination treatment.

Code of Federal Regulations (CFR) (Title 29, 40, 49)

Titles 29, 40, and 49 of the CFR oversee all the federal regulations that apply to hazardous materials. Compliance with federal regulations that oversee hazardous materials would reduce the potential for exposure to hazardous materials during operation.

National Pollution Discharge Elimination System (NPDES) permit

The purpose of the NPDES is to establish a comprehensive stormwater quality program to manage urban stormwater that minimizes pollution of the environment to the maximum extent practicable (MEP). The NPDES program consists of (1) characterizing receiving water quality, (2) identifying harmful constituents, (3) targeting potential sources of pollutants, and (4) implementing a Comprehensive Stormwater Management Program (CSWMP). In addition, conditions of the NPDES permit require implementation of BMPs. Compliance with the waste discharge requirements (WDRs) set forth in the NPDES permit would reduce the potential for significant water quality impacts to occur during project construction and operation.

ADDITIONAL REGULATIONS

Sacramento Metropolitan Air Quality Management District (SMAQMD) (Rule 403)

The SMAQMD is responsible for regulating air quality within the Sacramento basin through its permit authority over most types of stationary emission sources and through its planning and review activities. The SMAQMD is responsible for implementing emissions standards and other requirements of State and federal laws. According to the SMAQMD Rules, a project is exempt if it meets certain criteria. The CSS Plan meets all the criteria therefore it is exempt from applying for permits related to the operation of certain machines.

Rule 403, states that reasonable precautions should be taken during construction activities to minimize the emissions of fugitive dust. Compliance with the SMAQMD rules and the City Ordinance would minimize, to the extent feasible, fugitive dust from occurring during short-term construction activities. Potential impacts would be reduced.

National Fire Protection Association (Code 820)

The installation of any new electrical systems or upgrading of existing systems would be in accordance with Code 820 of the National Fire Protection Association. Compliance with these specific requirements would reduce the potential for fire hazards to occur.

Uniform Building Code (UBC) (Section A33-Excavation and Grading)

Section A33 of the UBC requires that erosion control measures be taken if construction activities require any excavation or trenching. The CSS Plan does require the replacement of underground pipes which would necessitate trenching and excavating activities. These requirements would help to minimize any potential erosion-related and unstable soil conditions from occurring during construction.

American Society for Testing and Materials (ASTM) standards

During project construction, the contractor is required to purchase materials that meet current industry-provided design specifications and requirements including ASTM standards. ASTM is a scientific and technical organization formed for the development of standards on characteristics and performance of materials, products, systems and services. Compliance with the ASTM standards would reduce the potential for structural damage to occur related to seismic instability.

APPENDIX 15-4

NPDES PERMIT

STATE OF CALIFORNIA - Environmental Protection Agency

PETE WILSON, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
3443 Routier Road, Suite A
Sacramento, CA 95827-3098
PHONE: (916) 255-3000
FAX: (916) 255-3015

27 March 1996

CERTIFIED MAIL
Z 175 115 223

Mr. Gary Reents
City of Sacramento
Department of Utilities
5770 Freeport Blvd., Suite 100
Sacramento, CA 95822-2911

CERTIFIED MAIL
Z 175 115 222

Ms. Cheryl Creson
Sacramento County Public Works Agency
Water Quality Division
9660 Ecology Lane
Sacramento, CA 95827

TRANSMITTAL OF ADOPTED/AMENDED WASTE DISCHARGE REQUIREMENTS, AND RESCISSION OF CEASE AND DESIST ORDERS

Enclosed is an official copy of Order No. 96-090 as amended by the California Regional Water Quality Control Board, Central Valley Region, at its last regular meeting. (March 22, 1996)

Also enclosed is a copy of Order No. 96-089, which rescinded Cease and Desist Order Nos. 90-198 and 92-217. The Board determined that the Long-Term Control Plan for improvements is an acceptable solution to the problem of outflows from the combined sewer system, and included the time schedule in the renewed NPDES permit.

Kenneth D. Landau

KENNETH D. LANDAU
Senior Engineer

PHL:pl

Enclosures- Adopted Orders
Standard Provisions (Dischargers only)
Proposition 65 Information (Dischargers only)

cc: See attached list

cc: U.S. Environmental Protection Agency, Region IX, San Francisco
U.S. Army Corp of Engineers, Sacramento District, Sacramento
U.S. Fish and Wildlife Service, Sacramento
National Marine Fisheries Service, Santa Rosa
Office of Drinking Water, Department of Health Services, Sacramento
Environmental Management Branch, Department of Health Services, Sacramento
Department of Water Resources, Central District, Sacramento
Department of Fish and Game, Region 2, Rancho Cordova
Office of the Chief Counsel, State Water Resources Control Board, Sacramento
Division of Water Quality, State Water Resources Control Board, Sacramento
Office of Historic Preservation, Sacramento
Sacramento County Department of Environmental Health , Sacramento
Sacramento County Planning Department, Sacramento
Mr. Walter Bishop, Contra Costa Water District, Concord
Mr. Mark Beuhler, Metropolitan Water District of Southern California, Los Angeles
Mr. Byron Buck, California Urban Water Agencies, Sacramento
Mr. Bill Jennings, Deltakeeper, Stockton

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 96-090

NPDES NO. CA0079111

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF SACRAMENTO
AND
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The City of Sacramento and the Sacramento Regional County Sanitation District (hereafter Discharger) submitted a Report of Waste Discharge, dated 2 June 1995, and applied for a permit renewal to discharge waste from the Combined Wastewater Treatment Plant under the National Pollutant Discharge Elimination System (NPDES). Supplemental Information dated July 1995, August 1995, 16 January 1996 and 29 February 1996 was also submitted.

2. The City of Sacramento owns and operates a combined sewer system (CSS) that serves 7510 acres in the downtown, East Sacramento, and Land Park areas. An additional 3690 acres with separate sewers contributes sanitary sewage to the combined system (see Attachment A, which is a part of this Order).

3. The CSS conveys domestic and industrial wastewater and storm runoff to Sump 2, where up to 60 mgd is pumped to the Sacramento Regional County Sanitation District's regional wastewater treatment plant (SRWTP) for secondary treatment prior to discharge to the Sacramento River. This discharge is designated as point 001 and is governed by Waste Discharge Requirements Order No. 94-006 (NPDES No. CA0077682). When flow to Sump 2 exceeds 60 mgd, the City operates its Combined Wastewater Treatment Plant (CWTP), where an additional 130 mgd of combined wastewater receives primary treatment with disinfection and discharge to the Sacramento River at points 002 and 003. The CWTP basins may also be used for storage of flows and diversion of flows back to the SRWTP. Flows to Sump 2 greater than 190 mgd are diverted to the 28 million gallon Pioneer Interceptor and Reservoir for storage. During major storms, Sump 1/1A also pumps up to 120 mgd to Pioneer Reservoir. The stored combined wastewater is diverted back to the SRWTP or the CWTP for treatment as treatment capacity allows, or is discharged to the Sacramento River if storm flows exceed total treatment and storage capacity. The discharge from Pioneer Reservoir occurs at point 006 and receives partial settleable solids and floatables removal, in a flow-through process, without disinfection. During extreme high flow conditions, discharges of untreated combined wastewater may occur at Sump 2 bypass points 004 and 005 and at Sump 1 bypass point 007. The CWTP and sumps are

currently being managed under an interim operations plan dated 15 November 1994. Collected screenings are hauled to a landfill, and sludges and other solids removed from liquid wastes are pumped through the collection system to the RWTP. Discharges 002 through 007 are governed by these requirements (See Attachments B and C, which are part of this Order).

4. The CSS has inadequate hydraulic capacity and is in need of rehabilitation. Since many of the pipelines are too small and have too flat a slope to accommodate flows during moderate and intense storms, outflows of combined sewage and stormwater from the CSS have occurred over the years out of plumbing fixtures located in basements and low-lying drop inlets and maintenance holes onto the streets. In addition, localized flooding of stormwater occurs in several areas because runoff is greater than the CSS capacity. Much of the system is old and needs rehabilitation or replacement.

5. On 6 December 1985 the Board adopted Order No. 85-342, prescribing waste discharge requirements for the Combined Wastewater Collection and Treatment System. Discharge requirement E.1. stated, "Neither the discharge nor its treatment shall create a nuisance or pollution as defined in Section 13050 of the California Water Code."

6. The Board modified Order No. 85-342 on 22 June 1990 by adoption of Order No. 90-197 to specifically prohibit overflows of the CSS by adding requirement A.4., which stated, "The bypass of, or overflow from, the combined wastewater collection system is prohibited. The exceptions to this Discharge Prohibition are the discharges at Discharge points 004, 005, and 007 to the Sacramento River which are restricted by Discharge Prohibition A.3."

7. On 22 June 1990 the Board adopted Cease and Desist Order No. 90-198 requiring the City of Sacramento to cease and desist from discharging wastes in violation of Discharge Prohibition A.4. These violations were due to outflows of combined wastewater resulting in a possible public health threat through potential human contact with the wastewater. Cease and Desist Order No. 90-198 was amended twice, by adoption of Order No. 91-199 on 6 September 1991, and Order No. 92-217 on 23 October 1992. The Cease and Desist Order and its amendments required the City, in part, to prevent outflows by undertaking operational improvements on the Combined Wastewater Collection and Treatment System, submitting technical reports and time schedules for improvements to the system, conducting additional monitoring to better quantify the benefits of separation of the system, and performing a risk assessment on the known and potential health impacts from the outflow of combined sewage, as feasible. The City has complied with the intent of Order No. 92-217.

8. The Board renewed the NPDES permit on 2 November 1990 by adoption of Order No. 90-315. The renewed permit maintains the discharge prohibition, specifications, and provisions found in Order No. 90-197, keeping Cease and Desist Order No. 90-198 in effect.

9. The "*Retrospective Study Report: Public Health Risk Assessment for Outflows from the Combined Sewer System*", submitted by the City, was unable to provide a conclusive answer to whether or not outflows from the CSS constitute a human health risk, but additional studies would not likely be cost effective to provide a better answer. There have been no documented outbreaks of waterborne diseases associated with CSS outflows. The Department of Health Services concurs that additional health effects studies are unlikely to statistically define the potential health effects resulting from CSS outflows.

10. The City has determined that a project to completely separate the sanitary and storm sewers and conduct rehabilitation of the sewers would cost approximately $381 million, in 1992 dollars. This alternative would be extremely disruptive due to extensive in-street construction, would not result in significant decreases in outflows until the project is nearly complete in 20 years, and would only minimally decrease flooding. The City is instead recommending a Long-Term Control Plan which includes system improvements to reduce flooding and outflows in the combined sewer system area resulting from a 1-year storm event (i.e. a storm with a 100% probability of occurring every year) to a 10-year (10% probability) storm event, as well as preventing flood waters from reaching the ground floor of buildings and houses in a 100-year (1% probability) storm event. The long-term program to achieve this goal is estimated to cost approximately $414 million in 1995 dollars, and will take many years to complete.

441

The City has committed to spend $10 million per year on the long-term program to improve and rehabilitate the combined sewer system. A portion of this amount will be used to finance long-term debt so that major projects can be completed early in the program. The city plans to construct $84.5 million in improvements and rehabilitation in the first five years of the program. Major projects scheduled for completion in the five year term of the permit include increasing the pumping capacity of Sumps 1/1A and 2, rehabilitating the two sumps, and converting Pioneer Reservoir into a primary treatment facility. In addition, local improvement projects will be constructed and old sewers will be rehabilitated or replaced.

The City has set the following interim goals to be met as progress is made towards the final goal: (a) obtaining protection from a 5-year storm in the six areas of worst flooding, (b) obtaining protection from a 5-year storm throughout the combined sewer system area, (c) obtaining protection from a 10-year storm in the six areas of worst flooding, and then (d) obtaining the goal of protection from a 10-year storm event throughout the combined sewer system.

All the improvements will be designed to ultimately provide 10-year outflow and flood protection when the entire program is finally completed, however the level of protection provided by a specific improvement project will vary.

11. The Board concurs with Finding Nos. 9 and 10.

COMBINED WASTEWATER SYSTEM OVERFLOW (CSO) STRATEGIES

12. On 8 September 1989 the Federal Register published the National (EPA) CSO Strategy. The strategy's main objectives are to bring all CSO discharges into compliance with technology-based requirements of the Clean Water Act and applicable water quality objectives, minimize water quality, aquatic biota, and human health impacts from wet weather overflows, and to ensure that, if CSO discharges occur, they are the result of wet weather.

13. The National CSO Strategy required the development of a state-wide strategy by 15 January 1990. In response, the State Water Resources Control Board adopted Resolution No. 90-9, establishing a State Combined System Overflow Control Strategy.

14. On 19 April 1994 the Federal Register published the CSO Control Policy. The Policy elaborates on the National CSO Strategy, and establishes a consistent national approach for CSO control. The key objectives of the Policy are that: (1) Dischargers should immediately implement the Nine Minimum Controls (NMC) which are technology-based actions or measures that can reduce CSOs and their effects on receiving water quality (no later than 1 January 1997); (2) Dischargers should give priority attention to environmentally sensitive areas; (3) Dischargers should develop Long-Term Control Plans (LTCPs) for controlling CSOs by either demonstrating the controls contribute to achievement of water quality standards or provide minimum treatment that is presumed to meet water quality standards; (4) States should review and revise, as appropriate, State water quality standards during the CSO long-term planning process; and (5) Financial capability should be taken into account when developing CSO control plans.

15. These requirements implement the National and State CSO Strategies and Policy.

OTHER

16. The U.S. Environmental Protection Agency (EPA) and the Board have classified this discharge as a major discharge.

17. The Board adopted a Water Quality Control Plan, Third Edition, for the Sacramento River Basin and the San Joaquin River Basin (hereafter Basin Plan) which contains water quality objectives for waters of the Basin. These requirements implement the Basin Plan.

18. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. The Discharger collected water quality samples of the effluent and receiving water for 19 storm events from 1991 through 1995. The constituents evaluated included those which were regulated by the Inland Surface Waters Plan. All constituents appear significantly below potentially toxic concentrations for those chemicals, taking into account dilution and receiving water concentrations, with the exception of mercury. The Sacramento River frequently exceeds the 30-day average EPA Criteria of 0.012 µg/l to protect human health (due to bioaccumulation of mercury in fish tissue), and effluent from the CWTP also was found in excess of the criteria. The CWTP effluent data may not be indicative of the actual concentration of mercury, due to detection levels often above the criteria. Therefore, this Order contains provisions that :

    a. require the Discharger to use 'clean technique' for sample collection, handling, and analysis, in order to provide accurate information as to whether the levels of mercury in the discharge causes or contributes to an in-stream excursion above a water quality objective;

    b. if the discharge causes or contributes to an in-stream toxicity caused by mercury, requires the Discharger to submit information to calculate effluent limitations for those constituents; and

    c. allows the Board to reopen this Order and include effluent limitations for mercury.

19. The beneficial uses of the Sacramento River downstream of the discharge are municipal and domestic, industrial, and agricultural supply; water contact and noncontact recreation; esthetic enjoyment; navigation; ground water recharge, fresh water replenishment; and preservation and enhancement of fish, wildlife and other aquatic resources.

20. The beneficial uses of the underlying ground water are municipal and domestic, industrial, and agricultural supply.

21. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. The impact on existing water quality will be insignificant.

22. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 208(b), 301, 302, 304, and 307 of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

23. The discharge is presently governed by Waste Discharge Requirements Order No. 90-315, adopted by the Board on 2 November 1990.

24. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code.

25. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

26. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

27. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided EPA has no objections.

IT IS HEREBY ORDERED that Order No. 90-315 is rescinded and the City of Sacramento and the Sacramento Regional County Sanitation District, Combined Wastewater Collection and Treatment System, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. The discharge to the Sacramento River is prohibited at the following discharge points unless the specified conditions are met, or authorization has been granted under Provision E.7:

   a. CWTP Discharge Points 002 and 003. No discharge is allowed unless a flow of 60 mgd is being sent to the Sacramento County Regional Wastewater Treatment Plant.

   b. Sump 2 Bypass Discharge Points 004, 005, and Sump 1 Bypass Discharge Point 007. No discharge is allowed unless a flow of 130 mgd is being sent to the CWTP. After upgrade of Pioneer Reservoir, according to the time schedule in Provision E.3., no discharge is allowed unless a flow in conformance with the current Operations Plan is also being sent to the Pioneer Reservoir Treatment Facility.

c. Pioneer Reservoir Discharge Point 006. Prior to completion of upgrades, according to the time schedule in Provision E.3., no discharge is allowed unless a flow of 130 mgd is being sent to the CWTP. After completion of upgrades, no discharge is allowed unless a flow of 60 mgd is being sent to the Sacramento County Regional Wastewater Treatment Plant, and a flow in conformance with the current Operations Plan is being sent to the CWTP.

2. Other than as a result of wet weather, or as approved under Provision E.7., discharges from the CWTP, Pioneer Reservoir, or any sumps to surface waters or surface water drainage courses is prohibited.

3. Bypass of, or overflow from, the wastewater collection system to surface waters is prohibited, except as allowed by Standard Provision A.13 [See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)]. The exception to this Discharge Prohibition is the discharges at Discharge points 004, 005, 006, and 007 to the Sacramento River which are restricted by Discharge Prohibitions A.1. and A.2.

B. Effluent Limitations:

1. The discharge of effluent from the CWTP (Discharge Points 002 and 003) in excess of the following limits is prohibited:

Constituents	Units	Storm Year[1] Average	Storm Maximum	Storm Year[1] Median
Total Suspended Solids	mg/l	100[2]		
Settleable Solids	ml/l		1.0	
Chlorine Residual	mg/l		0.1	
Fecal Coliform Organisms	MPN/100 ml			200[3,4]

[1] 1 October through 30 September
[2] In addition, two consecutive samples shall not exceed 150 mg/l.
[3] In addition, no three consecutive samples shall exceed 1000 MPN/100 ml.
[4] The Discharger shall continuously operate the chlorination equipment when discharging to the Sacramento River.

12. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.

13. Violations of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.

14. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

E. Provisions:

1. Neither the discharge nor its treatment shall create a nuisance or pollution as defined in Section 13050 of the California Water Code.

2. The Discharger shall submit, within 90 days of adoption of this Order, an evaluation of the City's compliance with the nine minimum CSO controls outlined in **Attachment D**. If the City is not in compliance with all of the controls, a workplan and time schedule shall be submitted by which the City will attain compliance. This permit may be reopened and a compliance time schedule added to require compliance. The City shall implement necessary actions to achieve and maintain compliance with the nine minimum controls.

3. The Discharger shall implement its Long-Term Control Plan by completing work on the CSS in accordance with the following time schedule:

Task	Compliance Date	Report Due
Select design consultant for Sump 1/1A, Pioneer, and Sump 2 projects	31 August 1996	15 September 1996
Complete 42nd Street below-ground storage structure and pump station	31 December 1996	15 January 1997
Complete EIR process for Sump 1/1A, Pioneer, and Sump 2 projects	31 January 1997	15 February 1997

Task	Compliance Date	Report Due
Bid and award Sump 1/1A and Pioneer projects	30 April 1997	15 May 1997
Complete Sump 1/1A and Pioneer projects	31 March 1998	15 April 1998
Bid and award Phase I of Sump 2 project	30 April 1998	15 May 1998
Complete Phase I of Sump 2 project Bid and award Phase II of Sump 2 project	30 April 1999	15 May 1999
Complete Phase II of Sump 2 project	30 April 2000	15 May 2000

The Discharger shall submit to the Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Board by letter when it returns to compliance with the time schedule.

✓4. The Discharger shall maintain an approved Operations Plan for the CSS which is designed to maximize the removal of pollutants during and after each precipitation event using all available facilities within the collection and treatment system, with the goal of achieving the highest treatment possible and minimizing CSOs and outflows. A revised Operations Plan is due, **by 30 June 1996**, which outlines, in part, how the Pioneer Reservoir will be operated after modifications and upgrades to the CSS are completed. The revised Operations Plan for the CSS shall also be provided, **by 30 June 1996**, to interested parties who notify the Discharger. The Plan must also outline how pollutant loading to the receiving water will not be increased when pumping capacities at the sumps are increased. The Plan shall become an enforceable part of this permit upon approval by the Executive Officer. The Discharger shall operate the CSS in conformance with the approved Operations Plan and shall report any variation from the plan in the next monthly monitoring report. Further modifications to the Operations Plan must be submitted to interested parties and the Executive Officer for review, and must be approved by the Executive Officer before they may become effective.

5. **By 30 June of each year**, the Discharger shall submit a list of the combined sewer improvement and rehabilitation projects which are scheduled for completion in the next 12 months. The cost estimate for each project shall also be submitted.

6. There are indications that the discharge may contain a constituent (mercury) that has a reasonable potential to cause or contribute to toxicity in the receiving water. The Discharger shall submit, **within 60 days of adoption of this Order**, plans and a time schedule to conduct a study to determine, using 'clean technique', if concentrations of mercury in the effluent from the CWTP has reasonable potential to cause or contribute to toxicity in the receiving water. Once approved by the Executive Officer, the Discharger shall conduct the study in accordance with the approved time schedule.

   If, after review of the study results, it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order may be reopened and effluent limitations or appropriate requirements (e.g. to participate in the development of a Total Maximum Daily Load), along with time schedules may be added for the subject constituent.

7. The Discharger must obtain prior written approval from the Executive Officer to discharge from the CWTP, Pioneer Reservoir, or the CSS for maintenance or equipment testing, when the discharges would not be required by wet weather conditions.

8. In the event of wet weather outflows from the Discharger's combined collection and conveyance system, the Discharger shall notify the Board within 24 hours of knowledge of such discharges, and shall confirm this notification in writing within 5 days. At a minimum, the written confirmation shall state the time, location, an estimate of the volume of the outflow, measures taken to inform persons who might come into contact with outflowed sewage, and measures taken to minimize reoccurrence.

9. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)".

10. The Discharger shall comply with Monitoring and Reporting Program No. 96-090, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.

    When requested by EPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

✓ 11. This Order expires on 1 March 2001 and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

12. This permit may be modified or revoked and reissued, as provided pursuant to 40 CFR 122.62 and 124.5, for the following reasons:

    a. To include new or revised conditions developed to comply with any State or Federal law or regulation that addresses CSOs that is adopted or promulgated subsequent to the effective date of this permit;

    b. To include new or revised conditions if new information, not available at the time of permit issuance, indicates that CSO controls imposed under the permit have failed to ensure the attainment of State water quality standards;

    c. To include new or revised conditions based on new information resulting from implementation of the long-term plan; or

    d. For any reason specified in 40 CFR 122.62.

13. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from, the State Water Resources Control Board (Division of Water Rights).

14. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

    To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing ~~is~~ a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 22 March 1996.

WILLIAM H. CROOKS, Executive Officer

PHL
Amended 3/22/96

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 96-090

NPDES NO. CA0079111

FOR
CITY OF SACRAMENTO
AND
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM
SACRAMENTO COUNTY

SUMP 2 INFLUENT MONITORING

Samples shall be collected at approximately the same time as effluent samples and should be representative of the influent for the period sampled. If no discharge from the Combined Wastewater Treatment Plant and/or Pioneer Reservoir is occurring, Sump 2 influent monitoring is not required. The following shall constitute the influent monitoring program:

Constituent	Units	Type of Sample	Sampling Frequency
Flow	mgd	Daily Mean and Range	Continuous
Suspended Matter	mg/l	Flow-weighted Composite over event	Each storm
Settleable Matter	ml/l	Grab	Each Storm

CWTP EFFLUENT MONITORING

CWTP effluent samples shall be collected downstream from the last connection through which wastes can be admitted into outfalls 002 and 003. Samples collected from the effluent structure will be considered adequately composited. The following shall constitute the effluent monitoring program:

Constituents	Units	Type of Sample	Sampling Frequency
Suspended Solids	mg/l	Flow-Weighted Composite over event	Each Event
Settleable Solids	ml/l	Grab	Each Event[1]
pH	pH Units	Grab	Each Event[1]
Fecal Coliform Organisms	MPN/100 ml	Grab	Each Event[1]
Chlorine Residual	mg/l	Grab	Each Event[1]
Flow	mgd	Meter[2]	Continuous
Temperature	°F	Grab	Each Event[1]
Dissolved Copper	µg/l	Grab	4 Events per year
Dissolved Lead	µg/l	Grab	4 Events per year
Dissolved Zinc	µg/l	Grab	4 Events per year
Diazinon[3]	µg/l	Grab	4 Events per year
Chlorpyriphos[3]	µg/l	Grab	4 Events per year
Diuron[3]	µg/l	Grab	4 Events per year

1 At least one grab sample during the first four hours of an event. If the duration of the discharge event is greater than 24 hours, daily samples shall be collected. An event is defined as a period of continuous operation of the Combined Wastewater Treatment Plant with subsequent discharge to the Sacramento River.

