

