2 In addition, the number, duration, and total flow for each event shall be recorded.

3 Analytical method shall have a detection level no greater than 100 ng/l

PIONEER RESERVOIR EFFLUENT MONITORING

Pioneer effluent samples shall be collected downstream from the last connection through which wastes can be admitted into outfall 006. Samples collected from the effluent structure will be considered adequately composited. The following shall constitute the effluent monitoring program:

Constituents	Units	Type of Sample	Sampling Frequency
Flow	mgd	Meter[1]	Continuous
pH	pH Units	Grab	Each Event[2]
Dissolved Oxygen	mg/l	Grab	Each Event[2]
Temperature	°F/°C	Grab	Each Event[2]
Suspended Solids	mg/l	Flow-Weighted Composite	Each Event[2,3]
Settleable Solids	ml/l	Grab	Each Event[2,3]
Fecal Coliform Organisms	MPN/100 ml	Grab	Each Event[2,3]
Chlorine Residual	mg/l	Grab	Each Event[2,3]
Dissolved Copper	μg/l	Grab	4 Events per year
Dissolved Lead	μg/l	Grab	4 Events per year
Dissolved Zinc	μg/l	Grab	4 Events per year
Diazinon[4]	μg/l	Grab	4 Events per year
Chlorpyriphos[4]	μg/l	Grab	4 Events per year
Diuron[4]	μg/l	Grab	4 Events per year

1 In addition, the number, duration, and total flow for each event shall be recorded.

2 At least one grab sample during the first four hours of an event. If the duration of the discharge event is greater than 24 hours, daily samples shall be collected. An event is defined as a period of continuous discharge from the Pioneer Reservoir to the Sacramento River.

3 Monitoring to be implemented after completing upgrade to Pioneer Reservoir to a primary treatment facility with disinfection.

4 Analytical method shall have a detection level no greater than 100 ng/l

SACRAMENTO RIVER MONITORING

When the CWTP and/or the Pioneer Reservoir systems are discharging then the Sacramento River flow (in MGD, daily mean, and range) shall be recorded. In addition, grab samples of the receiving water shall be taken from the following:

Station	Description
R-1	Upstream of CSO outfalls, at the Delta King
R-2	Downstream of outfalls 006 and 007, at Miller Park
R-3	Downstream of outfalls 004 and 005, at Captains Table
R-4	Downstream of outfalls 002 and 003, at Wooden Stairs

Precise locations shall be determined by agreement between Regional Board and Sacramento City staffs.

Samples shall be collected at stations R-1 and R-2 when discharge is occurring at outfalls 006 and/or 007 for the Pioneer Reservoir discharge or Sump 1 bypass, stations R-2 and R-3 when discharge is occurring at outfalls 004 and/or 005 for the Sump 2 bypass, and stations R-3 and R-4 when discharge is occurring at 002 and/or 003 for the Combined Wastewater Treatment Plant discharge, according to the following:

Constituent	Units	Type of Sample	Sampling Frequency
pH	pH units	Grab	Each Event[1]
Temperature	°F/°C	Grab	Each Event[1]
Dissolved Oxygen	mg/l	Grab	Each Event[1]
Turbidity	NTUs	Grab	Each Event[1]

1 Within first four hours of beginning of storm causing discharge at the above discharge points (outfalls), daily if the discharge event is greater than 24 hours.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-l and R-4. Attention shall be given to the presence or absence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
d. Aquatic life
e. Visible films, sheens or coatings
f. Fungi, slimes, or objectionable growths
g. Potential nuisance conditions

Notes on receiving water conditions shall be summarized in the monitoring report.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **20th day of the month** following sample collection. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **30 January of each year**, the Discharger shall submit a written report to the Executive Officer containing the following:

a. The names, certificate grades, and general responsibilities of all persons employed at the WWTP (Standard Provision A.5).

b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

c. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).

d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

The Discharger may also be requested to submit an annual report to the Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by: ______________________
WILLIAM H. CROOKS, Executive Office

22 March 1996

PHL

INFORMATION SHEET

CITY OF SACRAMENTO AND
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM
SACRAMENTO COUNTY

The City of Sacramento owns and operates a combined sewer system (CSS) that serves 7000 acres in the downtown, East Sacramento and Land Park areas. An additional 2200 acres with separate sewers contributes sanitary sewage to the combined system. Sump 2 of the CSS pumps up to 60 mgd to the Sacramento Regional County Sanitation District's regional wastewater treatment plant (RWTP) for secondary treatment prior to discharge to the Sacramento River. This discharge is governed by Waste Discharge Requirements Order No. 94-006 (NPDES No. CA0077682). When flow to Sump 2 exceeds 60 mgd, the City operates its Combined Wastewater Treatment Plant (CWTP), where an additional 130 mgd of combined wastewater receives primary treatment with disinfection and discharge to the Sacramento River. The CWTP basins may also be used for storage of flows and diversion of flows back to the SRWTP. Flows to Sump 2 greater than 190 mgd are diverted to the 28 million gallon Pioneer Interceptor and Reservoir for storage. During major storms Sump 1/1A also pumps up to 120 mgd to Pioneer Reservoir. The stored combined wastewater is diverted back to the CWTP for treatment as treatment capacity allows, or is discharged to the Sacramento River after partial solids removal, if storm flows exceed total treatment and storage capacity. During extreme high flow conditions, discharges of untreated combined wastewater may occur at Sumps 1 and 2 bypass points. Collected screenings are hauled to a landfill, and sludges and other solids removed from liquid wastes are pumped through the collection system to the RWTP. Discharges from the CWTP, Pioneer Reservoir, and Sumps 1 and 2 bypass points are governed by these requirements.

The CSS has inadequate hydraulic capacity and is in need of rehabilitation. Because many of the pipelines are too small and have too flat a slope to accommodate flows during moderate and intense storms, numerous outflows of combined sewage and stormwater from the CSS have occurred over the last several years, predominantly out of plumbing fixtures located in basements and low-lying drop inlets and maintenance holes onto the streets. In addition, localized flooding of stormwater occurs in several areas because runoff is greater than the CSS capacity. Much of the system is old and needs rehabilitation or replacement.

On 22 June 1990 the Board adopted Cease and Desist Order No. 90-198 due to the outflows of combined wastewater resulting in a possible public health threat through potential human contact with the wastewater. Cease and Desist Order No. 90-198 was amended twice, by adoption of Order No. 91-199 on 6 September 1991, and Order No. 92-217 on 23 October 1992. The Cease and Desist Order and its amendments required the City, in part, to prevent outflows by undertaking operational improvements on the Combined Wastewater Collection and Treatment System, submitting technical reports and time schedules for improvements to the system, conducting additional monitoring to better quantify the benefits of separation of the system, and performing a risk assessment on the known and potential health impacts from the outflow of combined sewage, as feasible. The City has complied with the intent of Order No. 92-217.

The Board renewed the NPDES permit on 2 November 1990 by adoption of Order No. 90-315. The renewed permit maintains the discharge prohibition, specifications, and provisions found in Order No. 90-197, keeping Order No. 90-198 in effect.

The "*Retrospective Study Report: Public Health Risk Assessment for Outflows from the Combined Sewer System*", submitted by the City, was unable to provide a conclusive answer to whether or not outflows from the CSS constitute a human health risk, and additional studies were shown to not be cost effective to provide a better answer. There have been no documented outbreaks of waterborne diseases associated with CSS outflows. The City showed that a project to completely separate the sanitary and storm sewers would cost $381 million dollars, would be extremely disruptive due to extensive in-street construction, and would not result in significant decreases in outflows or flooding until the project is nearly complete in 20 years. The City is instead recommending a Long-Term Control Plan which includes system improvements to reduce flooding and outflows in the combined sewer system area resulting from a 1-year storm event (i.e. a storm with a 100% probability of occurring every year) to a 10-year (10% probability) storm event, as well as preventing flood waters from reaching the ground floor of buildings and houses in a 100-year (1% probability) storm event. The long-term program to achieve this goal is estimated to cost approximately $414 million in 1995 dollars, and will take many years to complete.

The City has committed to spend $10 million per year on the long-term program to improve and rehabilitate the combined sewer system. A portion of this amount will be used to finance long-term debt so that major projects can be completed early in the program. The City plans to construct $84.5 million in improvements and rehabilitation in the first five years of the program. Major projects scheduled for completion in the five year term of the permit include increasing the pumping capacity of Sumps 1/1A and 2, rehabilitating the two sumps, and converting Pioneer Reservoir into a primary treatment facility. In addition, local improvement projects (such as the 42nd Street drainage area storage structure) will be constructed, and old sewers will be rehabilitated or replaced.

The City has set the following interim goals to be met as progress is made towards the final goal: (a) obtaining protection from a 5-year storm in the six areas of worst flooding, (b) obtaining protection from a 5-year storm throughout the combined sewer system area, (c) obtaining protection from a 10-year storm in the six areas of worst flooding, and then (d) obtaining the goal of protection from a 10-year storm event throughout the combined sewer system.

All the improvements will be designed to ultimately provide 10-year outflow and flood protection when the entire program is finally completed, however the level of protection provided by a specific improvement project will vary. Increased pumping capacity at Sumps 1/1A and 2 are the most cost effective projects to reduce outflows and flooding throughout the combined sewer system area and, therefore, will be constructed first. The increased capacity at Sumps 1/1A and 2 reduce flooding and outflows by 611,000 cubic feet, or 10% during a 10-year storm. The 42nd Street project will provide protection from approximately a 5-year (20% probability) storm event until downstream improvements are completed, and up to approximately a 10-year storm event afterward.

A time schedule for implementation of the first five year plan is included in the NPDES permit. NPDES regulations normally prevent inclusion of time schedules within the permit for correction of existing violations. This time schedule, however, deals with elimination of outflows from the CSS within the urbanized area. These outflows do not flow to surface waters, but pond on the ground surface until hydraulic capacity is available in the CSS and the ponded water can drain back into the CSS for discharge through permitted discharge points. As the corrective actions required by the time schedule are not related to the discharges to surface waters, inclusion of the time schedules in the NPDES permit does not conflict with U.S. Environmental Protection Agency regulations.

On 8 September 1989 the Federal Register published the National (EPA) CSO Strategy. The strategy's main objectives are to bring all CSO discharges into compliance with technology-based requirements of the Clean Water Act and applicable water quality objectives, minimize water quality, aquatic biota, and human health impacts from wet weather overflows, and to ensure that, if CSO discharges occur, they are the result of wet weather. In response to the National CSO Strategy, the State Water Resources Control Board adopted Resolution 90-9 establishing a State Combined System Overflow Control Strategy. Finally, on 19 April 1994 the Federal Register published the CSO Control Policy. The Policy elaborates on the National CSO Strategy, and establishes a consistent national approach for CSO control. The key objectives of the Policy are that: (1) Dischargers should immediately implement the Nine Minimum Controls (NMC) which are technology-based actions or measures that can reduce CSOs and their effects on receiving water quality (no later than 1 January 1997); (2) Dischargers should give priority attention to environmentally sensitive areas; (3) Dischargers should develop Long-Term Control Plans (LTCPs) for controlling CSOs by either demonstrating the controls contribute to achievement of water quality standards or provide minimum treatment that is presumed to meet water quality standards; (4) States should review and revise, as appropriate, State water quality standards during the CSO long-term planning process; and (5) Financial capability should be taken into account when developing CSO control plans. These requirements implement the National and State CSO Strategies and Policy.

Effluent limitations for the CWTP are the same as the previous permit, except for coliform organisms. The previous effluent limit was for total coliform organisms to meet a storm year median of 1000 MPN/100 ml, and no three consecutive samples were to exceed 7000 MPN/100 ml. This permit requires that fecal coliform organisms meet a storm year median of 200 MPN/100 ml, and no three consecutive samples exceed 1000 MPN/100 ml. The receiving water limitations in the Basin Plan for body contact recreation (REC1) in the Sacramento River are based on fecal coliform concentrations. Changing the discharge standards from total to fecal coliform will make the discharge standards compatible with the receiving water standards.

Pioneer Reservoir will be upgraded over the term of this permit, and therefore effluent limitations would normally be prescribed for the Pioneer plant upon completion of the upgrade. However, at this time the design flow has not been determined, and the ability of Pioneer Reservoir to operate at the same removal efficiencies as the CWTP has not been proven. It is possible that Pioneer Reservoir will have a design flow established for primary treatment, equivalent to the CWTP, including disinfection, and will also have a higher design flow established for partial solids removal and disinfection for the purpose of minimizing CSO events. An Operations Plan is required to be developed which will outline how the CSS, RWTP, CWTP, and the Pioneer Reservoir Treatment Facility will be operated following upgrade of the facilities. For this reason, only effluent limitations for fecal coliform organisms and chlorine residual have been included for the Pioneer Reservoir Treatment Plant.

Based on results of water quality samples collected by the Discharger, there are indications that the discharge may contain a constituent (mercury) that has a reasonable potential to cause or contribute to toxicity in the receiving water. The Sacramento River frequently exceeds the 30-day average EPA Criteria of 0.012 µg/l to protect human health (due to bioaccumulation of mercury in fish tissue), and effluent from the CWTP also was found in excess of the criteria. The CWTP effluent data may not be indicative of the actual concentration of mercury, due to detection levels often above the criteria. Therefore, this Order contains provisions that (1) require the Discharger to use 'clean technique' for sample collection, handling, and analysis, in order to provide accurate information as to whether the levels of mercury in the discharge causes or contributes to an in-stream excursion above a water quality objective; (2) if the discharge causes or contributes to an in-stream toxicity caused by mercury, requires the Discharger to submit information to calculate effluent limitations for those constituents; and (3) allows the Board to reopen this Order and include effluent limitations for mercury.

Receiving water monitoring has been modified for this permit term. Monitoring stations have been reduced from six to four locations, to better coincide with the locations sampled in previous water quality studies. The locations will provide for upstream and downstream samples at each outfall location. Monitoring of the discharge from Pioneer Reservoir is changed from the previous permit, to require analyses for suspended solids, settleable solids, total coliform organisms and chlorine residual once upgrade to a primary treatment facility is completed.

Effluent toxicity monitoring has not been included in this permit. Results of testing conducted over the last five years has shown the discharges have had a negligible impact on the Sacramento River, in part due to the significant dilution available during discharge events. However, certain constituents of concern which have been shown to cause toxicity in stormwater discharges in urban areas have been included in the monitoring program. These include dissolved copper, lead and zinc (as well as mercury which will be part of a separate study), and the pesticides diazinon, chlorpyriphos, and diuron.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 96-089

RESCISSION OF CEASE AND DESIST ORDER NOS. 90-198 AND 92-217
FOR
THE CITY OF SACRAMENTO
COMBINED WASTEWATER COLLECTION AND TREATMENT SYSTEM
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The Board adopted Cease and Desist Order No. 90-198 in June 1990 against the City of Sacramento, Combined Wastewater Collection and Treatment System, (hereafter Discharger), for violation of Waste Discharge Requirements Order No. 90-197 due to outflows from the combined wastewater collection system resulting in a public health threat through potential human contact with the wastewater. The Board amended the Order in 1991 with Order No. 91-199, and again amended the Order on 23 October 1992 with Order No. 92-217. The Cease and Desist Order and its amendments required the City, in part, to prevent outflows by undertaking operational improvements on the Combined Wastewater Collection and Treatment System, submitting technical reports and time schedules for improvements to the system, conducting additional monitoring to better quantify the benefits of separation of the system, and performing a risk assessment on the known and potential health impacts from the outflow of combined sewage, as feasible. Order Nos. 90-198 and 92-217 remain in effect.

2. The Board has approved the City's proposed Long-Term Control Plan which includes system improvements to reduce flooding and outflows. Recommended projects include increasing the pumping capacities at Sumps 1 and 2, constructing below-ground storage facilities in areas prone to flooding, and converting the Pioneer Reservoir into a primary treatment plant with disinfection. The plan for the first five years will reduce flooding and outflows from approximately a 1-year event to a 5-year event. A time schedule to complete the improvements has been included in an NPDES permit.

3. The Discharger has complied with the Cease and Desist Orders.

4. The issuance of this Order is exempt from the Provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et. seq.), in accordance with Section 15321(a)(2), Title 14, California Code of Regulations.

5. The Board, on 22 March 1996, in Sacramento, California, held a public hearing and considered all evidence on this matter.

IT IS HEREBY ORDERED THAT Cease and Desist Order Nos. 90-198 and 92-217 are rescinded.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 22 March 1996.

WILLIAM H. CROOKS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL VALLEY REGION
3443 ROUTIER ROAD, SUITE A
SACRAMENTO, CA 95827-3098
PHONE: (916) 255-3000
FAX: (916) 255-3015

TO: Dischargers in the Central Valley Region

SUBJECT: ***PROPOSITION 65***

The Safe Drinking Water and Toxic Enforcement Act of 1986 (which was approved by the voters as Proposition 65 in the 1986 General Election) forbids businesses from discharging, into present or potential sources of drinking water, chemicals which have been listed by the Governor as causing cancer or reproductive toxicity. The prohibition does not take effect until 20 months after the chemical has been listed by the Governor.

The text of Proposition 65 may be found in the California Health and Safety Code, beginning with Section 25249.5. The lead agency for implementation of Proposition 65 is the Office of Environmental Health Hazard Assessment (OEHHA) of the California Environmental Protection Agency (Cal-EPA). A Scientific Advisory Panel, appointed by the Governor, is responsible for adding chemicals to the list of carcinogens and reproductive toxicants. The current list of Proposition 65 chemicals and their listing dates is attached. Information about these chemicals, as well as other information relating to Proposition 65, may be obtained by contacting OEHHA at 601 North 7th Street, P. O. Box 942732, Sacramento, California 94234-7320. This information is also published on a regular basis in the California Regulatory Notice Register and may be found in Title 22, Division 2 of the California Code of Regulations (CCR), beginning with Section 12000.

Since you discharge waste to surface or ground waters in the State, or you discharge waste to land where components of the discharge may migrate to and enter these waters, you should read the attached list carefully and determine if any chemical listed may be contained in your discharge. Even though you have a valid waste discharge permit or an NPDES permit which authorizes the discharge of waste containing a listed chemical, those permits do not insulate you from the requirements of Proposition 65. The law does not apply to public entities, to businesses with fewer than ten employees, or to a discharge which does not place a significant amount of a listed chemical in drinking water. A "significant amount" is defined by OEHHA regulations in Title 22 of CCR; you should contact that agency to be sure you understand their definitions. The burden of proof that a discharge does not involve a significant amount or a significant risk is placed on the discharger of the waste.

Even though OEHHA is doing what it can to aid dischargers in complying with Proposition 65, nothing it does will provide absolute immunity to lawsuits brought by either local prosecutors or individual citizens.

You should also be aware of a warning requirement contained in Proposition 65. Beginning 12 months from the date a chemical is listed by the Governor, it may be discharged only if people who may be exposed to the chemical have been notified of the potential exposure. Thus, even though a discharge will not be prohibited for 20 months after its chemical component is listed, it will be subject to the warning requirement after 12 months.

The following are answers by Regional Water Board staff to three of the most common questions you may have about Proposition 65. For additional information, please contact OEHHA at (916) 445-6900 or the State Water Resources Control Board at (916) 657-0687. Tell the person who answers that you are inquiring about Proposition 65.

Proposition 65 Discharge Prohibition
Questions & Answers

Proposition 65 prohibits the discharge of a listed chemical where any "significant amount" of the chemical will enter any "source of drinking water." There are three aspects of this discharge prohibition where uncertainty often exists:

1) ***What is a "source of drinking water"?***

   Proposition 65 defines "source of drinking water" as either a present source of drinking water or water which is designated in a *Water Quality Control Plan* (*Basin Plan*) adopted by a Regional Water Board as being suitable for domestic or municipal uses. However, in some cases, the Basin Plans are unclear as to which bodies of water have the potential for domestic or municipal uses. In May 1988, the State Water Resources Control Board adopted Resolution No. 88–63, *Adoption of Policy Entitled "Sources of Drinking Water"*, which clarifies this matter. A copy of this policy for water quality control is attached.

2) ***What is a "significant amount" of a listed chemical?***

   Proposition 65 defines a "significant amount" as a "detectable amount," unless the discharger can show that a greater amount poses no "significant risk" of cancer or reproductive toxicity. For some of the more common chemicals, OEHHA has issued regulations containing levels which represent daily exposures below which there is assumed to be no "significant risk." These regulatory levels may be found in Title 22, Division 2 of the California Code of Regulations. Sections 12705, 12709 and 12711 for carcinogens, and Section 12805 for reproductive toxicants.

3) ***How will these levels affect regulation of my discharge by the Regional Water Boards?***

   The Regional Water Boards may consider the Proposition 65 discharge prohibition in the development and revision of waste discharge requirements and NPDES permits. The State Water Resources Control Board has stated that regulatory limits promulgated by OEHHA will be considered in the modification of these permits by the Regional Water Boards. The State Water Board is currently developing specific guidance for the Regional Water Boards on how to use Proposition 65 regulatory levels in the revision of requirements and permits affecting surface waters.

Attachments

STATE OF CALIFORNIA

ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT

SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986

CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER OR REPRODUCTIVE TOXICITY

The Safe Drinking Water and Toxic Enforcement Act of 1986 requires that the Governor revise and republish at least once per year the list of chemicals known to the State to cause cancer or reproductive toxicity. The identification number indicated in the following list is the Chemical Abstracts Service (CAS) Registry Number. No CAS number is given when several substances are presented as a single listing. The date refers to the initial appearance of the chemical on the list.

CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER

Chemical	CAS Number	Date
A-alpha-C (2-Amino-9H-pyrido[2,3-b]indole)	26148685	January 1, 1990
Acetaldehyde	75070	April 1, 1988
Acetamide	60355	January 1, 1990
Acetochlor	34256821	January 1, 1989
2-Acetylaminofluorene	53963	July 1, 1987
Acifluorfen	62476599	January 1, 1990
Acrylamide	79061	January 1, 1990
Acrylonitrile	107131	July 1, 1987
Actinomycin D	50760	October 1, 1989
Adriamycin (Doxorubicin hydrochloride)	23214928	July 1, 1987
AF-2;[2-(2-furyl)-3-(5-nitro-2-furyl)]acrylamide	3688537	July 1, 1987
Aflatoxins	---	January 1, 1988
Alachlor	15972608	January 1, 1989
Alcoholic beverages, when associated with alcohol abuse	---	July 1, 1988
Aldrin	309002	July 1, 1988
Allyl chloride	107051	January 1, 1990
2-Aminoanthraquinone	117793	October 1, 1989
p-Aminoazobenzene	60093	January 1, 1990
ortho-Aminoazotoluene	97563	July 1, 1987
4-Aminobiphenyl (4-aminodiphenyl)	92671	February 27, 1987
3-Amino-9-ethylcarbazole hydrochloride	6109973	July 1, 1989
1-Amino-2-methylanthraquinone	82280	October 1, 1989
2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole	712685	July 1, 1987
Amitrole	61825	July 1, 1987
Analgesic mixtures containing phenacetin	---	February 27, 1987
Aniline	62533	January 1, 1990
ortho-Anisidine	90040	July 1, 1987
ortho-Anisidine hydrochloride	134292	July 1, 1987
Antimony oxide (Antimony trioxide)	1309644	October 1, 1990
Aramite	140578	July 1, 1987
Arsenic (inorganic arsenic compounds)	---	February 27, 1987
Asbestos	1332214	February 27, 1987
Auramine	492808	July 1, 1987
Azaserine	115026	July 1, 1987
Azathioprine	446866	February 27, 1987
Azacitidine	320672	January 1, 1992
Azobenzene	103333	January 1, 1990
Benz[a]anthracene	56553	July 1, 1987
Benzene	71432	February 27, 1987
Benzidine [and its salts]	92875	February 27, 1987
Benzidine-based dyes	---	October 1, 1992
Benzo[b]fluoranthene	205992	July 1, 1987
Benzo[j]fluoranthene	205823	July 1, 1987
Benzo[k]fluoranthene	207089	July 1, 1987
Benzofuran	271896	October 1, 1990
Benzo[a]pyrene	50328	July 1, 1987
Benzotrichloride	98077	July 1, 1987
Benzyl chloride	100447	January 1, 1990
Benzyl violet 4B	1694093	July 1, 1987
Beryllium and beryllium compounds	---	October 1, 1987
Betel quid with tobacco	---	January 1, 1990
Bis(2-chloroethyl)ether	111444	April 1, 1988
N,N-Bis(2-chloroethyl)-2-naphthylamine (Chlornapazine)	494031	February 27, 1987
Bischloroethyl nitrosourea (BCNU) (Carmustine)	154938	July 1, 1987
Bis(chloromethyl)ether	542881	February 27, 1987
Bitumens, extracts of steam-refined and air refined	---	January 1, 1990
Bracken fern	---	January 1, 1990
Bromodichloromethane	75274	January 1, 1990
Bromoform	75252	April 1, 1991
1,3-Butadiene	106990	April 1, 1988
1,4-Butanediol dimethanesulfonate (Busulfan)	55981	February 27, 1987
Butylated hydroxyanisole	25013165	January 1, 1990
beta-Butyrolactone	3068880	July 1, 1987
Cadmium and cadmium compounds	---	October 1, 1987
Caffeic acid	331395	October 1, 1994
Captafol	2425061	October 1, 1988
Captan	133062	January 1, 1990

Chemical	CAS Number	Date
Carbon tetrachloride	56235	October 1, 1987
Carbon-black extracts	---	January 1, 1990
Ceramic fibers (airborne particles of respirable size)	---	July 1, 1990
Certain combined chemotherapy for lymphomas	---	February 27, 1987
Chlorambucil	305033	February 27, 1987
Chloramphenicol	56757	October 1, 1989
Chlordane	57749	July 1, 1988
Chlordecone (Kepone)	143500	January 1, 1988
Chlordimeform	6164983	January 1, 1989
Chlorendic acid	115286	July 1, 1989
Chlorinated paraffins (Average chain length, C12, approximately 60 percent chlorine by weight)	108171262	July 1, 1989
p-Chloroaniline	106478	October 1, 1994
Chlorodibromomethane	124481	January 1, 1990
Chloroethane (Ethyl chloride)	75003	July 1, 1990
1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU) (Lomustine)	13010474	January 1, 1988
1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea (Methyl-CCNU)	13909096	October 1, 1988
Chloroform	67663	October 1, 1987
Chloromethyl methyl ether (technical grade)	107302	February 27, 1987
3-Chloro-2-methylpropene	563473	July 1, 1989
4-Chloro-ortho-phenylenediamine	95830	January 1, 1988
p-Chloro-o-toluidine	95692	January 1, 1990
Chlorothalonil	1897456	January 1, 1989
Chlorozotocin	54749905	January 1, 1992
Chromium (hexavalent compounds)	---	February 27, 1987
Chrysene	218019	January 1, 1990
C.I. Acid Red 114	6459945	July 1, 1992
C.I. Basic Red 9 monohydrochloride	569619	July 1, 1989
Ciclosporin (Cyclosporin A, Cyclosporine)	59865133 79217600	January 1, 1992
Cinnamyl anthranilate	87296	July 1, 1989
Cisplatin	15663271	October 1, 1988
Citrus Red No. 2	6358538	October 1, 1989
Cobalt metal powder	7440484	July 1, 1992
Cobalt [II] oxide	1307966	July 1, 1992
Coke oven emissions	---	February 27, 1987
Conjugated estrogens	---	February 27, 1987
Creosotes	---	October 1, 1988
para-Cresidine	120718	January 1, 1988
Cupferron	135206	January 1, 1988
Cycasin	14901087	January 1, 1988
Cyclophosphamide (anhydrous)	50180	February 27, 1987
Cyclophosphamide (hydrated)	6055192	February 27, 1987

Chemical	CAS Number	Date
D&C Orange No. 17	3468631	July 1, 1990
D&C Red No. 8	2092560	October 1, 1990
D&C Red No. 9	5160021	July 1, 1990
D&C Red No. 19	81889	July 1, 1990
Dacarbazine	4342034	January 1, 1988
Daminozide	1596845	January 1, 1990
Dantron (Chrysazin, 1,8-Dihydroxyanthraquinone)	117102	January 1, 1992
Daunomycin	20830813	January 1, 1988
DDD (Dichlorodiphenyldichloroethane)	72548	January 1, 1989
DDE (Dichlorodiphenyldichloroethylene)	72559	January 1, 1989
DDT (Dichlorodiphenyltrichloroethane)	50293	October 1, 1987
DDVP (Dichlorvos)	62737	January 1, 1989
N,N'-Diacetylbenzidine	613354	October 1, 1989
2,4-Diaminoanisole	615054	October 1, 1990
2,4-Diaminoanisole sulfate	39156417	January 1, 1988
4,4'-Diaminodiphenyl ether (4,4'-Oxydianiline)	101804	January 1, 1988
2,4-Diaminotoluene	95807	January 1, 1988
Diaminotoluene (mixed)	---	January 1, 1990
Dibenz[a,h]acridine	226368	January 1, 1988
Dibenz[a,j]acridine	224420	January 1, 1988
Dibenz[a,h]anthracene	53703	January 1, 1988
7H-Dibenzo[c,g]carbazole	194592	January 1, 1988
Dibenzo[a,e]pyrene	192654	January 1, 1988
Dibenzo[a,h]pyrene	189640	January 1, 1988
Dibenzo[a,i]pyrene	189559	January 1, 1988
Dibenzo[a,l]pyrene	191300	January 1, 1988
1,2-Dibromo-3-chloropropane (DBCP)	96128	July 1, 1987
2,3-Dibromo-1-propanol	96139	October 1, 1994
p-Dichlorobenzene	106467	January 1, 1989
3,3'-Dichlorobenzidine	91941	October 1, 1987
1,4-Dichloro-2-butene	764410	January 1, 1990
3,3'-Dichloro-4,4'-diaminodiphenyl ether	28434868	January 1, 1988
1,1-Dichloroethane	75343	January 1, 1990
Dichloromethane (Methylene chloride)	75092	April 1, 1988
1,2-Dichloropropane	78875	January 1, 1990
1,3-Dichloropropene	542756	January 1, 1989
Dieldrin	60571	July 1, 1988
Dienestrol	84173	January 1, 1990
Diepoxybutane	1464535	January 1, 1988
Diesel engine exhaust	---	October 1, 1990
Di(2-ethylhexyl)phthalate	117817	January 1, 1988
1,2-Diethylhydrazine	1615801	January 1, 1988

Chemical	CAS Number	Date
Diethyl sulfate	64675	January 1, 1988
Diethylstilbestrol	56531	February 27, 1987
Diglycidyl resorcinol ether (DGRE)	101906	July 1, 1989
Dihydrosafrole	94586	January 1, 1988
Diisopropyl sulfate	2973106	April 1, 1993
3,3'-Dimethoxybenzidine (ortho-Dianisidine)	119904	January 1, 1988
3,3'-Dimethoxybenzidine dihydrochloride (ortho-Dianisidine dihydrochloride)	20325400	October 1, 1990
Dimethyl sulfate	77781	January 1, 1988
4-Dimethylaminoazobenzene	60117	January 1, 1988
trans-2-[(Dimethylamino)methylimino]-5-[2-(5-nitro-2-furyl)vinyl]-1,3,4-oxadiazole	55738540	January 1, 1988
7,12-Dimethylbenz(a)anthracene	57976	January 1, 1990
3,3'-Dimethylbenzidine (ortho-Tolidine)	119937	January 1, 1988
3,3'-Dimethylbenzidine dihydrochloride	612828	April 1, 1992
Dimethylcarbamoyl chloride	79447	January 1, 1988
1,1-Dimethylhydrazine (UDMH)	57147	October 1, 1989
1,2-Dimethylhydrazine	540738	January 1, 1988
Dimethylvinylchloride	513371	July 1, 1989
1,6-Dinitropyrene	42397648	October 1, 1990
1,8-Dinitropyrene	42397659	October 1, 1990
2,4-Dinitrotoluene	121142	July 1, 1988
1,4-Dioxane	123911	January 1, 1988
Diphenylhydantoin (Phenytoin)	57410	January 1, 1988
Diphenylhydantoin (Phenytoin), sodium salt	630933	January 1, 1988
Direct Black 38 (technical grade)	1937377	January 1, 1988
Direct Blue 6 (technical grade)	2602462	January 1, 1988
Direct Brown 95 (technical grade)	16071866	October 1, 1988
Disperse Blue 1	2475458	October 1, 1990
Epichlorohydrin	106898	October 1, 1987
Erionite	12510428	October 1, 1988
Estradiol 17B	50282	January 1, 1988
Estrone	53167	January 1, 1988
Ethinylestradiol	57636	January 1, 1988
Ethyl acrylate	140885	July 1, 1989
Ethyl methanesulfonate	62500	January 1, 1988
Ethyl-4,4'-dichlorobenzilate	510156	January 1, 1990
Ethylene dibromide	106934	July 1, 1987
Ethylene dichloride (1,2-Dichloroethane)	107062	October 1, 1987
Ethylene oxide	75218	July 1, 1987
Ethylene thiourea	96457	January 1, 1988
Ethyleneimine	151564	January 1, 1988

Chemical	CAS Number	Date
Folpet	133073	January 1, 1989
Formaldehyde (gas)	50000	January 1, 1988
2-(2-Formylhydrazino)-4-(5-nitro-2-furyl)thiazole	3570750	January 1, 1988
Furan	110009	October 1, 1993
Furazolidone	67458	January 1, 1990
Furmecyclox	60568050	January 1, 1990
Gasoline engine exhaust (condensates/extracts)	—	October 1, 1990
Glasswool fibers (airborne particles of respirable size)	—	July 1, 1990
Glu-P-1 (2-Amino-6-methyldipyrido[1,2-a:3',2'-d]imidazole)	67730114	January 1, 1990
Glu-P-2 (2-Aminodipyrido[1,2-a:3',2'-d]imidazole)	67730103	January 1, 1990
Glycidaldehyde	765344	January 1, 1988
Glycidol	556525	July 1, 1990
Griseofulvin	126078	January 1, 1990
Gyromitrin (Acetaldehyde methylformylhydrazone)	16568028	January 1, 1988
HC Blue 1	2784943	July 1, 1989
Heptachlor	76448	July 1, 1988
Heptachlor epoxide	1024573	July 1, 1988
Hexachlorobenzene	118741	October 1, 1987
Hexachlorocyclohexane (technical grade)	—	October 1, 1987
Hexachlorodibenzodioxin	34465468	April 1, 1988
Hexachloroethane	67721	July 1, 1990
Hexamethylphosphoramide	680319	January 1, 1988
Hydrazine	302012	January 1, 1988
Hydrazine sulfate	10034932	January 1, 1988
Hydrazobenzene (1,2-Diphenylhydrazine)	122667	January 1, 1988
Indeno [1,2,3-cd]pyrene	193395	January 1, 1988
IQ (2-Amino-3-methylimidazo[4,5-f]quinoline)	76180966	April 1, 1990
Iron dextran complex	9004664	January 1, 1988
Isosafrole	120581	October 1, 1989
Lactofen	77501634	January 1, 1989
Lasiocarpine	303344	April 1, 1988
Lead acetate	301042	January 1, 1988
Lead and lead compounds	—	October 1, 1992
Lead phosphate	7446277	April 1, 1988
Lead subacetate	1335326	October 1, 1989
Lindane and other hexachlorocyclohexane isomers	—	October 1, 1989
ncozeb	8018017	January 1,

Chemical	CAS Number	Date
Maneb	12427382	January 1, 1990
Me-A-alpha-C (2-Amino-3-methyl 9H pyrido[2,3-b]indole)	68006837	January 1, 1990
Medroxyprogesterone acetate	71589	January 1, 1990
MeIQ(2-Amino-3,4-dimethylimidazo[4,5-f]quinoline)	7094112	October 1, 1994
MeIQx(2-Amino-3,8-dimethylimidazo[4,5-f]quinoxaline)	7500040	October 1, 1994
Melphalan	148823	February 27, 1987
Merphalan	531760	April 1, 1988
Mestranol	72333	April 1, 1988
8-Methoxypsoralen with ultraviolet A therapy	298817	February 27, 1987
5-Methoxypsoralen with ultraviolet A therapy	484208	October 1, 1988
2-Methylaziridine (Propyleneimine)	75558	January 1, 1988
Methylazoxymethanol	590965	April 1, 1988
Methylazoxymethanol acetate	592621	April 1, 1988
3-Methylcholanthrene	56495	January 1, 1990
5-Methylchrysene	3697243	April 1, 1988
4,4'-Methylene bis(2-chloroaniline)	101144	July 1, 1987
4,4'-Methylene bis(N,N-dimethyl)benzenamine	101611	October 1, 1989
4,4'-Methylene bis(2-methylaniline)	838880	April 1, 1988
4,4'-Methylenedianiline	101779	January 1, 1988
4,4'-Methylenedianiline dihydrochloride	13552448	January 1, 1988
Methylhydrazine and its salts	---	July 1, 1992
Methyl iodide	74884	April 1, 1988
Methyl methanesulfonate	66273	April 1, 1988
2-Methyl-1-nitroanthraquinone (of uncertain purity)	129157	April 1, 1988
N-Methyl-N'-nitro-N-nitrosoguanidine	70257	April 1, 1988
N-Methylolacrylamide	924425	July 1, 1990
Methylthiouracil	56042	October 1, 1989
Metiram	9006422	January 1, 1990
Metronidazole	443481	January 1, 1988
Michler's ketone	90948	January 1, 1988
Mirex	2385855	January 1, 1988
Mitomycin C	50077	April 1, 1988
Monocrotaline	315220	April 1, 1988
5-(Morpholinomethyl)-3-[(5-nitro-furfurylidene)-amino]-2-oxazolidinone	139913	April 1, 1988
Mustard Gas	505602	February 27, 1987
Nafenopin	3771195	April 1, 1988
1-Naphthylamine	134327	October 1, 1989
2-Naphthylamine	91598	February 27, 1987
Nickel and certain nickel compounds	---	October 1, 1989
Nickel carbonyl	13463393	October 1, 1987
Nickel refinery dust from the pyrometallurgical process	---	October 1, 1987
Nickel subsulfide	12035722	October 1, 1987
Niridazole	61574	April 1, 1988
Nitrilotriacetic acid	139139	January 1, 1988
Nitrilotriacetic acid, trisodium salt monohydrate	18662538	April 1, 1989
5-Nitroacenaphthene	602879	April 1, 1988
5-Nitro-o-anisidine	99592	October 1, 1989
o-Nitroanisole	91236	October 1, 1992
4-Nitrobiphenyl	92933	April 1, 1988
6-Nitrochrysene	7496028	October 1, 1990
Nitrofen (technical grade)	1836755	January 1, 1988
2-Nitrofluorene	607578	October 1, 1990
Nitrofurazone	59870	January 1, 1990
1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	555840	April 1, 1988
N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide	531828	April 1, 1988
Nitrogen mustard (Mechlorethamine)	51752	January 1, 1988
Nitrogen mustard hydrochloride (Mechlorethaminehydrochloride)	55867	April 1, 1988
Nitrogen mustard N-oxide	126852	April 1, 1988
Nitrogen mustard N-oxide hydrochloride	302705	April 1, 1988
2-Nitropropane	79469	January 1, 1988
1-Nitropyrene	5522430	October 1, 1990
4-Nitropyrene	57835924	October 1, 1990
N-Nitrosodi-n-butylamine	924163	October 1, 1987
N-Nitrosodiethanolamine	1116547	January 1, 1988
N-Nitrosodiethylamine	55185	October 1, 1987
N-Nitrosodimethylamine	62759	October 1, 1987
p-Nitrosodiphenylamine	156105	January 1, 1988
N-Nitrosodiphenylamine	86306	April 1, 1988
N-Nitrosodi-n-propylamine	621647	January 1, 1988
N-Nitroso-N-ethylurea	759739	October 1, 1987
3-(N-Nitrosomethylamino)propionitrile	60153493	April 1, 1990
4-(N-Nitrosomethylamino)-1-(3-pyridyl)1-butanone	64091914	April 1, 1990
N-Nitrosomethylethylamine	10595956	October 1, 1989
N-Nitroso-N-methylurea	684935	October 1, 1987
N-Nitroso-N-methylurethane	615532	April 1, 1988
N-Nitrosomethylvinylamine	4549400	January 1, 1988
N-Nitrosomorpholine	59892	January 1, 1988
N-Nitrosonornicotine	16543558	January 1, 1988
N-Nitrosopiperidine	100754	January 1, 1988
N-Nitrosopyrrolidine	930552	October 1, 1987
N-Nitrososarcosine	13256229	January 1, 1988
Norethisterone (Norethindrone)	68224	October 1, 1989
Ochratoxin A	303479	July 1, 1990

STATE OF CALIFORNIA

ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT

SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986

CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER OR REPRODUCTIVE TOXICITY

The Safe Drinking Water and Toxic Enforcement Act of 1986 requires that the Governor revise and republish at least once per year the list of chemicals known to the State to cause cancer or reproductive toxicity. The identification number indicated in the following list is the Chemical Abstracts Service (CAS) Registry Number. No CAS number is given when several substances are presented as a single listing. The date refers to the initial appearance of the chemical on the list.

CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER

Chemical	CAS Number	Date
A-alpha-C (2-Amino-9H-pyrido[2,3-b]indole)	26148685	January 1, 1990
Acetaldehyde	75070	April 1, 1988
Acetamide	60355	January 1, 1990
Acetochlor	34256821	January 1, 1989
2-Acetylaminofluorene	53963	July 1, 1987
Acifluorfen	62476599	January 1, 1990
Acrylamide	79061	January 1, 1990
Acrylonitrile	107131	July 1, 1987
Actinomycin D	50760	October 1, 1989
Adriamycin (Doxorubicin hydrochloride)	23214928	July 1, 1987
AF-2;[2-(2-furyl)-3-(5-nitro-2-furyl)]acrylamide	3688537	July 1, 1987
Aflatoxins	---	January 1, 1988
Alachlor	15972608	January 1, 1989
Alcoholic beverages, when associated with alcohol abuse	---	July 1, 1988
Aldrin	309002	July 1, 1988
Allyl chloride	107051	January 1, 1990
2-Aminoanthraquinone	117793	October 1, 1989
p-Aminoazobenzene	60093	January 1, 1990
ortho-Aminoazotoluene	97563	July 1, 1987
4-Aminobiphenyl (4-aminodiphenyl)	92671	February 27, 1987
3-Amino-9-ethylcarbazole hydrochloride	6109973	July 1, 1989
1-Amino-2-methylanthraquinone	82280	October 1, 1989
2-Amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole	712685	July 1, 1987
Amitrole	61825	July 1, 1987
Analgesic mixtures containing phenacetin	---	February 27, 1987
Aniline	62533	January 1, 1990
ortho-Anisidine	90040	July 1, 1987
ortho-Anisidine hydrochloride	134292	July 1, 1987
Antimony oxide (Antimony trioxide)	1309644	October 1, 1990
Aramite	140578	July 1, 1987
Arsenic (inorganic arsenic compounds)	---	February 27, 1987
Asbestos	1332214	February 27, 1987
Auramine	492808	July 1, 1987
Azaserine	115026	July 1, 1987
Azathioprine	446866	February 27, 1987
Azacitidine	320672	January 1, 1992
Azobenzene	103333	January 1, 1990
Benz[a]anthracene	56553	July 1, 1987
Benzene	71432	February 27, 1987
Benzidine [and its salts]	92875	February 27, 1987
Benzidine-based dyes	---	October 1, 1992
Benzo[b]fluoranthene	205992	July 1, 1987
Benzo[j]fluoranthene	205823	July 1, 1987
Benzo[k]fluoranthene	207089	July 1, 1987
Benzofuran	271896	October 1, 1990
Benzo[a]pyrene	50328	July 1, 1987
Benzotrichloride	98077	July 1, 1987
Benzyl chloride	100447	January 1, 1990
Benzyl violet 4B	1694093	July 1, 1987
Beryllium and beryllium compounds	---	October 1, 1987
Betel quid with tobacco	---	January 1, 1990
Bis(2-chloroethyl)ether	111444	April 1, 1988
N,N-Bis(2-chloroethyl)-2-naphthylamine (Chlornapazine)	494031	February 27, 1987
Bischloroethyl nitrosourea (BCNU) (Carmustine)	154938	July 1, 1987
Bis(chloromethyl)ether	542881	February 27, 1987
Bitumens, extracts of steam-refined and air refined	---	January 1, 1990
Bracken fern	---	January 1, 1990
Bromodichloromethane	75274	January 1, 1990
Bromoform	75252	April 1, 1991
1,3-Butadiene	106990	April 1, 1988
1,4-Butanediol dimethanesulfonate (Busulfan)	55981	February 27, 1987
Butylated hydroxyanisole	25013165	January 1, 1990
beta-Butyrolactone	3068880	July 1, 1987
Cadmium and cadmium compounds	---	October 1, 1987
Caffeic acid	331395	October 1, 1994
Captafol	2425061	October 1, 1988
Captan	133062	January 1, 1990

Chemical	CAS Number	Date
Carbon tetrachloride	56235	October 1, 1987
Carbon-black extracts	---	January 1, 1990
Ceramic fibers (airborne particles of respirable size)	---	July 1, 1990
Certain combined chemotherapy for lymphomas	---	February 27, 1987
Chlorambucil	305033	February 27, 1987
Chloramphenicol	56757	October 1, 1989
Chlordane	57749	July 1, 1988
Chlordecone (Kepone)	143500	January 1, 1988
Chlordimeform	6164983	January 1, 1989
Chlorendic acid	115286	July 1, 1989
Chlorinated paraffins (Average chain length, C12, approximately 60 percent chlorine by weight)	108171262	July 1, 1989
p-Chloroaniline	106478	October 1, 1994
Chlorodibromomethane	124481	January 1, 1990
Chloroethane (Ethyl chloride)	75003	July 1, 1990
1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU) (Lomustine)	13010474	January 1, 1988
1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea (Methyl-CCNU)	13909096	October 1, 1988
Chloroform	67663	October 1, 1987
Chloromethyl methyl ether (technical grade)	107302	February 27, 1987
3-Chloro-2-methylpropene	563473	July 1, 1989
4-Chloro-ortho-phenylenediamine	95830	January 1, 1988
p-Chloro-o-toluidine	95692	January 1, 1990
Chlorothalonil	1897456	January 1, 1989
Chlorozotocin	54749905	January 1, 1992
Chromium (hexavalent compounds)	---	February 27, 1987
Chrysene	218019	January 1, 1990
C.I. Acid Red 114	6459945	July 1, 1992
C.I. Basic Red 9 monohydrochloride	569619	July 1, 1989
Ciclosporin (Cyclosporin A, Cyclosporine)	59865133 79217600	January 1, 1992
Cinnamyl anthranilate	87296	July 1, 1989
Cisplatin	15663271	October 1, 1988
Citrus Red No. 2	6358538	October 1, 1989
Cobalt metal powder	7440484	July 1, 1992
Cobalt [II] oxide	1307966	July 1, 1992
Coke oven emissions	---	February 27, 1987
Conjugated estrogens	---	February 27, 1987
Creosotes	---	October 1, 1988
para-Cresidine	120718	January 1, 1988
Cupferron	135206	January 1, 1988
Cycasin	14901087	January 1, 1988
Cyclophosphamide (anhydrous)	50180	February 27, 1987
Cyclophosphamide (hydrated)	6055192	February 27, 1987

Chemical	CAS Number	Date
D&C Orange No. 17	3468631	July 1, 1990
D&C Red No. 8	2092560	October 1, 1990
D&C Red No. 9	5160021	July 1, 1990
D&C Red No. 19	81889	July 1, 1990
Dacarbazine	4342034	January 1, 1988
Daminozide	1596845	January 1, 1990
Dantron (Chrysazin, 1,8-Dihydroxyanthraquinone)	117102	January 1, 1992
Daunomycin	20830813	January 1, 1988
DDD (Dichlorodiphenyldichloroethane)	72548	January 1, 1989
DDE (Dichlorodiphenyldichloroethylene)	72559	January 1, 1989
DDT (Dichlorodiphenyltrichloroethane)	50293	October 1, 1987
DDVP (Dichlorvos)	62737	January 1, 1989
N,N'-Diacetylbenzidine	613354	October 1, 1989
2,4-Diaminoanisole	615054	October 1, 1990
2,4-Diaminoanisole sulfate	39156417	January 1, 1988
4,4'-Diaminodiphenyl ether (4,4'-Oxydianiline)	101804	January 1, 1988
2,4-Diaminotoluene	95807	January 1, 1988
Diaminotoluene (mixed)	---	January 1, 1990
Dibenz[a,h]acridine	226368	January 1, 1988
Dibenz[a,j]acridine	224420	January 1, 1988
Dibenz[a,h]anthracene	53703	January 1, 1988
7H-Dibenzo[c,g]carbazole	194592	January 1, 1988
Dibenzo[a,e]pyrene	192654	January 1, 1988
Dibenzo[a,h]pyrene	189640	January 1, 1988
Dibenzo[a,i]pyrene	189559	January 1, 1988
Dibenzo[a,l]pyrene	191300	January 1, 1988
1,2-Dibromo-3-chloropropane (DBCP)	96128	July 1, 1987
2,3-Dibromo-1-propanol	96139	October 1, 1994
p-Dichlorobenzene	106467	January 1, 1989
3,3'-Dichlorobenzidine	91941	October 1, 1987
1,4-Dichloro-2-butene	764410	January 1, 1990
3,3'-Dichloro-4,4'-diaminodiphenyl ether	28434868	January 1, 1988
1,1-Dichloroethane	75343	January 1, 1990
Dichloromethane (Methylene chloride)	75092	April 1, 1988
1,2-Dichloropropane	78875	January 1, 1990
1,3-Dichloropropene	542756	January 1, 1989
Dieldrin	60571	July 1, 1988
Dienestrol	84173	January 1, 1990
Diepoxybutane	1464535	January 1, 1988
Diesel engine exhaust	---	October 1, 1990
Di(2-ethylhexyl)phthalate	117817	January 1, 1988
1,2-Diethylhydrazine	1615801	January 1, 1988

Chemical	CAS Number	Date
Diethyl sulfate	64675	January 1, 1988
Diethylstilbestrol	56531	February 27, 1987
Diglycidyl resorcinol ether (DGRE)	101906	July 1, 1989
Dihydrosafrole	94586	January 1, 1988
Diisopropyl sulfate	2973106	April 1, 1993
3,3'-Dimethoxybenzidine (ortho-Dianisidine)	119904	January 1, 1988
3,3'-Dimethoxybenzidine dihydrochloride (ortho-Dianisidine dihydrochloride)	20325400	October 1, 1990
Dimethyl sulfate	77781	January 1, 1988
4-Dimethylaminoazobenzene	60117	January 1, 1988
trans-2-[(Dimethylamino)methylimino]-5-[2-(5-nitro-2-furyl)vinyl]-1,3,4-oxadiazole	55738540	January 1, 1988
7,12-Dimethylbenz(a)anthracene	57976	January 1, 1990
3,3'-Dimethylbenzidine (ortho-Tolidine)	119937	January 1, 1988
3,3'-Dimethylbenzidine dihydrochloride	612828	April 1, 1992
Dimethylcarbamoyl chloride	79447	January 1, 1988
1,1-Dimethylhydrazine (UDMH)	57147	October 1, 1989
1,2-Dimethylhydrazine	540738	January 1, 1988
Dimethylvinylchloride	513371	July 1, 1989
1,6-Dinitropyrene	42397648	October 1, 1990
1,8-Dinitropyrene	42397659	October 1, 1990
2,4-Dinitrotoluene	121142	July 1, 1988
1,4-Dioxane	123911	January 1, 1988
Diphenylhydantoin (Phenytoin)	57410	January 1, 1988
Diphenylhydantoin (Phenytoin), sodium salt	630933	January 1, 1988
Direct Black 38 (technical grade)	1937377	January 1, 1988
Direct Blue 6 (technical grade)	2602462	January 1, 1988
Direct Brown 95 (technical grade)	16071866	October 1, 1988
Disperse Blue 1	2475458	October 1, 1990
Epichlorohydrin	106898	October 1, 1987
Erionite	12510428	October 1, 1988
Estradiol 17B	50282	January 1, 1988
Estrone	53167	January 1, 1988
Ethinylestradiol	57636	January 1, 1988
Ethyl acrylate	140885	July 1, 1989
Ethyl methanesulfonate	62500	January 1, 1988
Ethyl-4,4'-dichlorobenzilate	510156	January 1, 1990
Ethylene dibromide	106934	July 1, 1987
Ethylene dichloride (1,2-Dichloroethane)	107062	October 1, 1987
Ethylene oxide	75218	July 1, 1987
Ethylene thiourea	96457	January 1, 1988
[illegible]	151564	January 1, 1988

Chemical	CAS Number	Date
Folpet	133073	January 1, 1989
Formaldehyde (gas)	50000	January 1, 1988
2-(2-Formylhydrazino)-4-(5-nitro-2-furyl)thiazole	3570750	January 1, 1988
Furan	110009	October 1, 1993
Furazolidone	67458	January 1, 1990
Furmecyclox	60568050	January 1, 1990
Gasoline engine exhaust (condensates/extracts)	—	October 1, 1990
Glasswool fibers (airborne particles of respirable size)	—	July 1, 1990
Glu-P-1 (2-Amino-6-methyldipyrido[1,2-a:3',2'-d]imidazole)	67730114	January 1, 1990
Glu-P-2 (2-Aminodipyrido[1,2-a:3',2'-d]imidazole)	67730103	January 1, 1990
Glycidaldehyde	765344	January 1, 1988
Glycidol	556525	July 1, 1990
Griseofulvin	126078	January 1, 1990
Gyromitrin (Acetaldehyde methylformylhydrazone)	16568028	January 1, 1988
HC Blue 1	2784943	July 1, 1989
Heptachlor	76448	July 1, 1988
Heptachlor epoxide	1024573	July 1, 1988
Hexachlorobenzene	118741	October 1, 1987
Hexachlorocyclohexane (technical grade)	—	October 1, 1987
Hexachlorodibenzodioxin	34465468	April 1, 1988
Hexachloroethane	67721	July 1, 1990
Hexamethylphosphoramide	680319	January 1, 1988
Hydrazine	302012	January 1, 1988
Hydrazine sulfate	10034932	January 1, 1988
Hydrazobenzene (1,2-Diphenylhydrazine)	122667	January 1, 1988
Indeno [1,2,3-cd]pyrene	193395	January 1, 1988
IQ (2-Amino-3-methylimidazo[4,5-f]quinoline)	76180966	April 1, 1990
Iron dextran complex	9004664	January 1, 1988
Isosafrole	120581	October 1, 1989
Lactofen	77501634	January 1, 1989
Lasiocarpine	303344	April 1, 1988
Lead acetate	301042	January 1, 1988
Lead and lead compounds	—	October 1, 1992
Lead phosphate	7446277	April 1, 1988
Lead subacetate	1335326	October 1, 1989
Lindane and other hexachlorocyclohexane isomers	—	October 1, 1989
ncozeb	8018017	January 1,

Chemical	CAS Number	Date
Maneb	12427382	January 1, 1990
Me-A-alpha-C (2-Amino-3-methyl-9H-pyrido[2,3-b]indole)	68006837	January 1, 1990
Medroxyprogesterone acetate	71589	January 1, 1990
MeIQ(2-Amino-3,4-dimethylimidazo[4,5-f]quinoline)	7094112	October 1, 1994
MeIQx(2-Amino-3,8-dimethylimidazo[4,5-f]quinoxaline)	7500040	October 1, 1994
Melphalan	148823	February 27, 1987
Merphalan	531760	April 1, 1988
Mestranol	72333	April 1, 1988
8-Methoxypsoralen with ultraviolet A therapy	298817	February 27, 1987
5-Methoxypsoralen with ultraviolet A therapy	484208	October 1, 1988
2-Methylaziridine (Propyleneimine)	75558	January 1, 1988
Methylazoxymethanol	590965	April 1, 1988
Methylazoxymethanol acetate	592621	April 1, 1988
3-Methylcholanthrene	56495	January 1, 1990
5-Methylchrysene	3697243	April 1, 1988
4,4'-Methylene bis(2-chloroaniline)	101144	July 1, 1987
4,4'-Methylene bis(N,N-dimethyl)benzenamine	101611	October 1, 1989
4,4'-Methylene bis(2-methylaniline)	838880	April 1, 1988
4,4'-Methylenedianiline	101779	January 1, 1988
4,4'-Methylenedianiline dihydrochloride	13552448	January 1, 1988
Methylhydrazine and its salts	---	July 1, 1992
Methyl iodide	74884	April 1, 1988
Methyl methanesulfonate	66273	April 1, 1988
2-Methyl-1-nitroanthraquinone (of uncertain purity)	129157	April 1, 1988
N-Methyl-N'-nitro-N-nitrosoguanidine	70257	April 1, 1988
N-Methylolacrylamide	924425	July 1, 1990
Methylthiouracil	56042	October 1, 1989
Metiram	9006422	January 1, 1990
Metronidazole	443481	January 1, 1988
Michler's ketone	90948	January 1, 1988
Mirex	2385855	January 1, 1988
Mitomycin C	50077	April 1, 1988
Monocrotaline	315220	April 1, 1988
5-(Morpholinomethyl)-3-[(5-nitro-furfurylidene)-amino]-2-oxazolidinone	139913	April 1, 1988
Mustard Gas	505602	February 27, 1987
Nafenopin	3771195	April 1, 1988
1-Naphthylamine	134327	October 1, 1989
2-Naphthylamine	91598	February 27, 1987
Nickel and certain nickel compounds	---	October 1, 1989
Nickel carbonyl	13463393	October 1, 1987
Nickel refinery dust from the pyrometallurgical process	---	October 1, 1987

Chemical	CAS Number	Date
Nickel subsulfide	12035722	October 1, 1987
Niridazole	61574	April 1, 1988
Nitrilotriacetic acid	139139	January 1, 1988
Nitrilotriacetic acid, trisodium salt monohydrate	18662538	April 1, 1989
5-Nitroacenaphthene	602879	April 1, 1988
5-Nitro-o-anisidine	99592	October 1, 1989
o-Nitroanisole	91236	October 1, 1992
4-Nitrobiphenyl	92933	April 1, 1988
6-Nitrochrysene	7496028	October 1, 1990
Nitrofen (technical grade)	1836755	January 1, 1988
2-Nitrofluorene	607578	October 1, 1990
Nitrofurazone	59870	January 1, 1990
1-[(5-Nitrofurfurylidene)-amino]-2-imidazolidinone	555840	April 1, 1988
N-[4-(5-Nitro-2-furyl)-2-thiazolyl]acetamide	531828	April 1, 1988
Nitrogen mustard (Mechlorethamine)	51752	January 1, 1988
Nitrogen mustard hydrochloride (Mechlorethaminehydrochloride)	55867	April 1, 1988
Nitrogen mustard N-oxide	126852	April 1, 1988
Nitrogen mustard N-oxide hydrochloride	302705	April 1, 1988
2-Nitropropane	79469	January 1, 1988
1-Nitropyrene	5522430	October 1, 1990
4-Nitropyrene	57835924	October 1, 1990
N-Nitrosodi-n-butylamine	924163	October 1, 1987
N-Nitrosodiethanolamine	1116547	January 1, 1988
N-Nitrosodiethylamine	55185	October 1, 1987
N-Nitrosodimethylamine	62759	October 1, 1987
p-Nitrosodiphenylamine	156105	January 1, 1988
N-Nitrosodiphenylamine	86306	April 1, 1988
N-Nitrosodi-n-propylamine	621647	January 1, 1988
N-Nitroso-N-ethylurea	759739	October 1, 1987
3-(N-Nitrosomethylamino)propionitrile	60153493	April 1, 1990
4-(N-Nitrosomethylamino)-1-(3-pyridyl)-1-butanone	64091914	April 1, 1990
N-Nitrosomethylethylamine	10595956	October 1, 1989
N-Nitroso-N-methylurea	684935	October 1, 1987
N-Nitroso-N-methylurethane	615532	April 1, 1988
N-Nitrosomethylvinylamine	4549400	January 1, 1988
N-Nitrosomorpholine	59892	January 1, 1988
N-Nitrosonornicotine	16543558	January 1, 1988
N-Nitrosopiperidine	100754	January 1, 1988
N-Nitrosopyrrolidine	930552	October 1, 1987
N-Nitrososarcosine	13256229	January 1, 1988
Norethisterone (Norethindrone)	68224	October 1, 1989
Ochratoxin A	303479	July 1, 1990

Chemical	CAS Number	Date
Oil Orange SS	2646175	April 1, 1988
Oral contraceptives, combined	---	October 1, 1989
Oral contraceptives, sequential	---	October 1, 1989
Oxadiazon	19666309	July 1, 1991
Oxymetholone	434071	January 1, 1988
Oxazepam	604751	October 1, 1994
Panfuran S	794934	January 1, 1988
Pentachlorophenol	87865	January 1, 1990
Phenacetin	62442	October 1, 1989
Phenazopyridine	94780	January 1, 1988
Phenazopyridine hydrochloride	136403	January 1, 1988
Phenesterin	3546109	July 1, 1989
Phenobarbital	50066	January 1, 1990
Phenoxybenzamine	59961	April 1, 1988
Phenoxybenzamine hydrochloride	63923	April 1, 1988
Phenyl glycidyl ether	122601	October 1, 1990
Phenylhydrazine and its salts	---	July 1, 1992
o-Phenylphenate, sodium	132274	January 1, 1990
PhIP(2-Amino-1-methyl-6-phenylimidazo[4,5-b]pyridine)	105650235	October 1, 1994
Polybrominated biphenyls	---	January 1, 1988
Polychlorinated biphenyls	---	October 1, 1989
Polychlorinated biphenyls (containing 60 or more percent chlorine by molecular weight)	---	January 1, 1988
Polychlorinated dibenzo-p-dioxins	---	October 1, 1992
Polychlorinated dibenzofurans	---	October 1, 1992
Polygeenan	53973981	January 1, 1988
Ponceau MX	3761533	April 1, 1988
Ponceau 3R	3564098	April 1, 1988
Potassium bromate	7758012	January 1, 1990
Procarbazine	671169	January 1, 1988
Procarbazine hydrochloride	366701	January 1, 1988
Procymidone	32809168	October 1, 1994
Progesterone	57830	January 1, 1988
1,3-Propane sultone	1120714	January 1, 1988
Propargite	2312358	October 1, 1994
beta-Propiolactone	57578	January 1, 1988
Propylene oxide	75569	October 1, 1988
Propylthiouracil	51525	January 1, 1988
Radionuclides	---	July 1, 1989
Reserpine	50555	October 1, 1989
Residual (heav[illegible] oils	---	October 1, 1990

Chemical	CAS Number	Date
Saccharin	81072	October 1, 1989
Saccharin, sodium	128449	January 1, 1988
Safrole	94597	January 1, 1988
Selenium sulfide	7446346	October 1, 1989
Shale-oils	68308349	April 1, 1990
Silica, crystalline (airborne particles of respirable size)	---	October 1, 1988
Soots, tars, and mineral oils (untreated and mildly treated oils and used engine oils)	---	February 27, 1987
Sterigmatocystin	10048132	April 1, 1988
Streptozotocin	18883664	January 1, 1988
Styrene oxide	96093	October 1, 1988
Sulfallate	95067	January 1, 1988
Talc containing asbestiform fibers	---	April 1, 1990
Terrazole	2593159	October 1, 1994
Testosterone and its esters	58220	April 1, 1988
2,3,7,8-Tetrachlorodibenzo-para-dioxin (TCDD)	1746016	January 1, 1988
1,1,2,2-Tetrachloroethane	79345	July 1, 1990
Tetrachloroethylene (Perchloroethylene)	127184	April 1, 1988
p-a,a,a-Tetrachlorotoluene	5216251	January 1, 1990
Tetranitromethane	509148	July 1, 1990
Thioacetamide	62555	January 1, 1988
4,4'-Thiodianiline	139651	April 1, 1988
Thiourea	62566	January 1, 1988
Thorium dioxide	1314201	February 27, 1987
Tobacco, oral use of smokeless products	---	April 1, 1988
Tobacco smoke	---	April 1, 1988
Toluene diisocyanate	26471625	October 1, 1989
ortho-Toluidine	95534	January 1, 1988
ortho-Toluidine hydrochloride	636215	January 1, 1988
para-Toluidine	106490	January 1, 1990
Toxaphene (Polychlorinated camphenes)	8001352	January 1, 1988
Treosulfan	299752	February 27, 1987
Trichlormethine (Trimustine hydrochloride)	817094	January 1, 1992
2,4,6-Trichlorophenol	88062	January 1, 1988
Triphenyltin hydroxide	76879	July 1, 1992
Trichloroethylene	79016	April 1, 1988
Tris(aziridinyl)-para-benzoquinone (Triaziquone)	68768	October 1, 1989
Tris(1-aziridinyl)phosphine sulfide (Thiotepa)	52244	January 1, 1988
Tris(2-chloroethyl) phosphate	115968	April 1, 1992
Tris(2,3-dibromopropyl)phosphate	126727	January 1, 1988
Trp-P-1 (Tryptophan-P-1)	62450060	April 1, 1988
Trp-P-2 (Tryptophan-P-2)	62450071	April 1, 1[illegible]

Chemical	CAS Number	Date
Trypan blue (commercial grade)	72571	October 1, 1989
Unleaded gasoline (wholly vaporized)	---	April 1, 1988
Uracil mustard	66751	April 1, 1988
Urethane (Ethyl carbamate)	51796	January 1, 1988
Vinyl bromide	593602	October 1, 1988
Vinyl chloride	75014	February 27, 1987
4-Vinyl-1-cyclohexene diepoxide (Vinyl cyclohexenedioxide)	106876	July 1, 1990
Vinyl trichloride (1,1,2-Trichloroethane)	79005	October 1, 1990
2,6-Xylidine (2,6-Dimethylaniline)	87627	January 1, 1991
Zineb	12122677	January 1, 1990

CHEMICALS KNOWN TO THE STATE TO CAUSE REPRODUCTIVE TOXICITY

Developmental toxicity

Chemical	CAS Number	Date
Acetohydroxamic acid	546883	April 1, 1990
Actinomycin D	50760	October 1, 1992
All-trans retinoic acid	302794	January 1, 1989
Alprazolam	28981977	July 1, 1990
Amikacin sulfate	39831555	July 1, 1990
Aminoglutethimide	125848	July 1, 1990
Aminoglycosides	---	October 1, 1992
Aminopterin	54626	July 1, 1987
Angiotensin converting enzyme (ACE) inhibitors	---	October 1, 1992
Anisindione	117373	October 1, 1992
Aspirin (NOTE. It is especially important not to use aspirin during the last three months of pregnancy, unless specifically directed to do so by a physician because it may cause problems in the unborn child or complications during delivery.)	50782	July 1, 1990
Barbiturates	---	October 1, 1992
Benomyl	17804352	July 1, 1991
Benzphetamine hydrochloride	5411223	April 1, 1990
Benzodiazepines	---	October 1, 1992
Bischloroethyl nitrosourea (BCNU) (Carmustine)	154938	July 1, 1990
Bromoxynil	1689845	October 1, 1990
Butabarbital sodium	143817	October 1, 1992

Chemical	CAS Number	Date
1,4-Butanediol dimethylsulfonate (Busulfan)	55981	January 1, 1989
Carbon disulfide	75150	July 1, 1989
Carbon monoxide	630080	July 1, 1989
Carboplatin	41575944	July 1, 1990
Chenodiol	474259	April 1, 1990
Chlorcyclizine hydrochloride	1620219	July 1, 1987
Chlorambucil	305033	January 1, 1989
Chlordecone (Kepone)	143500	January 1, 1989
Chlordiazepoxide	58253	January 1, 1992
Chlordiazepoxide hydrochloride	438415	January 1, 1992
1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU) (Lomustine)	13010474	July 1, 1990
Clomiphene citrate	50419	April 1, 1990
Clorazepate dipotassium	57109907	October 1, 1992
Cocaine	50362	July 1, 1989
Colchicine	64868	October 1, 1992
Conjugated estrogens	---	April 1, 1990
Cyanazine	21725462	April 1, 1990
Cycloheximide	66819	January 1, 1989
Cyclophosphamide (anhydrous)	50180	January 1, 1989
Cyclophosphamide (hydrated)	6055192	January 1, 1989
Cyhexatin	13121705	January 1, 1989
Cytarabine	147944	January 1, 1989
Danazol	17230885	April 1, 1990
Daunorubicin hydrochloride	23541506	July 1, 1990
Demeclocycline hydrochloride (internal use)	64733	January 1, 1992
Diazepam	439145	January 1, 1992
Dicumarol	66762	October 1, 1992
Diethylstilbestrol (DES)	56531	July 1, 1987
Dinocap	39300453	April 1, 1990
Dinoseb	88857	January 1, 1989
Diphenylhydantoin (Phenytoin)	57410	July 1, 1987
Doxycycline (internal use)	564250	July 1, 1990
Doxycycline calcium (internal use)	94088854	January 1, 1992
Doxycycline hyclate (internal use)	24390145	October 1, 1991
Doxycycline monohydrate (internal use)	17086281	October 1, 1991
Ergotamine tartrate	379793	April 1, 1990
Ethyl alcohol in alcoholic beverages	---	October 1, 1987
Ethylene glycol monoethyl ether	110805	January 1, 1989
Ethylene glycol monomethyl ether	109864	January 1, 1989
Ethylene glycol monoethyl ether acetate	111159	January 1, 1993

Chemical	CAS Number	Date
Ethylene glycol monomethyl ether acetate	110496	January 1, 1993
Ethylene thiourea	96457	January 1, 1993
Etoposide	33419420	July 1, 1990
Etretinate	54350480	July 1, 1987
Fluorouracil	51218	January 1, 1989
Fluoxymesterone	76437	April 1, 1990
Flurazepam hydrochloride	1172185	October 1, 1992
Flutamide	13311847	July 1, 1990
Halazepam	23092173	July 1, 1990
Hexachlorobenzene	118741	January 1, 1989
Ifosfamide	3778732	July 1, 1990
Iodine-131	10043660	January 1, 1989
Isotretinoin	4759482	July 1, 1987
Lead	---	February 27, 1987
Lithium carbonate	554132	January 1, 1991
Lithium citrate	919164	January 1, 1991
Lorazepam	846491	July 1, 1990
Lovastatin	75330755	October 1, 1992
Medroxyprogesterone acetate	71589	April 1, 1990
Megestrol acetate	595335	January 1, 1991
Melphalan	148823	July 1, 1990
Menotropins	9002680	April 1, 1990
Meprobamate	57534	January 1, 1992
Mercaptopurine	6112761	July 1, 1990
Mercury and mercury compounds	---	July 1, 1990
Methacycline hydrochloride	3963959	January 1, 1991
Methimazole	60560	July 1, 1990
Methotrexate	59052	January 1, 1989
Methotrexate sodium	15475566	April 1, 1990
Methyl bromide as a structural fumigant	74839	January 1, 1993
Methyl mercury	---	July 1, 1987
Methyltestosterone	58184	April 1, 1990
Midazolam hydrochloride	59467968	July 1, 1990
Minocycline hydrochloride (internal use)	13614987	January 1, 1992
Misoprostol	59122462	April 1, 1990
Mitoxantrone hydrochloride	70476823	July 1, 1990
Nafarelin a	86220420	April 1, 1990

Chemical	CAS Number	Date
Neomycin sulfate (internal use)	1405103	October 1, 1992
Netilmicin sulfate	56391572	July 1, 1990
Nicotine	54115	April 1, 1990
Nitrogen mustard (Mechlorethamine)	51752	January 1, 1989
Nitrogen mustard hydrochloride (Mechlorethamine hydrochloride)	55867	July 1, 1990
Norethisterone (Norethindrone)	68224	April 1, 1990
Norethisterone acetate (Norethindrone acetate)	51989	October 1, 1991
Norethisterone (Norethindrone)/Ethinyl estradiol	68224/57636	April 1, 1990
Norethisterone (Norethindrone)/Mestranol	68224/72333	April 1, 1990
Norgestrel	6533002	April 1, 1990
Oxazepam	604751	October 1, 1992
Oxytetracycline (internal use)	79572	January 1, 1991
Oxytetracycline hydrochloride (internal use)	2058460	October 1, 1991
Paramethadione	115673	July 1, 1990
Penicillamine	52675	January 1, 1991
Pentobarbital sodium	57330	July 1, 1990
Phenacemide	63989	July 1, 1990
Phenprocoumon	435972	October 1, 1992
Pipobroman	54911	July 1, 1990
Plicamycin	18378897	April 1, 1990
Polybrominated biphenyls	922660	October 1, 1994
Polychlorinated biphenyls	---	January 1, 1991
Procarbazine hydrochloride	366701	July 1, 1990
Propylthiouracil	51525	July 1, 1990
Retinol/retinyl esters, when in daily dosages in excess of 10,000 IU, or 3,000 retinol equivalents. (NOTE: Retinol/retinyl esters are required and essential for maintenance of normal reproductive function. The recommended daily level during pregnancy is 8,000 IU.)	---	July 1, 1989
Ribavirin	36791045	April 1, 1990
Secobarbital sodium	309433	October 1, 1992
Streptomycin sulfate	3810740	January 1, 1991
Tamoxifen citrate	54965241	July 1, 1990
Temazepam	846504	April 1, 1990
Testosterone cypionate	58208	October 1, 1991
Testosterone enanthate	315377	April 1, 1990
2,3,7,8-Tetrachlorodibenzo-para-dioxin (TCDD)	1746016	April 1, 1991
Tetracyclines (internal use)	---	October 1, 1992
Tetracycline (internal use)	60548	October 1, 1991

Chemical	CAS Number	Date
Tetracycline hydrochloride (internal use)	64755	January 1, 1991
Thalidomide	50351	July 1, 1987
Thioguanine	154427	July 1, 1990
Tobacco smoke (primary)	---	April 1, 1988
Tobramycin sulfate	49842071	July 1, 1990
Toluene	108883	January 1, 1991
Triazolam	28911015	April 1, 1990
Trilostane	13647353	April 1, 1990
Trimethadione	127480	January 1, 1991
Uracil mustard	66751	January 1, 1992
Urethane	51796	October 1, 1994
Urofollitropin	26995915	April 1, 1990
Valproate (Valproic acid)	99661	July 1, 1987
Vinblastine sulfate	143679	July 1, 1990
Vincristine sulfate	2068782	July 1, 1990
Warfarin	81812	July 1, 1987

Female reproductive toxicity

Chemical	CAS Number	Date
Aminopterin	54626	July 1, 1987
Anabolic steroids	---	April 1, 1990
Aspirin (NOTE It is especially important not to use aspirin during the last three months of pregnancy, unless specifically directed to do so by a physician because it may cause problems in the unborn child or complications during delivery)	50782	July 1, 1990
Carbon disulfide	75150	July 1, 1989
Cocaine	50362	July 1, 1989
Cyclophosphamide (anhydrous)	50180	January 1, 1989
Cyclophosphamide (hydrated)	6055192	January 1, 1989
Ethylene oxide	75218	February 27, 1987
Lead	---	February 27, 1987
Tobacco smoke (primary)	---	April 1, 1988
Uracil mustard	66751	January 1, 1992

Male reproductive toxicity

Chemical	CAS Number	Date
Anabolic steroids	---	April 1, 1990
Benomyl	17804352	July 1, 1991
Carbon disulfide	75150	July 1, 1989
Colchicine	64868	October 1, 1992
Cyclophosphamide (anhydrous)	50180	January 1, 1989
Cyclophosphamide (hydrated)	6055192	January 1, 1989
1,2 Dibromo-3-chloropropane (DBCP)	96128	February 27, 1987
m-Dinitrobenzene	99650	July 1, 1990
o-Dinitrobenzene	528290	July 1, 1990
p-Dinitrobenzene	100254	July 1, 1990
Dinoseb	88857	January 1, 1989
Ethylene glycol monoethyl ether	110805	January 1, 1989
Ethylene glycol monomethyl ether	109864	January 1, 1989
Ethylene glycol monoethyl ether acetate	111159	January 1, 1993
Ethylene glycol monomethyl ether acetate	110496	January 1, 1993
Hexamethylphosphoramide	680319	October 1, 1994
Lead	---	February 27, 1987
Nitrofurantoin	67209	April 1, 1991
Tobacco smoke (primary)	---	April 1, 1988
Uracil mustard	66751	January 1, 1992

Date: October 1, 1994

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 88- 63

ADOPTION OF POLICY ENTITLED
"SOURCES OF DRINKING WATER"

WHEREAS:

1. California Water Code Section 13140 provides that the State Board shall formulate and adopt State Policy for Water Quality Control; and,

2. California Water Code Section 13240 provides that Water Quality Control Plans "shall conform" to any State Policy for Water Quality Control; and,

3. The Regional Boards can conform the Water Quality Control Plans to this policy by amending the plans to incorporate the policy; and,

4. The State Board must approve any conforming amendments pursuant to Water Code Section 13245; and,

5. "Sources of drinking water" shall be defined in Water Quality Control Plans as those water bodies with beneficial uses designated as suitable, or potentially suitable, for municipal or domestic water supply (MUN); and,

6. The Water Quality Control Plans do not provide sufficient detail in the description of water bodies designated MUN to judge clearly what is, or is not, a source of drinking water for various purposes.

THEREFORE BE IT RESOLVED:

All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards[1] with the exception of:

1. Surface and ground waters where:

   a. The total dissolved solids (TDS) exceed 3,000 mg/L (5,000 uS/cm, electrical conductivity) and it is not reasonably expected by Regional Boards to supply a public water system, or

b. There is contamination, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices, or

c. The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

2. Surface waters where:

a. The water is in systems designed or modified to collect or treat municipal or industrial wastewaters, process waters, mining wastewaters, or storm water runoff, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards; or,

b. The water is in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards.

3. Ground water where:

The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 Code of Federal Regulations, Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR, Section 261.3.

4. Regional Board Authority to Amend Use Designations:

Any body of water which has a current specific designation previously assigned to it by a Regional Board in Water Quality Control Plans may retain that designation at the Regional Board's discretion. Where a body of water is not currently designated as MUN but, in the opinion of a Regional Board, is presently or potentially suitable for MUN, the Regional Board shall include MUN in the beneficial use designation.

The Regional Boards shall also assure that the beneficial uses of municipal and domestic supply are designated for protection wherever those uses are presently being attained, and assure that any changes in beneficial use designations for waters of the State are consistent with all applicable regulations adopted by the Environmental Protection Agency.

The Regional Boards shall review and revise the Water Quality Control Plans to incorporate this policy.

---

1 This policy does not affect any determination of what is a potential source of drinking water for the limited purposes of maintaining a surface impoundment after June 30, 1988, pursuant to Section 25208.4 of the Health and Safety Code.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a policy duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 19, 1988.

Maureen Marche
Maureen Marche'
Administrative Assistant to the Board

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a policy duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 19, 1988.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS
(National Pollutant Discharge Elimination System)

1 March 1991

A. GENERAL PROVISIONS

1. Any violation of this Order constitutes a violation of the Federal Clean Water Act (CWA) and the California Water Code (CWC) and, therefore, may result in enforcement action under either or both laws.

2. The CWA provides that any person who violates a portion of this Order implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who willfully or negligently violates this Order with regard to these sections of the CWA is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both.

3. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another; protect the Discharger from liability under federal, state, or local laws; or guarantee the Discharger a capacity right in the receiving waters.

4. The Discharger shall allow representatives of the Regional Water Quality Control Board (hereafter Board), the State Water Resources Control Board and the Environmental Protection Agency (hereafter EPA), upon presentation of credentials, at reasonable hours, to:

   a. enter premises where wastes are treated, stored, or discharged and facilities in which any required records are kept;

   b. copy any records required to be kept under terms and conditions of this Order;

   c. inspect facilities, monitoring equipment, practices, or operations regulated or required by this Order; and

   d. sample, photograph or video tape any discharge, waste, waste unit or monitoring device.

5. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by the California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, California Code of Regulations (CCR), Division 3, Chapter 14.

6. The Discharger shall at all times properly operate and maintain all facilities, and systems of treatment and control including sludge use and disposal facilities (and related appurtenances) that are installed or used to achieve compliance with this Order.

   Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger only when necessary to achieve compliance with this Order.

7. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

   a. violation of any term or condition contained in this Order;

   b. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

   c. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

   d. a material change in the character, location, or volume of discharge.

   The causes for modification include:

   a. **New regulations.** New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

   b. **Land application plans.** When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

c. **Change in sludge use or disposal practice.** Under 40 Code of Federal Regulations (CFR) 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Board may review and revise this Order at any time upon application of any affected person or the Board's own motion.

8. The filing of a request by the Discharger for modification, revocation and reissuance, or termination of this Order, or notification of planned changes or anticipated noncompliance, does not stay any condition of this Order.

   The Discharger shall furnish, within a reasonable time, any information the Board or EPA may request to determine compliance with this Order or whether cause exists for modifying or terminating this Order. The Discharger shall also furnish to the Board, upon request, copies of records required to be kept by this Order.

9. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

   The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, **even if this Order has not yet been modified.**

10. If more stringent applicable water quality standards are approved, pursuant to Section 303 of the CWA, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

11. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

    a. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

    b. controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

12. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

13. By-pass (the intentional diversion of waste streams from any portion of a treatment facility or collection system, except those portions designed to meet variable effluent limits) is prohibited except under the following conditions:

a. (1) by-pass was unavoidable to prevent loss of life, personal injury, or severe property damage; (severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a by-pass; severe property damage does not mean economic loss caused by delays in production;)

and

(2) there were no feasible alternatives to by-pass, such as the use of auxiliary treatment facilities or retention of untreated waste; this condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a by-pass that would otherwise occur during normal periods of equipment downtime or preventive maintenance;

or

b. (1) by-pass is required for essential maintenance to assure efficient operation;

and

(2) neither effluent nor receiving water limitations are exceeded;

and

(3) the Discharger notifies the Board ten days in advance.

The permittee shall submit notice of an unanticipated by-pass as required in paragraph B.1. below.

14. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, failure to implement an appropriate pretreatment program, or careless or improper action. A Discharger that wishes to establish the affirmative defense of an upset in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other evidence, that:

    a. an upset occurred due to identifiable cause(s);

    b. the permitted facility was being properly operated at the time of the upset;

    c. notice of the upset was submitted as required in paragraph B.1.; and

    d. remedial measures were implemented as required under paragraph A.17.

    In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof.

15. This Order is not transferable to any person except after notice to the Board. The Board may modify or revoke and reissue the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA.

16. Except for data determined to be confidential under Section 13267 of the CWC, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board and EPA. Effluent data are not confidential.

17. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge or sludge use or disposal.

18. The fact that it would have been necessary for the Discharger to halt or reduce the permitted activity in order to comply with this Order shall not be a defense for violating this Order.

19. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by EPA under Section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

20. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

21. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

22. Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the CWC, Section 13050.

B. GENERAL REPORTING REQUIREMENTS

1. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, daily maximum effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Board by telephone (916) 255-3000 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and, prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

2. Safeguard to electric power failure:

   a. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

   b. Upon written request by the Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Board.

c. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Board that the existing safeguards are inadequate, provide to the Board and EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Board, become a condition of this Order.

3. The Discharger, upon written request of the Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under B.2.

The technical report shall:

a. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

b. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

c. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

4. The Discharger shall file with the Board a Report of Waste Discharge at least 180 days before making any material change in the character, location, or volume of the discharge. A material change includes, but is not limited to, the following:

a. Adding a major industrial waste discharge to a discharge of essentially domestic sewage, or adding a new process or product by an industrial facility resulting in a change in the character of the waste.

b. Significantly changing the disposal method or location, such as changing the disposal to another drainage area or water body.

c. Significantly changing the method of treatment.

d. Increasing the discharge flow beyond that specified in the Order.

5. A publicly owned treatment works (POTW) whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the Discharger shall notify the Board by **31 January**. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Board may extend the time for submitting the report.

6. A manufacturing, commercial, mining, or silvicultural discharger shall notify the Board as soon as it knows or has reason to believe:

   a. That any activity has occurred or will occur that would result in the discharge of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels":

      (1) 100 micrograms per liter (μg/l);

      (2) 200 μg/l for acrolein and acrylonitrile; 500 μg/l for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/l) for antimony;

      (3) five times the maximum concentration value reported for that pollutant in the Report of Waste Discharge; or

      (4) the level established by the Board in accordance with 40 CFR 122.44(f).

   b. That it expects to begin to use or manufacture, as an intermediate or final product or by-product, any toxic pollutant that was not reported in the Report of Waste Discharge.

7. A POTW shall provide adequate notice to the Board of:

   a. any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants, and

   b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order.

   c. Any planned physical alterations or additions to the permitted facility, or changes planned in the Discharger's sludge use or disposal practice, where such alterations, additions, or changes may justify the application of permit conditions that are different from or absent in the existing permit including notification of additional disposal sites not reported during the permit application process, or not reported pursuant to an approved land application plan.

   Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

8. The Discharger shall give advance notice to the Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order.

9. The Discharger shall submit technical reports as directed by the Executive Officer.

10. Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both.

C. PROVISIONS FOR MONITORING

1. All analyses shall be performed in accordance with the latest edition of *Guidelines Establishing Test Procedures for Analysis of Pollutants*, promulgated by EPA (40 CFR 136) or other procedures approved by the Board.

2. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a

noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Board staff. The Quality Assurance-Quality Control Program must conform to EPA guidelines or to procedures approved by the Board.

Unless otherwise specified, all metals shall be reported as Total Metals.

Unless otherwise specified, bioassays shall be performed in the following manner:

a. Acute bioassays shall be performed in accordance with guidelines approved by the Board and the Department of Fish and Game or in accordance with methods described in EPA's manual for measuring acute toxicity of effluents (EPA/620/4-85/013 and subsequent amendments).

b. Short-term chronic bioassays shall be performed in accordance with EPA guidelines (EPA/600/4-89/001 and subsequent amendments).

3. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Board and EPA.

4. The Discharger shall conduct analysis on any sample provided by EPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to EPA's DMQA manager.

5. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

6. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.

7. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or be imprisoned for not more than two years per violation, or by both.

8. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of

continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

9. The records of monitoring information shall include:

   a. the date, exact place, and time of sampling or measurements,
   b. the individual(s) who performed the sampling of measurements,
   c. the date(s) analyses were performed,
   d. the individual(s) who performed the analyses,
   e. the laboratory which performed the analyses,
   f. the analytical techniques or methods used, and
   g. the results of such analyses.

D. REPORTING REQUIREMENTS FOR MONITORING

1. The Discharger shall file with the Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.

2. Monitoring reports shall be submitted on forms to be supplied by the Board to the extent that the information reported may be entered on the forms. Alternate forms may be approved for use by the Board.

3. The results of all monitoring required by this Order shall be reported to the Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

4. The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in the Monitoring and Reporting Program, shall be reported to the Board and used in determining compliance.

5. Upon written request of the Board, the Discharger shall submit a summary monitoring report to the Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

6. All reports shall be signed by a person identified below:

a. **For a corporation:** by a principal executive officer of at least the level of senior vice-president.

b. **For a partnership or sole proprietorship:** by a general partner or the proprietor, respectively.

c. **For a municipality, state, federal or other public agency:** by either a principal executive officer or ranking elected or appointed official. Monitoring reports must also be signed by the chief plant operator and if the chief plant operator is not in the direct line of supervision of the laboratory function, the chief of the laboratory also.

d. A duly authorized representative of a person designated in 6a, 6b or 6c of this requirement if;

(1) the authorization is made in writing by a person described in 6a, 6b, or 6c of this provision,

(2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position), and

(3) the written authorization is submitted to the Board.

Each person signing a report required by this Order or other information requested by the Board shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The Discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

In addition, dischargers designated as a "major" discharger shall transmit a copy of all monitoring reports to EPA (see address in Provision G.10).

E. DEFINITIONS:

1. The **daily discharge rate** is obtained from the following calculation for any calendar day:

$$\text{Daily discharge rate (lbs/day)} = \frac{8.34}{N} \sum_{1}^{N} Q_i C_i$$

In which N is the number of samples analyzed in a day. Q_i and C_i are the flow rate (mgd) and the constituent concentration (mg/l), respectively, which are associated with each of the N grab samples which may be taken in a day. If a composite sample is taken, C_i is the concentration measured in the composite sample and Q_i is the average flow rate occurring during the period over which samples are composited.

2. The **monthly or weekly average discharge rate** is the total of daily discharge rates during a calendar month or week, divided by the number of days in the month or week that the facility was discharging.

Where less than daily sampling is required by this permit, the monthly or weekly average discharge rate shall be determined by the summation of all the daily discharge rates divided by the number of days during the month or week for which the rates are available.

For other than weekly or monthly periods, compliance shall be based upon the average of all rates available during the specified period.

3. The **monthly or weekly average concentration** is the arithmetic mean of measurements made during a calendar month or week, respectively.

4. The **daily maximum discharge rate** means the total discharge by weight during one day.

5. The **daily maximum concentration** is the greatest concentration found in grab or composite samples analyzed for one day.

6. A **grab sample** is an individual sample collected in less than 15 minutes.

7. Unless otherwise specified, a **composite sample** is a combination of individual samples collected over the specified sampling period:

   a. at equal time intervals, with a maximum interval of one hour, and

   b. at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow.

   The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results.

8. **Sludge** means the solids, residues, and precipitates separated from, or created in, wastewater by the unit processes of a treatment system.

9. **Median** is the value below which half the samples (ranked progressively by increasing value) fall. It may be considered the middle value, or the average of the two middle values.

10. **Overflow** means the intentional or unintentional diversion of flow from the collection and transport systems, including pumping facilities.

F. **PRETREATMENT PROGRAM REQUIREMENTS** (Applies to dischargers required to establish pretreatment programs by this Order.)

The Discharger shall be responsible for the performance of all pretreatment requirements contained in 40 CFR Part 403 and shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. Environmental Protection Agency (EPA), or other appropriate parties, as provided in the Clean Water Act, as amended (33 USC 1351 et seq.) (hereafter Act).

The Discharger shall implement and enforce its Approved publicly owned treatment works (POTW) Pretreatment Program. The Discharger's Approved POTW Pretreatment Program is hereby made an enforceable condition of this permit. EPA may

The Discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

In addition, dischargers designated as a "major" discharger shall transmit a copy of all monitoring reports to EPA (see address in Provision G.10).

E. DEFINITIONS:

1. The **daily discharge rate** is obtained from the following calculation for any calendar day:

$$\text{Daily discharge rate (lbs/day)} = \frac{8.34}{N} \sum_{1}^{N} Q_i C_i$$

In which N is the number of samples analyzed in a day. Q_i and C_i are the flow rate (mgd) and the constituent concentration (mg/l), respectively, which are associated with each of the N grab samples which may be taken in a day. If a composite sample is taken, C_i is the concentration measured in the composite sample and Q_i is the average flow rate occurring during the period over which samples are composited.

2. The **monthly or weekly average discharge rate** is the total of daily discharge rates during a calendar month or week, divided by the number of days in the month or week that the facility was discharging.

Where less than daily sampling is required by this permit, the monthly or weekly average discharge rate shall be determined by the summation of all the daily discharge rates divided by the number of days during the month or week for which the rates are available.

For other than weekly or monthly periods, compliance shall be based upon the average of all rates available during the specified period.

3. The **monthly or weekly average concentration** is the arithmetic mean of measurements made during a calendar month or week, respectively.

4. The **daily maximum discharge rate** means the total discharge by weight during one day.

5. The **daily maximum concentration** is the greatest concentration found in grab or composite samples analyzed for one day.

6. A **grab sample** is an individual sample collected in less than 15 minutes.

7. Unless otherwise specified, a **composite sample** is a combination of individual samples collected over the specified sampling period:

   a. at equal time intervals, with a maximum interval of one hour, and

   b. at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow.

   The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results.

8. **Sludge** means the solids, residues, and precipitates separated from, or created in, wastewater by the unit processes of a treatment system.

9. **Median** is the value below which half the samples (ranked progressively by increasing value) fall. It may be considered the middle value, or the average of the two middle values.

10. **Overflow** means the intentional or unintentional diversion of flow from the collection and transport systems, including pumping facilities.

F. **PRETREATMENT PROGRAM REQUIREMENTS** (Applies to dischargers required to establish pretreatment programs by this Order.)

The Discharger shall be responsible for the performance of all pretreatment requirements contained in 40 CFR Part 403 and shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. Environmental Protection Agency (EPA), or other appropriate parties, as provided in the Clean Water Act, as amended (33 USC 1351 *et seq*.) (hereafter Act).

The Discharger shall implement and enforce its Approved publicly owned treatment works (POTW) Pretreatment Program. The Discharger's Approved POTW Pretreatment Program is hereby made an enforceable condition of this permit. EPA may

initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Act.

The Discharger shall enforce the requirements promulgated under Sections 307(b), (c), and (d) and Section 402(b) of the Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

1. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 including, but not limited to:

   a. Implement the necessary legal authorities as provided in 40 CFR 403.8(f)(1).

   b. Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6.

   c. Implement the programmatic functions as provided in 40 CFR 403.8(f)(2), in particular, the publishing of a list of significant violators.

   d. Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3).

G. **ANNUAL PRETREATMENT REPORT REQUIREMENTS** (Applies to dischargers required to establish pretreatment programs by this Order.)

The Discharger shall submit annually a report to the Regional Board, with copies to EPA Region 9 and the State Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

An annual report shall be submitted by **28 February** or as otherwise specified in the Order and include at least the following items:

1. A summary of analytical results from representative, flow-proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants EPA has identified under Section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

The Discharger is not required to sample and analyze for asbestos until EPA promulgates an applicable analytical technique under 40 CFR 136. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto.

2. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

3. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

4. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

   a. complied with baseline monitoring report requirements (where applicable);

   b. consistently achieved compliance;

   c. inconsistently achieved compliance;

d. significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

e. complied with schedule to achieve compliance (include the date final compliance is required);

f. did not achieve compliance and not on a compliance schedule; and

g. compliance status unknown.

A report describing the compliance status of each industrial user characterized by the descriptions in items c. through g. above shall be submitted for each calendar quarter **within 21 days of the end of the quarter**. The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly reporting requirement shall commence upon issuance of this Order.

5. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:

   a. the names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and

   b. the conclusions or results from the inspection or sampling of each industrial user.

6. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

   a. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.

b. Administrative orders regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

c. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

d. Criminal actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

e. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.

f. Restriction of flow to the POTW.

g. Disconnection from discharge to the POTW.

7. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

8. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

9. A copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If no notice was published, explain why.

10. A description of any changes in sludge disposal methods and discussion of any concerns not described elsewhere in the report.

Duplicate signed copies of these reports shall be submitted to the Board and the

State Water Resources Control Board
Division of Water Quality
Regulatory Unit
P.O. Box 944213
Sacramento, CA 94244-2130

and the

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

Revised March 1993 to update phone number of Central Valley Regional Board
Revised December 1995 to update signatory requirements (D.6.c)

# # # #

APPENDIX 15-5

NPDES NINE MINIMUM CONTROLS COMPLIANCE REPORT

DEPARTMENT OF UTILITIES

ENGINEERING SERVICES

CITY OF SACRAMENTO
CALIFORNIA

5770 FREEPORT BLVD.
SUITE 100
SACRAMENTO, CA
95822-2911

PH 916-433-6318
FAX 916-433-6652

August 9, 1996
960536:BM:rt

Ken Landau
California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

SUBJECT: NPDES ~~OPERATIONS PLAN AND PROJECT SCHEDULE~~ NINE MINIMUM CONTROLS COMPLIANCE REPORT

Dear Mr. Landau:

In compliance with California Regional Water Quality Control Board, Central Valley Region, Order No. 96-090 NPDES NO. CA 0079111, Section E, Provision 2, the following Nine Minimum Combined Sewer Overflow Controls Compliance Report is submitted for your review and approval.

If you have any comments or questions, please call Rick Batha at (916) 433-6625.

Sincerely,

GA Reents

Gary A. Reents
Engineering Services Manager

Attachments

cc: Jim Sequeira, Director of Utilities
Rick Batha, Senior Engineer
Mike Yee, Plant Services Manager
Bob Mills, Brown and Caldwell

(Craig 5 copies)

NINE MINIMUM COMBINED SEWER OVERFLOW CONTROLS COMPLIANCE REPORT

FOR

CITY OF SACRAMENTO
COMBINED WASTEWATER CONTROL SYSTEM

NPDES PERMIT NO. CA0079111

Submitted to

California Regional Water Quality Control Board
Central Valley Region
3343 Routier Road, Suite A
Sacramento, California 95827

Prepared by

City of Sacramento
Department of Utilities
Plant Services
1391 35th Avenue
Sacramento, California 95822

August 1996

CITY OF SACRAMENTO

COMBINED SEWER SYSTEM

NINE MINIMUM COMBINED SEWER OVERFLOW CONTROLS COMPLIANCE REPORT

1.0 INTRODUCTION

In April 1994, the Unites States Environmental Protection Agency issues its Combined Sewer Overflow (CSO) Policy for controlling discharges in the nation's waters from combined sewer systems (40 CFR Part 122). A combined sewer system (CSS) is a drainage system that conveys sanitary sewage from houses and office buildings and storm runoff water collected through drop inlets along the streets in the same pipelines. The City of Sacramento has a CSS that serves 7,500 acres of the downtown, Land Park, and East Sacramento areas. Another 3,700 acres adjacent to the CSS contribute sanitary sewage only to the CSS. A map of the CSS is shown on Figure 1-1.

One of the cornerstones of the CSO Control Policy is the Nine Minimum Controls (NMC) which apply to every CSS in the nation. The NMC are defined as the minimum technology-based actions or measures designed to reduce CSOs and their effects on receiving water quality without extensive engineering studies or major construction. The CSO Control Policy requires implementation of the NMC by January 1, 1977.

This report documents the status of the City of Sacramento in complying with the NMC. It is submitted in response to the requirements of Provision E2 of National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079111 issued on March 22, 1996, by the California Regional Water Quality Control Board - Central Valley Region (RWQCB) to the City of Sacramento and the Sacramento Regional County Sanitation District (SRCSD) who jointly own and operate the Combined Wastewater Collection and Treatment System. At present, the City is responsible for operation and maintenance of its CSS.

The City has also prepared a Long-Term Control Plan (LTCP) dated July 1995. The NMC will be incorporated into the LTCP. The following sections of this report describe the status of compliance for each separate NMC. To reduce the size of this report, the reference documents are not included. The City's Department of Utilities can furnish these documents upon request.

2.0 PROPER OPERATION AND REGULAR MAINTENANCE PROGRAMS

This section describes the operation and maintenance program for the City's CSS. It includes descriptions of the City's organization structure; annual budgets and budgeting process; critical CSS facilities; procedures for routine maintenance, non-routine maintenance and emergency situations, and periodic inspections of CSS facilities; training programs; and procedures for periodic review of O&M plans. The City is in compliance with this minimum control.

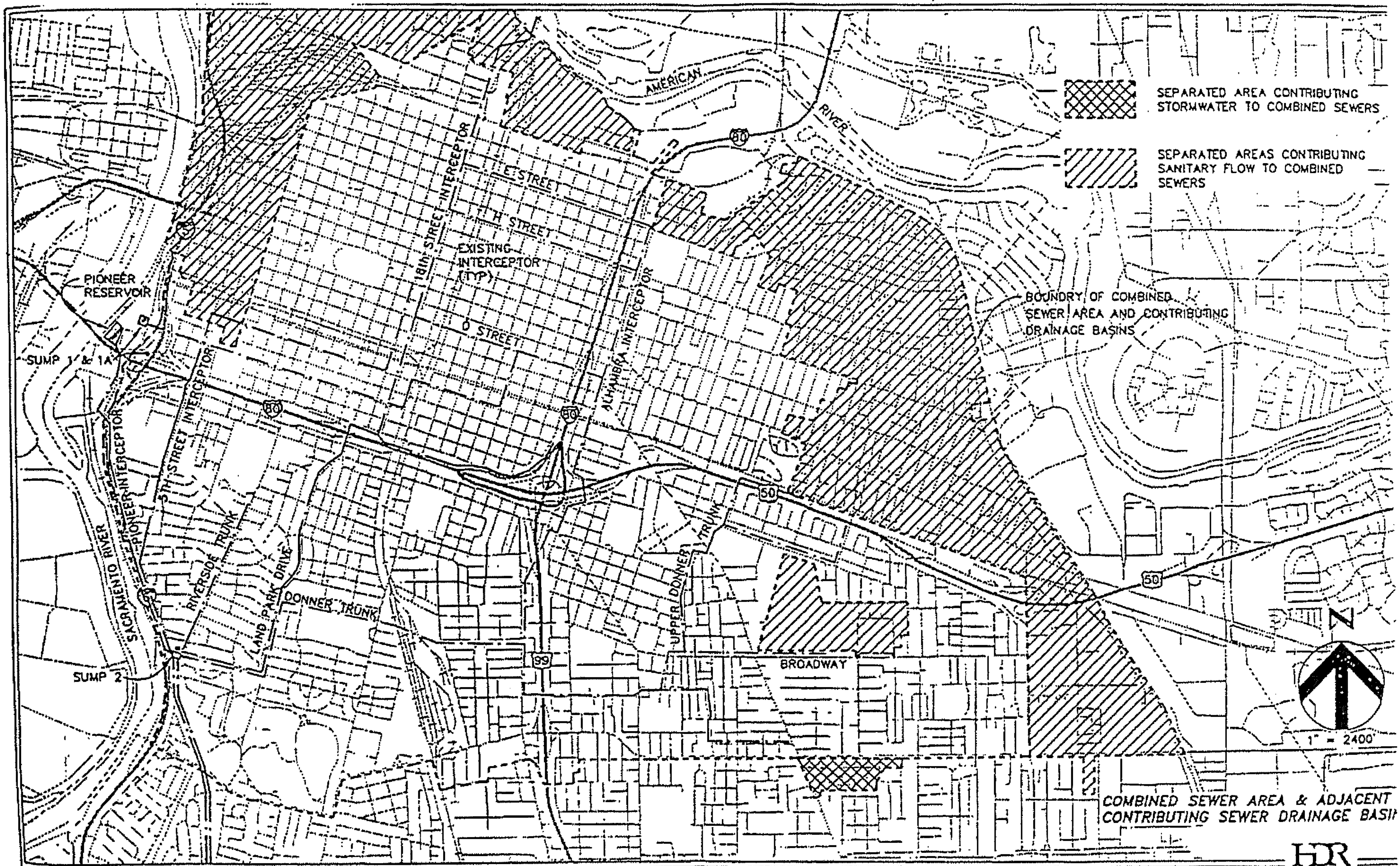


Figure 1-1 Combined Sewer System Service Area

2.1 Organizational Structure

The City's CSS is operated and maintained by personnel assigned to the City's Department of Utilities. The overall organizational structure of the Department is shown on Figure 2-1. All four divisions within the Department are involved in the CSS; their CSS responsibilities are listed below:

Plant Services Division operates and maintains the pumping stations (a.k.a. sumps), Pioneer Reservoir, and the City's Combined Wastewater Treatment Plant (CWTP).

Engineering Services provides planning and design services for capital improvements.

Field Services Division operates and maintains the pipelines.

Business Services Division provides financial planning, including budget preparation and establishing rates and fees charged to its customers.

Staffing levels for the Department of Utilities are shown on Figure 2-2. Figure 2-2 also lists the names and telephone numbers of key staff members. The organizational structure of the Department provides a clear chain of command and provides for sufficient staffing to adequately operate and maintain the City's CSS. As an illustration of the City's commitment to proper operation and maintenance, the City Council authorized six new staff positions for the CSS in October 1995.

2.2 Budget

The City's fiscal year runs from July 1 through June 30. Every year, the Department of Utilities submits a proposed budget for review and adoption (following adjustments) by the City Council. The manager of each division within the Department prepares the preliminary budget for his division as a part of the process. These managers, in turn, obtain budget proposals from the key personnel involved in operating and maintaining the CSS. Thus, the personnel directly involved with the CSS have important roles in developing the annual budgets for improving, operating, and maintaining the CSS.

A summary of the Department of Utilities budget for Fiscal Year 1995-1996 is shown in Table 2-1. The City maintains water (for municipal water supply), sewer, storm drainage, as well as an "other" fund. Since the CSS collects, treats, and discharges both sanitary sewage and storm water runoff, capital improvements, operation, and maintenance of the CSS is financed from both the sewer and storm drainage funds. Seventy-five percent of the CSS budget is funded from the storm drainage fund, and 25 percent is funded from the sewer fund. The City has adopted City-wide rate increases over the past six years for both the sewer and storm drainage funds to finance major improvements to the CSS.

Figure 2-1

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

"...Providing safe, reliable and environmentally-sensitive water, storm drainage, sewer and flood control services to it's customers"

DEPARTMENT OF UTILITIES

TOTAL FY 97 BUDGET $46,184,227
421 FTE

DIRECTOR

OP-CON TO Planning and Development Permit Assistance Center

- Provides drainage, sewer, water supply, water quality and floodplain management expertise in support of the Permit Assistance Center
- Provides development assistance to private sector development applicants and Planning and Public Works staff

(2 FTE)

OFFICE OF THE DIRECTOR

Budget
$15,164,462
6 FTE

Sets overall department policy, program, and planning goals

- Policy direction for water, sewer, storm drainage and flood control
- Policy coordination with outside agencies
- Strategic planning
- Community / Environmental Relations
- Department Award Program
- Neighborhood Partnership Programs
- Public Response and Communication
- Legislative Analysis

PLANT SERVICES

Budget
$14,750,967
139 FTE

Operates and maintains facilities for water production and for sewer and drainage pumping

- Treatment plants and wells operations and maintenance
- Combined system pumping
- Operation and maintenance of 45 sewer and 88 drainage pumping facilities
- Laboratory testing and analysis to ensure water quality and compliance with federal and State mandates

ENGINEERING SERVICES

Budget
$1,756,177
49.5 FTE

Provides engineering support for capital projects, plant services, and field services units, and ensures compliance with State and Federal regulations

- Capital improvement projects planning, design and management
- Utilities master planning
- Utility support for Planning and Development
- Compliance programs for Clean Water Act
- Compliance programs for NPDES
- Development review

FIELD SERVICES

Budget
$12,818,393
195.5 FTE

Operate and maintains water distribution system and sewer and drainage collection systems

- Customer request for service response
- Water, sewer, and drainage system maintenance
- Secondary levee system maintenance
- Toxic spillage response
- Underground Service Alert support

BUSINESS SERVICES

Budget
$1,694,228
31 FTE

Provides customer service, water conservation, safety training and fiscal support

- Utility service calls dispatch
- Customer service and tap sales
- Budget preparation and control
- Utility rate design and analyses
- Financial and strategic planning for Utility funds
- Affirmative action planning
- M/WBE program development and monitoring
- City Council agenda/reporting coordination
- Department training

OP-CON TO City County Office of Metropolitan Water Planning

Provides support for master planning of regional water production and use.

- Forums for public input and comment.
- Coordination with public and private water suppliers.

(2 FTE)

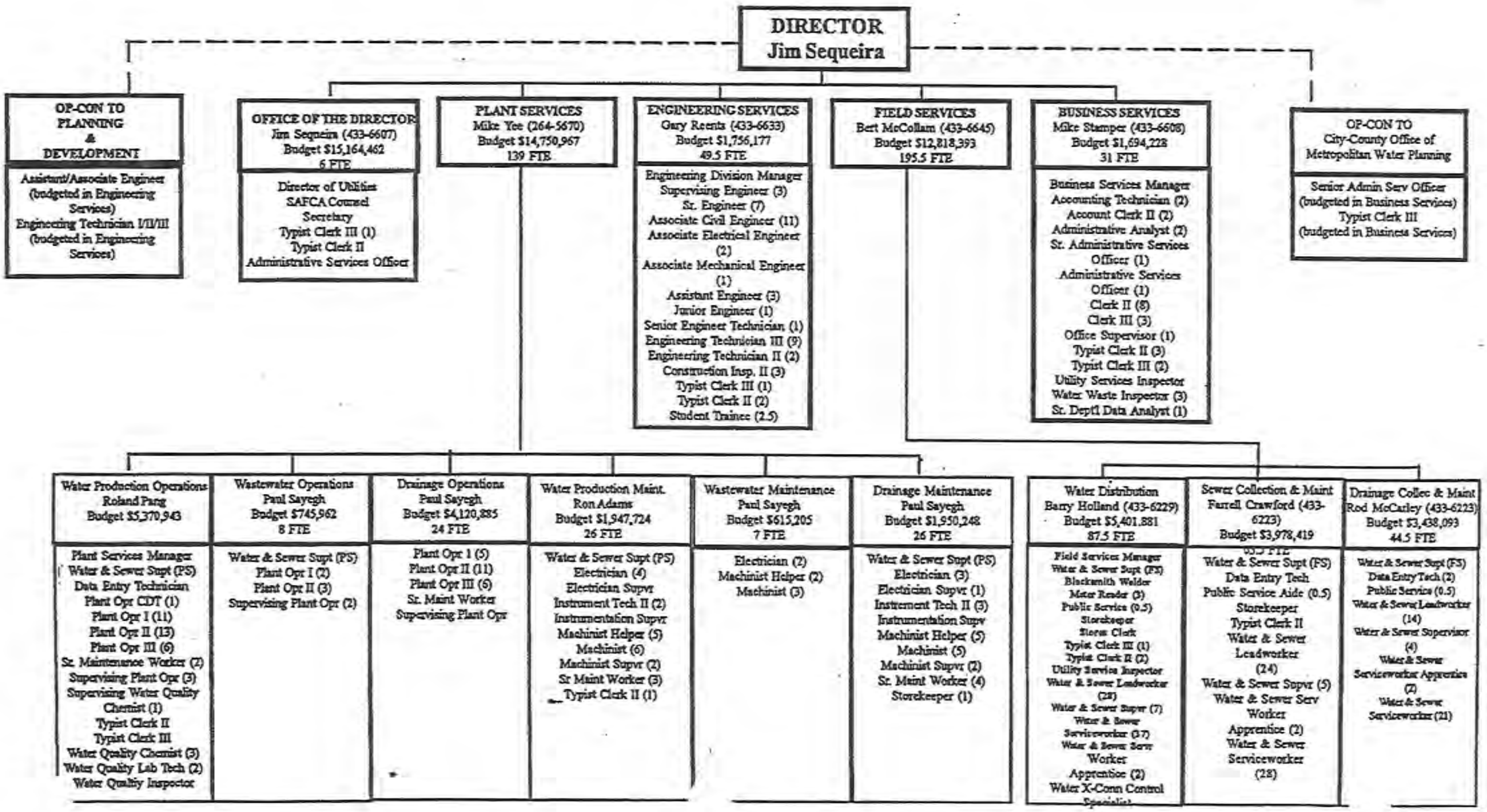
Figure 2-2

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

"... Providing safe, reliable and environmentally-sensitive water, drainage, storm water and sewer services to it's customers"

DEPARTMENT OF UTILITIES

TOTAL FY 97 BUDGET $46,184,227
421 FTE BY CLASSIFICATION



DEPARTMENT OF UTILITIES
BUDGET SUMMARY

FISCAL YEAR 1995-1996

AGENCY NAME	AGENCY NUMBER	WATER FUND 413	SEWER FUND 414	STORM DRAINAGE FUND 425	OTHER FUNDS	TOTAL
Office of the Director	3310	7,593,009	2,703,543	4,380,126	0	14,676,678
Water Production Operations	3321	5,256,660	7,732	25,775	15,000	5,305,167
Wastewater Operations	3322	0	693,702	38,569	0	732,271
Drainage Operations	3323	10,000	830,000	3,074,796	0	3,914,796
Water Production Maintenance	3324	1,952,471	3,691	12,303	0	1,968,465
Wastewater Maintenance	3325	0	553,169	64,575	0	617,744
Drainage Maintenance	3326	10,000	0	1,926,664	0	1,936,664
Engineering Services	3330	0	0	2,034,039	0	2,034,039
Water Distribution	3341	5,305,557	38,639	129,148	0	5,473,344
Sewer Maintenance	3342	0	2,703,983	1,132,989	50,000	3,886,972
Drainage Maintenance	3343	0	0	3,448,279	20,000	3,468,279
Business Services	3350	626,236	243,180	519,366	0	1,388,782
DEPARTMENT OF UTILITIES	**330**	**20,753,933**	**7,777,639**	**16,786,629**	**85,000**	**45,403,201**
City Manager	030	30,000	0	0	0	30,000
Information/Communications	130	38,500	0	0	0	38,500
Human Resources/Risk Management	150	88,000	0	0	0	88,000
Public Works	310	0	0	106,679	0	106,679
CIP Closures	710	0	0	0	0	0
Debt Service	720	141,611	74,371	892,460	0	1,108,442
Retirement	750	154,584	107,980	18,753	0	281,317
TOTAL OTHER DEPARTMENTS		452,695	182,351	1,017,892	0	1,652,938
Total Operations		21,206,628	7,959,990	17,804,521	85,000	47,056,139
Capital Improvements	500	9,098,139	1,547,000	9,716,944	1,200,000	21,562,083
Total Fund Appropriations		30,304,767	9,506,990	27,521,465	1,285,000	68,618,222
Estimated Revenue and Other Sources (w/adj.)		32,081,575	12,656,522	28,202,521	1,285,000	74,225,618
Net Estimated Revenue vs. Appropriations		1,776,808	3,149,532	681,056	0	5,607,396
Fund Balalance 6/30/94		4,011,000	1,618,000	4,617,000	NA	NA
Projected Fund Balance 6/30/95		5,787,808	4,767,532	5,298,056		
Prudent Reserve		3,280,660	1,224,530	2,808,526		
Excess or (Deficit) Reserve		2,507,148	3,543,002	2,489,530		

June 23, 1995
2:31 PM
Prepared by E. Otte
File: C:\QPW\FILES\BUDGET\OPSBUD96.WB2–Pg 16

City staff estimates that approximately 30 percent of the sewer and storm drainage funds are devoted to the CSS. Based on this estimate, and making adjustments to exclude municipal water supply and other costs, the budget for the CSS in Fiscal Year 1995-1996 was approximately $11,000,000. The bottom of Table 2-1 also reveals that there were reserves of approximately $4,770,000 and $5,300,000 in the sewer and storm drainage funds, respectively, as of June 30, 1995.

2.3 Critical Facilities

The critical facilities of the CSS consist of collection pipelines, Sump 1/1A, Sump 2, Pioneer Reservoir, and the CWTP. The CSS has approximately 306 miles of pipe between 6 and 120 inches in diameter, 12,000 manholes, and 21,000 drop inlets. The main trunk sewers (a.k.a. interceptors) include the Alhambra Interceptor, the 18th Street Interceptor, the 5th Street Interceptor, the Donner Trunk, the Land Park Trunk, and the Riverside Trunk. The final four trunk sewers terminate at Sump 2, the main pumping station in the CSS.

Information regarding the other key facilities is presented in Table 2-2. Note that the Sacramento Regional Wastewater Treatment Plant (SRWTP) is not a part of the City's CSS, but it does provide secondary treatment and disinfection for all of the CSS dry weather flow and over 90 percent of all CSS flows.

2.4 Procedures for Routine Maintenance

The City has a full compliment of pumping station, treatment plant, and sewer maintenance personnel, including machinists, electricians, and instrument technicians. These maintenance personnel perform routine maintenance on all the CSS facilities operated and maintained by the City. The City's maintenance personnel can handle almost every maintenance requirement that may be encountered.

City crews remove obstructions in the CSS pipelines on a daily basis by flushing, "balling", root removal, and rehabilitating or replacing faulty pipes. Phone calls from customers reporting stoppages and other sewer problems are continuously received and logged onto a computerized data bases (the Hansen system). Depending on the nature of the problem, crews are dispatched to diagnose and clean the sewers or make appropriate repairs.

This year, the City purchases a new piece of truck-mounted equipment that removes sediment, debris, and water form drop inlets and gutters. The device will be used almost continuously to reduce the sediment load in the CSS as well as odors emanating from drop inlets.

Sump 2 is the only CSS facility operated by the City which functions 24 hours per day. All other critical CSS facilities are operated at an average of 100 hours per year. Due to the very limited use of the CSS during the summer, most of the routine evidence takes place during the summer dry-weather months from June through September. Routine maintenance lists are prepared during the wet-weather months when the CSS facilities are in operation. City is in the process of improving its routine maintenance program and has hired Westin Engineering, a local consulting firm, to develop a computer-based maintenance management system for the City's CSS and other wastewater facilities.

Table 2-2

Critical Combined Sewer Facilities
City of Sacramento

Facility Name	Facility Type	Operator	Location	Wet-Weather Capacity	Average Yearly Hours of Operation
Sump 1/1A	Pumping	City	2100 Front Street	130 mgd	100 hrs/yr.
Sump 2	Pumping	City	3530 Riverside Blvd.	530 mgd	24 hrs/day
Pioneer Reservoir	Storage	City	Front Street & U Street	23 mg	60 hrs/yr.
42nd Street Storage Reservoir	Storage	City	1751 42nd Street	1.4 mg	under construction completion 1/97
Combined Wastewater Treatment Plant (CWTP)	Treatment	City	1391 35th Street	130 mgd, Primary	100 hrs/yr.
Sacramento Regional Wastewater Treatment Plant	Treatment	Regional District	8521 Laguna Station Road, Elk Grove	60 mgd, Secondary for Combined System	24 hrs/day

* Normal average dry-weather sanitary flows of 34-45 mgd are pumped by Sump 2 to Sacramento Regional Waste Water treatment Plant.

Rev. 8/7/96

In compliance with Provision E4 of NPDES Permit No. CA0079111, the City issued a revised Plan of Operations for the CSS in July 1996 (Reference 2-1). The plan includes a system overview, operational goals, description of the CWTP, dry weather operating procedures, and wet weather operating procedures.

City staff fills out operations and sampling program reports as a part of their routine operating procedures. Copies of blank report forms in Reference 2-2. City staff also maintains a continuous narrative operating log in which entries are made during each shift. Sample pages from the narrative log are in Reference 2-3.

2.5 Non-Routine Maintenance and Emergency Situations

The City trains CSS personnel regarding operational procedures to be followed during storms and emergency situations. One of the key features of the City's wet weather management program is the Rain Patrol. These patrols are activated during heavy storms when additional staffing is needed. The patrols work on a 24-hour basis, if necessary. Reference 2-4 is the operating procedures for the Rain Patrols.

The City has established a list of local contractors and suppliers (Reference 2-5) with pre-approved charge accounts and budgets which can be contacted during emergencies to provide services, equipment, or materials.

2.6 Inspections

The City's CSS staff performs monthly inspections of key CSS facilities. Safety audit/inspection forms for the Sump 2 and CWTP are included in Reference 2-6.

2.7 Training

The City's Department of Utilities has a thorough training program for the staff that operates and maintains the CSS key facilities. New staff members receive special orientation and training. Documents relating to staff training are listed in References 2-7 through 2-10.

2.8 Periodic Review of Operation and Maintenance Plans

The City's operations and maintenance staff conduce weekly coordination meetings to discuss and evaluate plans for operating and maintaining the City's wastewater facilities, including the CSS.

The City has established thorough and successful operation and maintenance programs and are taking steps to improve these programs with additional computerized systems and the use of modern maintenance equipment. Therefore, the City is compliance with this minimum control.

3.0 MAXIMIZATION OF STORAGE IN THE COLLECTION SYSTEM

The City is continually investigating opportunities to increase storage in the CSS. As a part of routine sewer maintenance, City crews clean drop inlet grates and sumps and manholes in the collection system. The City has four Vector trucks with two-person crews for cleaning sanitary sewers and storm drains, including pipelines within the CSS, to remove silt and debris that could partially fill or block pipelines and reduce their capacity to store wastewater. The City has three truck-mounted television inspection equipment which are used daily to inspect the internal condition of the City's sewers and storm drains. One of the TV inspection trucks was recently purchased. It is a state-of-the-art machine and is dedicated to inspection of the CSS. The City plans to inspect all the combined sewers in the downtown area (the oldest part of the CSS) over the nest 2-1/2 years to establish a schedule for rehabilitation of defective pipelines and manholes. The TV inspection tapes are used to prioritize cleaning and the design of pipeline rehabilitation projects.

In 1978, Pioneer Reservoir was constructed to provide 23 million gallons of off-line detention storage of combined wastewater, pumped to the reservoir by Sumps 1/1A and 2, during storms (the storage capacity is actually 28 million gallons including the interceptor between Sump 2 and the reservoir). After the storm subsides, the stored wastewater is released bach to the SRWTP for secondary treatment and disinfection prior to discharge. During severe storms, overflows do occur from Pioneer Reservoir to the Sacramento River, but these overflows receive the equivalent of partial primary treatment because solids settle out in the reservoir. The reservoir is cleaned by flushing with river water after storms, and the flushing water and solids are treated at the SRWTP. In 1997, the City is going to install disinfection and dechlorination facilities at Pioneer Reservoir so that discharges to the Sacramento River will be adequately disinfected.

The City is presently constructing a 1.4 million gallon reservoir on R Street near 42nd Street to provide temporary storage in an area subject to frequent flooding. The wastewater will be pumped back into the collection system when the storms subside and downstream capacity is available. Thus, the stored water will receive secondary treatment and disposal at the SRWTP.

The City operates the two sumps to drain the collection system prior to the onset of predicted storms. This procedure empties the collection system thereby providing approximately 5 million gallons of storage within the existing CSS. In 1997, the City will equip one or more of the pumps at Sump 1A with variable speed drives which will allow the pump output to closely match the influent flow rate, thereby improving operation of Sump 1A. In 1998, the City will construct a new 160 million gallon per day (mgd) deep pump station at Sump 2. This major improvement will allow operation of this new pumping station earlier in a storm without waiting for the wastewater to rise as high in the pumping station wet well as it does now.

The City has a program whereby developers can mitigate their impacts on the CSS by either constructing detention storage as a part of the new development projects or contributing to a fund for the City to use to mitigate the impacts of new developments.

In 1995, the City studied the potential for increasing storage in the collection system by installing a real-time monitoring and control system utilizing depth sensors, flow control gates and inflatable dams operated by means of a supervisory control and data acquisition (SCADA) system. The study concluded there is no storage available for storms with greater than a 2-year recurrence frequency (i.e., a storm with a 50 percent chance of occurring every year) because the pipelines are flowing full due to the flat terrain in the CSS service area. A real-time monitoring and control system could possibly reduce the frequency of CSOs during storms smaller than the 2-year event. Following completion of the initial phase of the LTCP, the City plans to use its Sacramento Storm Water Management Model to further evaluate the potential benefits and costs of increasing in-system storage during small storms utilizing a real-time monitoring and control system.

The City has taken many steps to maximize storage in the CSS and is in compliance with this minimum control.

4.0 REVIEW AND MODIFICATION OF PRETREATMENT REQUIREMENTS

The Federal Clean Water Act and supporting enforcement regulations require establishment of an industrial pretreatment program to prevent release of industrial waste discharges to publicly-owned treatment works (POTW) which are not common to domestic sewage or are excessively strong and could disrupt wastewater treatment processes. The SRCSD is responsible for the industrial pretreatment program for the Combined Wastewater Collection and Treatment System under the Master Interagency Agreement between the County of Sacramento and the cities of Sacramento and Folsom.

The industrial pretreatment program regulates the non-domestic, industrial users of the regional sewers, including the City's CSS. The SRCSD adopted a Sewer Use Ordinance in November 1992 (Reference 3-1). All commercial and industrial firms located within the City's CSS service area, except those which are considered "domestic" businesses (e.g., restaurants, hotels, etc.), must complete and file an application for a sewer use permit (Reference 3-2). Some of the information required in the sewer use permit includes volume of flow, pollutant types, and concentration in the discharge. This ordinance prohibits several activities including, but not limited to, (1) obstruction of flow in the sewerage system, (2) interference with or overloading treatment or disposal processes, and (3) discoloration or causing any other condition which affects the quality of treatment plant influent or effluent in such a manner that inhibits the ability to meet receiving water quality... established by regulatory agencies.

The SRCSD maintains an up-to-date inventory of all commercial and industrial firms discharging to the CSS as well as to separate sanitary sewers. The SRCSD produces an annual report concerning its pretreatment program (Reference 3.3 is the 1995 annual report). The SRCSD pretreatment program is adequate and does not need modification at this time to comply with this minimum control.

The City has been conducting an intensive water quality monitoring program of discharges from its CSS (including CSOs) and the ambient water quality in the Sacramento River since February 1991. The results of the discharge characterization and water quality assessment, conducted over the last five years, reasonably concludes that discharges from the City's CSS comply with the water-quality-based requirements of the Clean Water Act. Approximately 92 percent of the storm-related CSS flow volume over the past five years received at least primary treatment with chlorination and dechlorination. The conclusion of the program to date is that the water quality impacts of discharges and CSOs from the City's CSS are minimal and are limited to a few excursions in coliform. The other constituents in CSS wastewater are similar to storm runoff from areas with separate storm drain systems.

The City has taken steps to correct the coliform excursions including additional staff training and cleaning sampling equipment. These steps have been reported to the RWQCB. In addition, the City will construct disinfection facilities to control pathogens in discharges from Pioneer Reservoir in 1997. Based on the results of the water quality monitoring program, it can be concluded that non-domestic commercial and industrial wastewater sources are not causing any identifiable, specific health, water quality, or environmental problem. Therefore, the City is in compliance with this minimum control.

5.0 MAXIMIZATION OF FLOW TO THE POTW FOR TREATMENT

The City has always operated the CSS to minimize the discharge of untreated CSOs to the Sacramento River by maximizing treatment at the SRWTP and the CWTP. The SRWTP provides secondary treatment, including chlorination and dechlorination, prior to discharge to the Sacramento River. The CWTP provides primary treatment, including chlorination and dechlorination, prior to discharge to the Sacramento River. In addition, the Pioneer Reservoir is currently being analyzed to determine if the solids removal within the reservoir is sufficient to classify it as a primary treatment facility, thereby increasing the total primary treatment capacity of the CSS.

The NPDES permit for the CSS requires operation of all treatment and storage facilities at full capacity prior to commencement of a CSO. The Plan of Operations for the CSS (Reference 2-1) contains the operational procedures that ensure that the treatment capacities of the SRWTP and CWTP and the storage capacity at Pioneer Reservoir are fully utilized prior to any untreated CSO to the Sacramento River. In addition, these operational procedures were developed to ensure that the highest degree of wastewater treatment is provided during a storm event according to the following treatment sequence:

1. SRWTP receives the initial flush of the CSS's storm flows up to 60 mgd. The CSS's annual average daily flow rate is approximately 34 mgd. The 60 mgd treatment limit is the City's allowance of treatment capacity of the SRWTP. However, CSS operators (before and during a storm event) work closely with the SRWTP operators to ascertain if there is any additional treatment capacity available for CSS flows during the storm event. On occasion, additional treatment capacity above 60 mgd has been available and has been utilized for CSS flows.

2. Once the 60 mgd City capacity allowance in the SRWTP is attained, the City's CWTP is activated. The capacity of this facility is 130 mgd. If inflows exceed the combined treatment capacity of SRWTP and CWTP (190 mgd), then flows are diverted to the Pioneer Reservoir. The storage capacity of Pioneer Reservoir is 23 million gallons with an additional storage volume of 5 million gallons in the Pioneer Reservoir interceptor.

3. If storm inflows persist above the 190 mgd treatment capacity when the Pioneer Reservoir and interceptor are full, then a partially treated CSO from Pioneer Reservoir occurs and persists as long as inflows to the CSS exceed the 190 mgd treatment capacity.

4. If storm inflows continue to persist, untreated CSOs occur from Sump 2. Sump 2 CSOs are necessary under extreme inflow conditions at Sumps 1/1A and 2. CSOs from Sump 2 are necessary to control rapidly rising wet well levels and to minimize flooding within city streets and buildings.

5. CSOs from Sump 2 are discontinued once the inflows drop to a rate whereby the operators can stabilize wet well levels at both Sumps 1A and Sump 2, and flows can be accommodated at the SRWTP, CWTP, and Pioneer Reservoir.

The above operating mode for the CSS was approved by the RWQCB in a letter dated January 13, 1995, from William H. Crooks, RWQCB Executive Officer, to James Sequeira, Director of Utilities for the City of Sacramento. This operating mode was a modification to the operating mode contained in the Plan of Operations in the October 1, 1990, Technical Overview Report. The October 1, 1990, operating mode was a direct result of the Cease and Desist Order issued to the City by the RWQCB for outflows from the CSS and emphasized the reduction in outflows and flooding on City streets. However, an adverse side effect of this operating mode was an under-utilization of the storage/treatment capacity of the Pioneer Reservoir. The modified operating mode (approved in January 1995) provides the same level of flooding protection as the October 1, 1990 operating mode, but allows for the full utilization of the storage and treatment capacity of the Pioneer Reservoir.

This change in operating mode is apparent in Table 5-1. During the first four years following the Cease and Desist Order, there were only two discharges from Pioneer Reservoir, but there were 24 CSOs at Sump 2. However, during the last two years, with the modification to the operations in effect, there have been 16 discharges from Pioneer Reservoir and 11 CSOs at Sump 2.

The last row of Table 5-1 is the percentage of the storm event flows that received either secondary treatment at the SRWTP or primary treatment at the CWTP for the years 1990-1991 through 1994-1995. The 1995-1996 data is not yet available. Over this five year period, 92 percent of the storm event flows have received primary or secondary treatment. The data in this table are based upon annual monitoring reports prepared by the Department of Utilities (Reference 5-1). The storm flow volumes were estimated by subtracting out the average monthly dry weather flow volumes from the wet weather months (October through May).

The above documentation demonstrates that the Department of Utilities is operating the CSS to maximize the treatment capacities of all available facilities (SRWTP, CWTP and Pioneer Reservoir), and that the treatment facilities providing the higher degree of treatment are being fully utilized before any facilities providing a lower level of treatment are allowed to discharge. Also, the January 1995 modification to the CSS operational plan, which allowed for the full utilization of the Pioneer Reservoir, not only reduced the volume of untreated CSOs during the last two years, but also likely reduced the frequency of untreated CSOs during this period, since the storage capacity of the Pioneer Reservoir and interceptor was fully utilized.

Finally, during the period from 1990-1991 through 1994-1995, approximately 92 percent of the average annual storm flow volumes received primary treatment or better. According to the federal CSO Control Guidelines, primary treatment presumes that the CSS is in compliance with the water-quality-based requirements of the Clean Water Act, providing this presumption is reasonable in light of the water quality data collected in the characterization of the CSOs and the water quality impacts of the CSOs on the receiving waters. The 5-year water quality assessment report, discussed Section 9, supports this presumption of compliance with the water-quality-based requirements of the Clean Water Act. The City has taken all possible actions to maximize flow to the POTW for treatment given the configuration and capacities of the CSS facilities. Therefore, the City is in compliance with this minimum control.

TABLE 5-1

CSS DISCHARGES SINCE CEASE AND DESIST ORDER

	90-91	91-92	92-93	93-94	94-95	95-96	TOTAL
CWTP							
#	13	12	22	11	17	12	87
MG	298	858	460	143	580	368	2,707
SUMP-2							
#	4	6	11	3	6	5	35
MG	27	102	239	18	443	91	920
PIONEER							
#	1	0	1	0	7	9	18
MG	15	0	42	0	200	266	523
							AVG
TREATED	97%	94%	86%	98%	85%	NA	92%

NA = Not available

6.0 ELIMINATION OF CSOs DURING DRY WEATHER

There are no dry weather CSOs from the City's CSS. The annual operating reports present the monthly discharge frequencies and volumes for the CSS. These data reveal that, from Fiscal Year 1986-87 through Fiscal Year 1994-95, there have been no discharges from the CSS during the dry weather months. Though the Fiscal Year 1995-1996 annual report is not yet available, there were no dry weather discharges during this past fiscal year either. The existing CSS has ample capacity for dry weather flows which average approximately 24 mgd and never exceed the 60 mgd City capacity allowance at the SRWTP. Thus, all the CSS flows in dry weather receive secondary treatment and disinfection prior to discharge to the Sacramento River. The City does not have any CSOs during dry weather and, therefore, complies with this minimum control.

7.0 CONTROL OF SOLID AND FLOATABLE MATERIALS IN CSOs

The City has several methods of controlling solids and floatable materials in CSOs. The City has an unusual program for yard clipping removal in which residents can place their yard clippings and fallen leaves in the gutters, and City crews, utilizing unusual front-end loaders come buy and scoop them up for disposal. This program reduces the chances for these materials to enter drop inlets and the CSS.

In spite of the program cited above, leaves and debris find their way into drop inlets. As stated in Section 3, above, the City uses Vactor trucks to routinely clean leaves and debris out of drop inlets. New drop inlets installed in the CSS usually conform with the City's modified Type B design and are equipped with a 90 degree down-turned ells on the discharge pipes within the drop inlets which limit the entry of floatable oil and other substances into the CSS.

At the sumps, large trash racks are used to block passage of large objects that could clog downstream pumps and treatment equipment. However, these racks also capture a lot of smaller objects and debris which tends to form mats on the upstream faces of the racks. This debris is manually removed with rakes during storms.

At the CWTP, solids that settle to the bottom of the sedimentation tanks are removed with flight-and- chain sludge collectors and pumped to the SRWTP. In addition, baffles and water surface skimming systems are installed in all the sedimentation basins to capture and remove floatable materials from the wastewater stream.

At Pioneer Reservoir, walls separating the reservoir into three basins cause most of the solids to settle to the bottoms of the first basin. The solids are flushed out of the reservoir after the storms and are conveyed to the SRWTP for treatment and disposal. A baffle exists in front of the overflow weir our of the third basin to capture floatable materials.

The City has employed all reasonable methods to control release of solids and floatable materials from its CSS. The City is in compliance with this minimum control.

8.0 POLLUTION PREVENTION PROGRAMS TO REDUCE CONTAMINANTS IN CSOs

The City has initiated the following programs to reduce contaminants in CSOs:

1. Scheduled street sweeping including collection of piles of leaves and yard clippings legally placed in the gutters by homeowners. This program substantially reduces the amount of leaves and debris that could enter the CSS through drop inlets during storms.

2. Regular garbage and recycled materials collection for disposal in landfills or recycling. Recycled materials include glass, plastics, and paper.

3. Hazardous household waste collection stations for delivery of used motor oil, paints and solvent, etc. This program discourages dumping these wastes into nearby drop inlets or creeks.

4. Drop inlet stenciling to inform people not to dump wastes into drop inlets because the water flows to the river without any treatment of disinfection.

5. Publication of educational pamphlets and bill inserts regarding the need to prevent pollution and what the individual citizen can do.

6. Educational workshops targeted to commercial and industrial businesses which include distribution of fact sheets and compliance guidelines.

7. Provision of curbside trash cans in commercial and public areas which reduces the litter in the gutters which could enter the CSS.

8. An aggressive public water conservation program which reduces the sanitary sewage component of CSOs.

9. A program of searching for illegal connections to the CSS.

In addition, the SRCSD maintains the industrial pretreatment program, described in Section 5, which applies to commercial and industrial businesses in the City's CSS service area.

The various pollution prevention programs in place in the City's CSS service area demonstrate the City's compliance with this minimum control.

9.0 PUBLIC NOTIFICATION

All CSOs from the City of Sacramento flow into the Sacramento River. One of the beneficial uses of the river is water-contact recreation. However, there are no public beaches along the river in the near vicinity of the City, and water-contact recreation is primarily limited to summertime activities such as water skiing well downstream of the City in the Sacramento-San Joaquin Delta. Summertime CSOs are as infrequent as the storms that cause them, and any CSOs are well diluted by the river flow before they reach the primary areas of water-contact recreation. (Note that the American River, which is used much more for water-contact recreation than the Sacramento, is upstream of all of the City's CSO locations.)

The primary potential health risk from the City's CSS are outflows of combined wastewater onto City streets within the CSS service area. The City conducted a health risk assessment that found there is no significant statistical difference in storm-related absenteeism between workers within and outside the CSS service area. Despite the findings of its health risk assessment, the City concentrates its public education program on informing the people who live and work in the CSS service area about the existence and condition of CSS, the need for improvements and rehabilitation of the CSS, and need to stay out of flooded areas during storms. The City's public education program includes publication of fact sheets and pamphlets in English and Spanish, a video about the CSS for showing at community and business organization meetings, cards for citizens to fill out commenting on the CSS Improvement Program or to ask questions, and a telephone hotline. The City has established a CSS public speakers' program in which informed speakers make presentations to neighborhood and business groups throughout the CSS service area informing people about the CSS. The City has conducted tours of key CSS facilities, such as Sump 2, for interested citizen groups. The City built a mobile, working model showing how rainfall reaches the river, carrying pollutants with it. In addition, the City's Rain Patrols, who go out into the CSS service area when it rains heavily, respond to complaints from the public; correct the problem on the spot, if possible; and complete forms documenting the problem so future corrective action can be taken, if necessary.

Given the locations of the City's CSOs, the lack of water contact recreation in the vicinity of the CSOs during storms, and the importance and effort placed on informing the public about conditions within the CSS service area, the City is in compliance with this minimum control.

10.0 MONITORING TO CHARACTERIZE CSO IMPACTS AND THE EFFICACY OF CSO CONTROLS

The information collected for this control is to provide a perspective on existing conditions and a basis for identifying progress that has been achieved by the application of other minimum controls. The City has provided documentation to the RWQCB on the characterization of CSS discharges in monthly NPDES monitoring reports and in a special 5-year study of the water quality and toxicity impacts of CSS discharges (Reference 10-1). Both the monthly NPDES reports and the 5-year study report provide a comprehensive perspective on existing CSS conditions and indicate that CSS discharges do not significantly impair the beneficial uses of the Sacramento River.

These reports also provide a basis for identifying progress made by the implementation of the other minimum controls. In addition, the reports will provide the basis for determining the improvements brought about by the implementation of the City's LTCP for the CSS. In addition, the new NPDES permit contains a monitoring program that will allow the City to continue to track and measure changes in the CSS conditions and receiving water impacts brought about by the minimum controls and the LTCP. Some of the uses that have been made of this data are discussed below.

The operational modification discussed in Section 5 was proposed as a result of evaluating the NPDES monthly monitoring reports. Based upon these monitoring data, City personnel were able to demonstrate to the RWQCB staff that the storage and treatment capacities of Pioneer Reservoir were not being fully utilized. The City further demonstrated that a modification to the CSS operations could be made to fully utilize Pioneer Reservoir, while maintaining the same level of flood and outflow protection provided by the original operational plan.

The mercury data collected under the 5-year study has been used to develop an estimate of the annual mercury loading contributions from the City's CSS in comparison to up-river loads on an annual basis. It was determined that the City's CSS mercury loads are less then 0.05 percent of the up-river mercury loads. This assessment was submitted to the RWQCB staff for their consideration on May 23, 1996.

Influent and effluent levels of total suspended solids and settle able solids from CWTP and Pioneer Reservoir have been evaluated to determine historical percent removal efficiencies. This data is being used by the City to develop a sampling scheme to further clarify the existing removal efficiencies of these two facilities and to determine if improvements are necessary to ensure that these facilities provide primary treatment and that the solids and other pollutant loads to the Sacramento River are not increased upon completion of the LTCP. When disinfection facilities are installed and operating at Pioneer Reservoir, and the City confirms that Pioneer Reservoir is providing primary treatment, the City will be in compliance with this minimum control.

11.0 CONCLUSIONS

The City of Sacramento is in compliance regarding implementation of the NMC. There are not dry-weather overflows from the CSS. Approximately 92 percent of the storm-related CSS flows receive primary or secondary treatment, and the average annual wet-weather CSOs do not exceed the four to six events considered acceptable under the presumptive approach in the National CSO Policy.

The City is implementing the initial phase of its LTCP which is designed to significantly reduce street flooding and outflows. The NMC will be continued as a part of the LTCP. The City is moving aggressively forward with improvements to and rehabilitation of its CSS as well as minimization of CSOs. The initial phase of the LTCP includes increasing pumping capacities at both Sump 1/1A and Sump 2, providing disinfection facilities at Pioneer Reservoir, and rehabilitating and improving CSS pipelines, especially in the old downtown area. The City is constructing the 42nd Street underground storage project to reduce local flooding. The City is also planning other improvements to relieve local flooding and eliminate outflows from the CSS. None or the CSS improvement and rehabilitation projects will increase CSOs or the pollutant loads reaching the Sacramento River.

CITY OF SACRAMENTO

COMBINED SEWER SYSTEM

NINE MINIMUM COMBINED SEWER OVERFLOW CONTROLS COMPLIANCE REPORT

REFERENCES

2-1. City of Sacramento Department of Utilities, Plan of Operations for City of Sacramento Combined Wastewater Control System, revised July 1996.

2-2. City of Sacramento Department of Utilities; various operation, sampling, and laboratory analyses report forms; mostly undated.

2-3. City of Sacramento Department of Utilities, sample pages from operators narrative log, April 14 and May 17, 1996.

2-4. City of Sacramento Department of Utilities; a set of Rain Patrol operational procedures and instructions, staff assignments, sump locations, and sample forms; undated.

2-5. City of Sacramento Department of Utilities, Purchase Requisition Budget, 1996/97, undated.

2-6. City of Sacramento Department of Utilities; a set of safety audit/ inspection report forms for Sump 2, the Sump 2 Flow Control Structure, and CWTP; undated.

2-7. City of Sacramento Department of Utilities, CWTP Operational Training Manual, undated.

2-8. City of Sacramento Department of Utilities, New Operator Orientation, undated.

2-9. City of Sacramento Department of Utilities, training lists for various CSS facilities and grades of operator, undated.

2-10. City of Sacramento Department of Utilities, Library Catalog Listings (of training materials), November 17, 1995.

3-1. Sacramento Regional County Sanitation District, Sewer Use Ordinance, approved November 24, 1992.

3-2. County of Sacramento, Water Quality Division, Wastewater Discharge Permit Application.

3-3. Sacramento Regional County Sanitation District, Pretreatment Program 1995 Annual Report, March 25, 1996.

5-1. City of Sacramento Department of Public Works, annual facilities operations reports, fiscal years 1990-1991 through 1994-1995.

9-1. City of Sacramento Department of Utilities, various pamphlets regarding the Combined Sewer System, storm water pollution, flood protection, water conservation, and services provided by the department.

10-1. City of Sacramento Department of Utilities, Effluent and Receiving Water Quality and Toxicity Summary Report for 1991-1995 and Proposed Sampling Program for 1995/1996, August 1995.

APPENDIX 15-6

NPDES OPERATIONS PLAN

overflows and outflows of combined wastewater by using a combination of primary and secondary treatment, conveyance, and storage. Flows to the SRWTP from the CWCS are conveyed through the City Interceptor.

The collection system of the CWCS serves approximately 10 square miles of combined sewer area and a 5-square-mile separated sewer area. The North Sacramento, Hagginwood, and County Sanitation District No.2 sanitary flows are intercepted by the Natomas Interceptor System, but can be directed into the combined sewer area during emergency conditions or for maintenance. Other separated sewer areas in the City are served by the Regional Interceptor System, but can also be directed into the combined sewer area during emergency conditions or for maintenance. Other separated sewer areas in the City are served by the Regional Interceptor System.

Major components of the CWCS are Sump 2, the CWTP, Pioneer Reservoir, and Sump 1. Figure 2 is a schematic of the CWCS. The major CWCS facilities are directly interconnected by the 120-inch Pioneer Interceptor, the 84-inch Sump 2 Interceptor, and the 72-inch Sump Force Main. Functional descriptions and design capacities of each of the CWCS elements are presented in Table 1.

Sump 1 consists of two pump buildings: Sump 1 Station (which is the original pumping station) and Sump 1 Annex (Sump 1A). The Sump 1 Station pumps are only used in the event of high flow, power failure, or other failure that prevents the use of Sump 1A. Unless otherwise noted, discussions of Sump 1 refer specifically to the Sump 1A facility.

The 72-inch City Interceptor is a six-mile combination force main and gravity pipeline that extends from the CWTP to the SRWTP. The upstream boundary of the City Interceptor is the valve structure which separates it from the CWCS and is located adjacent to the CWTP. The City Interceptor intercepts flow from the following service areas: Sump 2 (all dry-weather flows and a portion of wet-weather flows from the combined sewers), and Sump 55, 119, and 21. The latter three sumps serve separated sewer areas in the southern portion of the City. Flows from Sumps 55, and 119 are pumped directly into the valve structure at the upstream end of the City Interceptor at the valve structure via a 42-inch force main. Flows from Sump 55 can also be directed to the City Interceptor downstream of the valve structure through the new force main constructed by the City. Further downstream, the City Interceptor receives wastewater from the Pocket and Meadowview areas which includes Sumps 137 and 143.

Sanitary and combined wastewater is pumped from Sump 2 to the SRWTP through the 72-inch Sump 2 Force Main to the City Interceptor Valve Structure, and then through the 72-inch City Interceptor. Capacity at the valve structure for pumping from the CWCS through the City Interceptor to the SRWTP is 98mgd. Of this amount, 60 mgd capacity is reserved for pumping from Sump 2. The City Interceptor downstream of the valve structure is operated by the District, as shown by Figure 2.

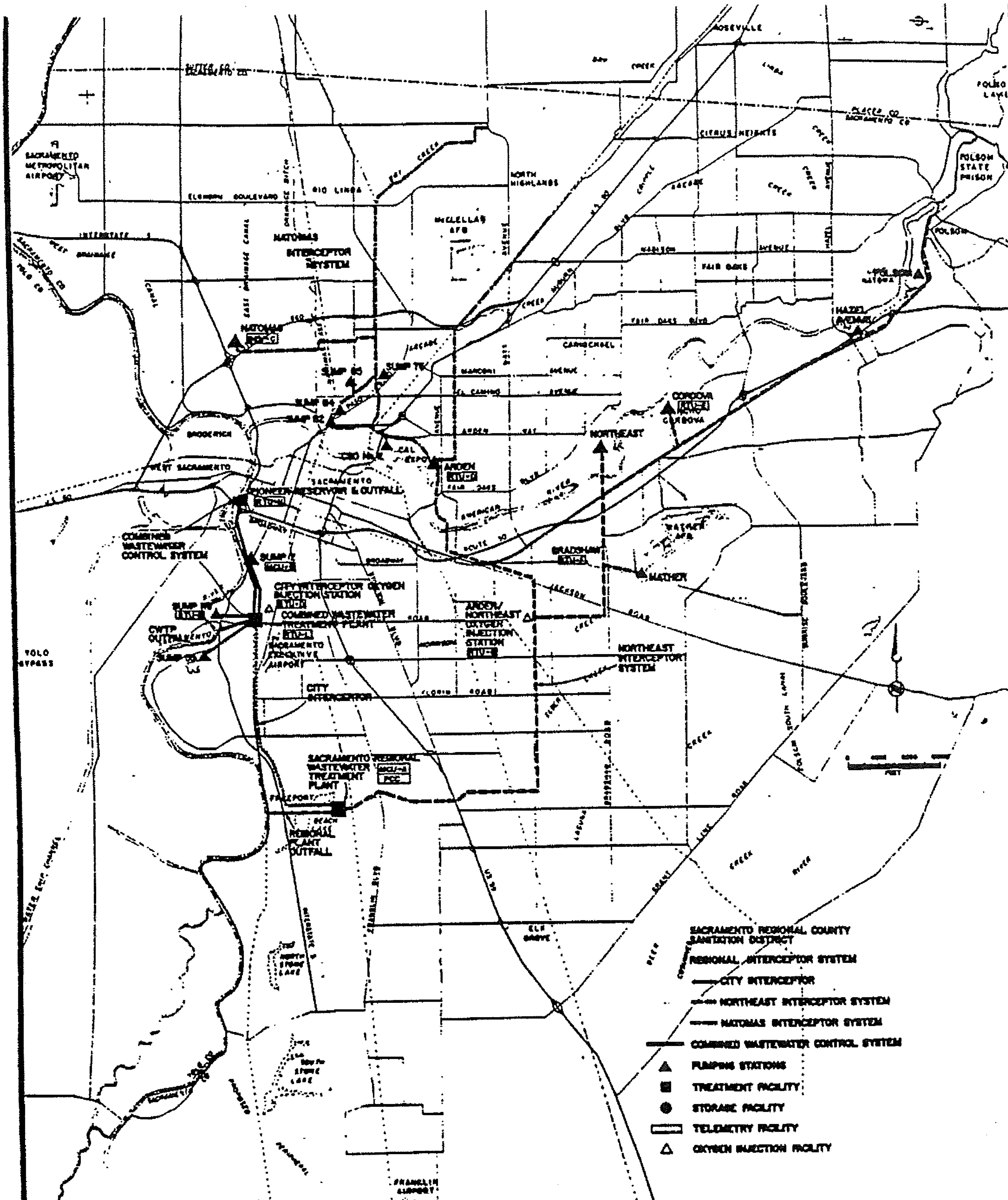


Figure 1.
SACRAMENTO REGIONAL WASTEWATER MANAGEMENT SYSTEM
SOURCE: CWCS O&M MANUAL, VOLUME I: SUMP 2, 1981

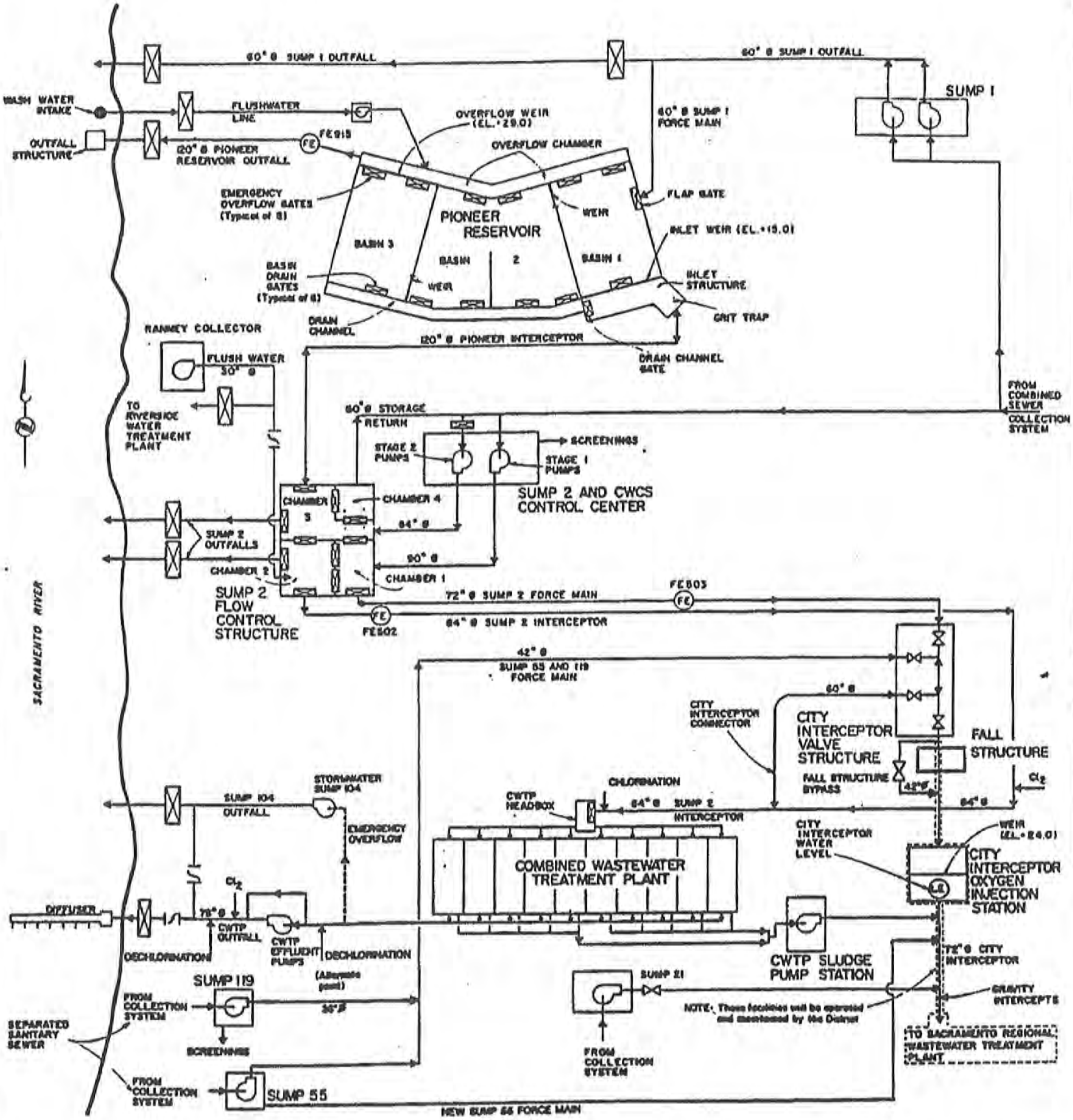


Figure 2.
COMBINED WASTEWATER CONTROL SYSTEM SCHEMATIC
SOURCE: CWCS O&M MANUAL, VOLUME I: SUMP 2, 1981

Table 1
Functional Description and Capacity of the Combined Wastewater Control System

Element	Function	Design Capacity
Sump 1/1A pipeline connection to Pioneer Reservoir	Alleviate flooding conditions in downtown Sacramento by pumping combined wastewater to Pioneer Reservoir	120 mgd, PWWF
Sump 2	Pump wet-weather and dry weather wastewater flow to City Interceptor for transport to and treatment at the SRWTP.	60 mgd. PAWF
	Pump wet-weather combined wastewater to CWTP for treatment	130 mgd, PWWF
	Pump wet-weather combined wastewater to Pioneer Reservoir for temporary storage	340 mgd, PWWF
	Pump stored wet-weather combined wastewater to either CWTP or SRWTP for treatment	34 mgd, ADWF
	Pump capacity wet-weather combined wastewater to Sacramento River (final function)	340 mgd, PWWF
Combined Wastewater Treatment Plant	Provide primary treatment of combined wastewater	130 mgd, PWWF
Pioneer Interceptor	Transport combined wastewater from Sump 2 to Pioneer Reservoir and from the reservoir back to Sump 2 for treatment	To storage - 340 mgd
	Provide interim storage capacity for combined wastewater	In-line storage - 5 MG
Pioneer Reservoir	Provide storage for combined wastewater pumped form Sumps 1/1A and 2.	23 MG
	Provide partial treatment through overflow form reservoir when discharging to Sacramento River.	350 mgd
84-inch Sump 2 Interceptor	Transport combined wastewater from Sump 2 to CWTP for treatment. Provide alternate routing of combined wastewater from Sump 2 through City Interceptor to SRWTP for treatment	130 mgd, PWWF
72-inch Sump 2 Force Main/City Interceptor	Transport combined wastewater through City Interceptor to SRWTP for treatment.	60 mgd, PAWF 34 mgd, ADWF

Note: 1. Total pumping capacity of Sump 2 is 530 mgd

2. ADWF and PDWF = average and peak dry-weather flow
ADWF = average dry-weather flow
PWWF = peak wet-weather flow
PAWF = peak all-weather flow

Oxygen is injected into wastewater from the CWCS at the upstream end of the City Interceptor to control odor producing sulfides. The Oxygen Injection Station is located adjacent to the CWTP, about 75-feet downstream of the valve structure. The Oxygen Injection Station, which is operated by the District, is the only facility on the City Interceptor that has a telemetry link to the CWCS at Sump 2.

CWCS OPERATIONAL GOALS

The City is committed to the operation of the CWCS in such a manner the maximizes the utilization of the system and City personnel. This in turn achieves the operational goals of protecting the health and safety of City residents while also protecting the Sacramento River.

The dry-weather and wet-weather CWCS operating procedures reflect the following goals:

1. Comply with the State's NPDES Permit.

2. Maximize the utilization of storage and treatment facilities.

3. Minimize or remove public health threats from outflows of combined wastewater into the City streets and prevent property damage.

4. Minimize or prevent Combined Sewer Overflows (CSO's) to the River.

DRY-WEATHER OPERATING PROCEDURES (June through September)

Dry-season sanitary flow at Sump 2 varies between 34 mgd to 45 mgd. Flow capacity reserved in the City Interceptor for pumping from Sump 2 to the SRWTP is 60 mgd. CWCS treatment and storage facilities are not required during the dry-weather; therefore, wastewater flows influent to Sump 2 are pumped to the SRWTP.

However, if a summer storm occurs, the following procedure is used: Shortly before an anticipated storm is due to begin, the wet well level at Sump 2 is lowered to add storage in the system. If the weather forecast indicates an intense summer storm, control then reverts to the wet-weather mode. The dry season flow control is as follows:

- Flows up to 60 mgd are treated at SRWTP.

- Flows in excess of 60 mgd are pumped to Pioneer Reservoir. As storage capacity is depleted, the decision is made whether or not to operate the CWTP. The decision to operate the CWTP is continuously evaluated as new rainfall data and storm pattern information is acquired and evaluated.

- As flows decrease below 60 mgd, storage is drained back from Pioneer Reservoir to Sump 2 to maintain 60 mgd flow to SRWTP.

For large dry-weather storms when the CWTP is started up, Sump 2 operation reverts to the wet-season operating procedure. In this case, Pioneer Reservoir is drained back to Sump 2 as soon as possible to ensure that maximum storage capacity is available to meet any impending storm.

WET-WEATHER OPERATING PROCEDURES (October through May)

In order to minimize hydraulic resistance and maximize capacity at both Sumps 1 and 2, the wet-season operating procedures incorporate the following key features.

- During shorter, low intensity storm events the City will utilize Pioneer Reservoir before starting CWTP to maximize storage. Pioneer Reservoir can be filled from both Sump 1 and Sump 2. This action achieves the operational goals, minimizes momentary startups and stops of CWTP and minimizes operation costs. The objective during all storms is to fully utilize the Reservoir storage and minimize CSO's to the Sacramento River.

- The City is utilizing Weather Web Pages on the Internet and other sources to track storm activity and patterns. This system is used by the CWCS operators in deciding appropriate steps in implementing the plan of operations for the CWCS System.

SUMP 1/PIONEER RESERVOIR

- Sump 1 normally operates during larger storm events when this pump station's wet well levels reaches a predetermined elevation. The normal flow path from Sump 1 is to Pioneer Reservoir.

- Combined wastewater will be pumped to Pioneer Reservoir from Sump 1.

- Sump 1 will continue to operate until the predetermined elevations are reached.

SUMP 2

- The wet well level at Sump 2 is normally maintained at the lowest possible level. The pumping rate to SRWTP will be maintained at 60 mgd or below unless otherwise authorized by SRWTP.

- Flows above 60 mgd sent to SRWTP, are diverted to the CWTP for treatment. If running the Stage 1, Sump 2 pumps cannot match influent rates with 130 mgd going to the CWTP, then Stage 2 pumps will be used to maintain control.

- During this wet season procedure, Gate 7 between Chambers 2 and 3 in the Flow Control Structure typically remains closed. Under normal conditions Stage 1 pumps will pump to the treatment facilities plants and Stage 2 will be used to distribute flows in excess of 190 mgd to Pioneer Reservoir for storage.

- When all CWCS facilities have been utilized to their fullest extent and Sump 2 wet wells levels continue to rise above elevation +5.0 feet, Gate 5 in the Flow Control Structure will be opened, and Gate 3 closed, for a direct discharge to the Sacramento River. If wet well levels continue to rise further, Gate 4 in the flow control structure will also be opened to the river. The discharge will continue until the CWCS facilities can manage the system by maintaining the +5.0 feet or below wet well elevation.

TABLE 2

WET WEATHER OPERATIONAL PLAN FOR THE CWCS

Conditions in the CWCS	Operational Procedures
1. Sump 2 influent flow rate exceeds 60 mgd and Sump 2 wet well level is at or anticipated to reach +5.0 feet.*	1. Start additional pumps and direct this flow: a. to Pioneer Reservoir, b. once staffed, send flows through to CWTP.
2. Sump 2 influent flow rate exceeds 190 mgd and Sump 2 wet well level is at or anticipated to reach +5.0 feet.	2. Start pump(s) and direct flow to Pioneer Reservoir.
3. Sump 2 influent flow rate exceeds 190 mgd, CWTP is receiving 130 mgd flow, all Stage 2 pumps are at full capacity to Pioneer Reservoir, and Sump 2 wet well over +5.0 feet and continuing to climb.	3. If Pioneer Reservoir is not overflowing to the Sacramento River, open the Reservoir drainage gates to equalize reservoir levels which decreases the discharge head on the pumps and increases pumping capacity. To further increase pumping capacity, open the necessary overflow gates at the Reservoir.
4. Sump 2 influent flow rate exceeds 190 mgd, CWTP is receiving 130 mgd flow, all Stage 2 pumps are at full capacity to Pioneer Reservoir, Pioneer Reservoir overflow gates are opened and Sump 2 wet well is over +5.0 feet and climbing.	4. Open Gate 5 and then close Gate 3 to commence overflow to the Sacramento River from Sump 2.**

* If the operator has information from weather web pages indicating the storm is of minimal size the operator may sustain flows to Pioneer Reservoir without calling out the staff for CWTP until Basin 1 overflows into Basin 2 at Pioneer Reservoir.

** This operation is to prevent outflows into the streets. It will continue only until the hydraulic conditions return to a point where the wet well can be maintained at or below +5.0 feet.

Note: If CWTP is in drain mode and another storm should arrive, it may become necessary to start Operational Procedure 1.

COMBINED WASTEWATER TREATMENT PLANT

General Description

The CWTP is designed to provide primary sedimentation and disinfection of intermittent overflows of up to 130 mgd from the CWCS.

Combined wastewater flows pumped through the 84-inch Sump 2 Interceptor are received at a headbox influent structure equipped with an 84-inch slide gate for shut-off control of plant flows. From the headbox, flow is distributed through concrete channels to five rectangular sedimentation basins, each of which is divided longitudinally into two independently operating sedimentation tanks (10 tanks total). Influent flow to the tanks is limited to pre-selected units by operating the tank influent slide gates. Primary effluent from the sedimentation basins flows through underground piping through a flow meter to the effluent pump structure.

Sludge settled out in the sedimentation tanks is deposited by chain and flight scraper mechanisms into pits at the effluent end of the tanks. Then 500-gpm vortex type sludge pumps, located in dry pits adjacent to each sedimentation tank, draw suction from the individual tanks sludge pits and deliver it through a piping connection into the City Interceptor pipeline for conveyance to the SRWTP. This piping connection serves as drainage for the sedimentation tanks via the sludge pumps. The sedimentation tanks are also equipped with scum withdrawal piping, which is connected to scum piping facilities. Scum pumps discharge through separate piping into the 42-inch Sump 119 trunk sewer at the south side of the plant.

Metered primary effluent either flows by gravity or is pumped from the effluent pump structure through a 78-inch effluent pipeline to an outfall diffuser in the Sacramento River. Effluent pumping facilities include six 15-mgd and four 23-mgd vertical mixed flow propeller pumps, which discharge into a surge chamber that limits head build-ups on the effluent pipeline. The mode of effluent flow, whether by gravity or by pumping, is dependent on Sacramento River stage elevation. A vacuum pump station is provided near the outfall location to create and maintain siphon action through a high point in the effluent pipeline. The outfall diffuser distributes effluent flow along the bed of the eastern half of the river.

Chlorination facilities, provided for disinfection and odor control, include sodium hypochlorite liquid bulk tank supply, metering facilities, and solution injection equipment. Hypochlorite solution is applied to wastewater flows in the Sump 2 Interceptor (84-inch), and/or in the sedimentation basin headbox. A connection point is provided into the City Interceptor (72-inch) to assist in start-up, equipment testing, and shut-down procedures.

Dechlorination facilities include liquid sodium bisulfite storage, metering, and injection equipment. The sodium bisulfite solution application point is located in the primary effluent pipeline upstream of the effluent pump structure.

An outfall drainage pump station is provided to effect rapid drainage of the effluent pump structure and the effluent pipeline. It is located off the plant site along the effluent pipeline route.

Confined air contained in plant structures and pipelines handling process flows, and in the Sump 2 Interceptor (84-inch) and effluent pipeline, is collected and processed through activated carbon beds.

Water for chlorination, dechlorination, basin sprays, structure washdown, landscape irrigation and miscellaneous uses is provided at the plant by four on-site wells and two connections to the City water system. Three wells and one City supply connection discharge to ground level storage in the water pump station. Four turbine pumps at this station supply the high pressure system serving most of the plant's needs. The fourth well is provided with a hydropneumatic tank and supplies the plant utility water system. The second City water system connection supplies the plant's domestic needs. Water for the remote dechlorination station injectors is supplied by booster pumping from the local City system distribution main.

Operational Requirements

The CWTP is required by the agreement between the City and County to be maintained in operational readiness by the City for initiation of primary treatment and disinfection of up to 130 mgd within the following response time periods:

TABLE 3. CWTP RESPONSE TIMES

SEASON	Operational Response Time (hours)
Dry-Weather:	
• June through August	72
• May (a)	24
Wet-Weather:	
• October through May	6
(a) at 80 percent capacity	

Conformance with the wet season response time is maintained by monitoring weather forecasts, actual precipitation, and consequent system flow increases at Sump 2.

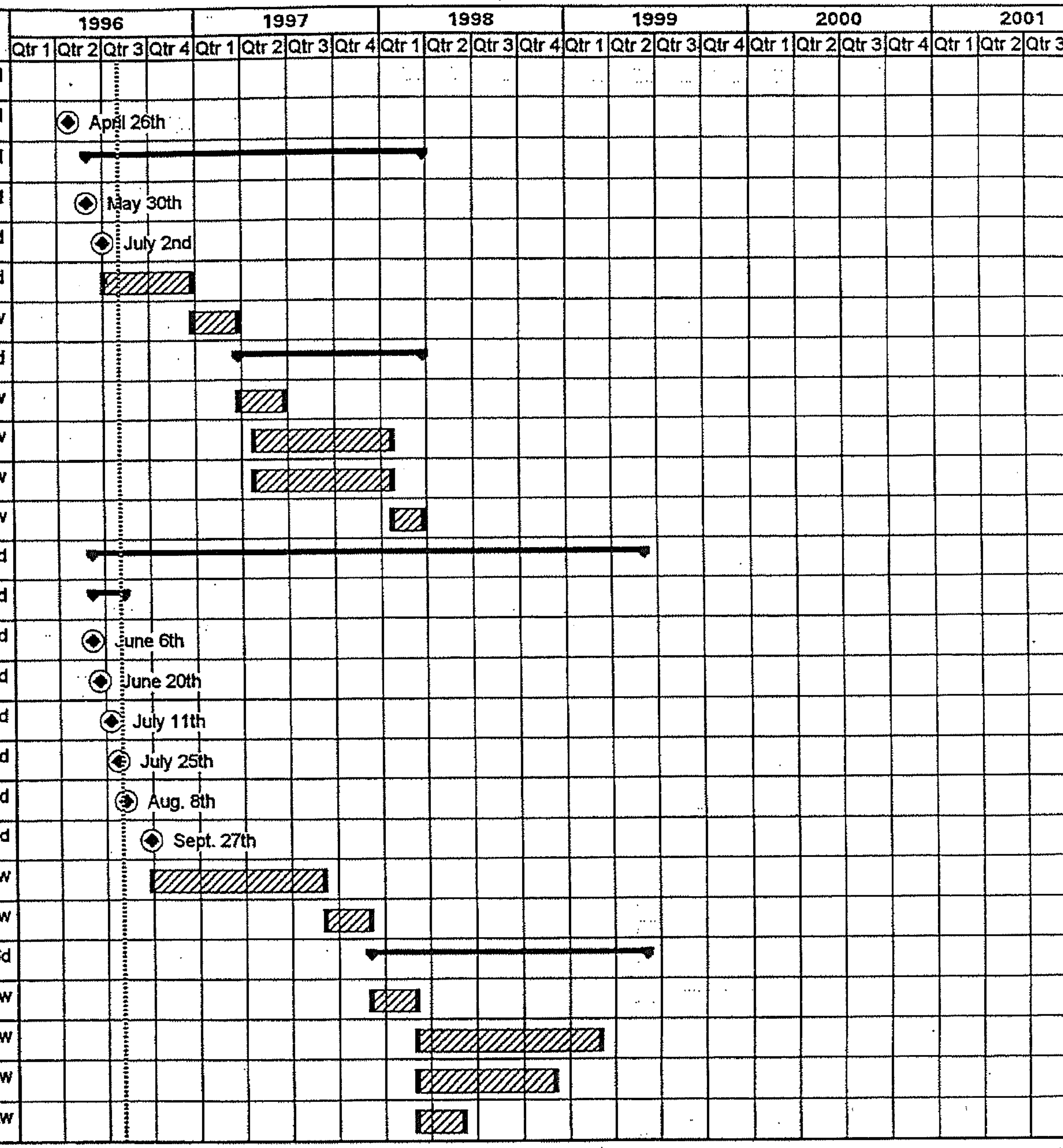
contact time. Individual feed dosages are set based on trial and error using sample analyses to optimize feed rates and application points.

Chlorine demand. Chlorine demand is the difference between the amount of chlorine added to water and the amount of residual chlorine remaining after a given contact time. Due to the varying influent flow rates experienced at CWTP contact times can also vary.

Bisulfite feed rate. In considering chemical strength variations, the sodium bisulfite feed rate can be adjusted up to a dependable rate of 20 mg/1 at 130 mgd plant flow. If the chlorine residual limit of 0.1 mg/1 during any storm is being met with difficulty, the sodium bisulfite feed rate can be increased. Other options include reducing the hypochlorite dosage, if possible, as long as disinfection limits are being met, or moving dechlorination to Point 2 to effect a lower residual. Periodic residual checks are made to prevent overdosing of sodium bisulfite.

CSS Project Schedule

ID	Name	Duration
1	Design Consultant Selection	0d
2	Interviews	0d
3	Sump 1/1A and Pioneer Res. Project (XM23)	473.5d
4	Scoping/Design Alt. Workshop	0d
5	Design SOW/Contract to Council	0d
6	Design	125d
7	Bid Period	13.02w
8	Construction	260.4d
9	Submittals/Mobilization	13.02w
10	Sump 1/1A Modifications	39.06w
11	Pioneer Reservoir Disinfection	39.06w
12	Testing & Cleanup	8.68w
13	Sump 2 Project - Phase 1 (XD41)	781d
14	Montgomery Scoping Workshops	45d
15	Workshop 1	0d
16	Workshop 2	0d
17	Workshop 3	0d
18	Workshop 4	0d
19	Workshop 5	0d
20	Design SOW/Contract to Council	0d
21	Design Phase 1	49w
22	Bid Period Phase 1	12.88w
23	Construction Phase 1	390.6d
24	Submittals/Mobilization	13.02w
25	160 MGD Pumping Station	52.08w
26	Emergency Standby Generators	39.06w
27	Vacuum Priming Modifications	13.02w

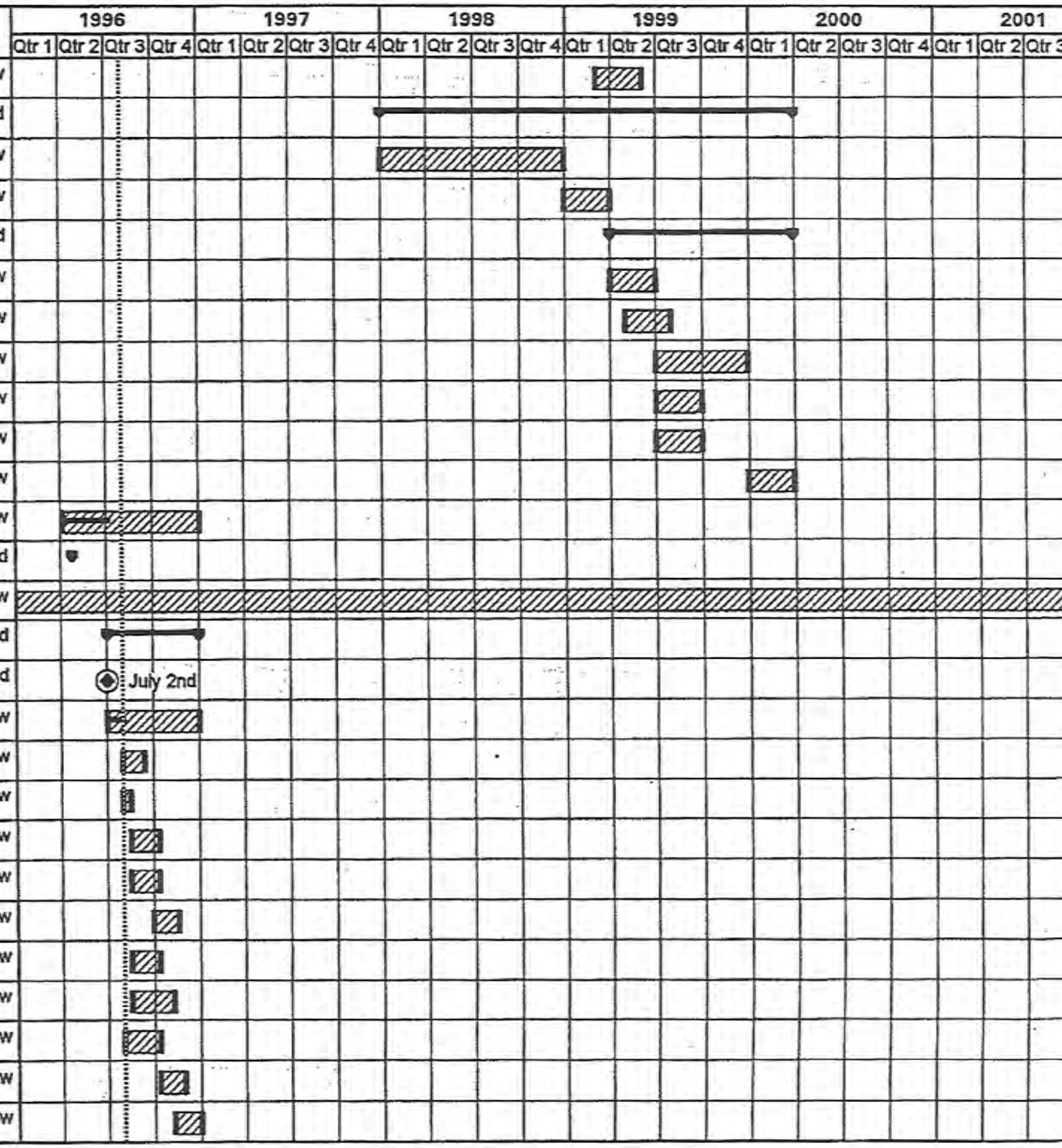


CSS
Date: 7/29/96

Critical | Progress | Recurring
Normal | Summary | Milestone

CSS Project Schedule

ID	Name	Duration
28	Testing & Cleanup	13.02w
29	Sump 2 Project - Phase 2	585.2d
30	Design Phase 2	52.08w
31	Bid Period Phase 2	12.88w
32	Construction Phase 2	260.4d
33	Submittals/Mobilization	13.02w
34	Wet Well Rehabilitation	13.02w
35	Mechanical Bar Screens	26.04w
36	Replace Discharge Valves	13.02w
37	Stage 1 Discharge Header Rehabilitatio	13.02w
38	Testing & Cleanup	13.02w
39	Enviromental Impact Report	39w
40	Financing	1d
45	Public Education Program	330w
46	CWTP Predesign Report(Brown & Caldwell)	131d
47	SOW/Contract to Council	0d
48	Project Management	26.2w
49	Equipment Rehabilitation Evaluation	6.4w
50	Data Review	2.4w
51	Solids Removal Evaluation	8.2w
52	Disinfection Evaluation	8.2w
53	Capacity Evaluation	7.2w
54	Gas Emission Control	8.2w
55	PC & Instrumentation	12.2w
56	Structural Evaluation	10.4w
57	Cost Estimating	7.2w
58	Predesign Report	7.6w



CSS
Date: 7/29/96

Critical Progress Recurring
Normal Summary Milestone

CSS Project Schedule

ID	Name	Duration	1996
59	42nd Street Project - Construction	167d	
62	Land Park Relief Sewer Project - Phase 1	0d	Future Project
63	Sewer Rehabilitation Projects	0d	CIF Projects

CSS
Date: 7/29/96

Critical
Normal
Progress
Summary
Recurring
Milestone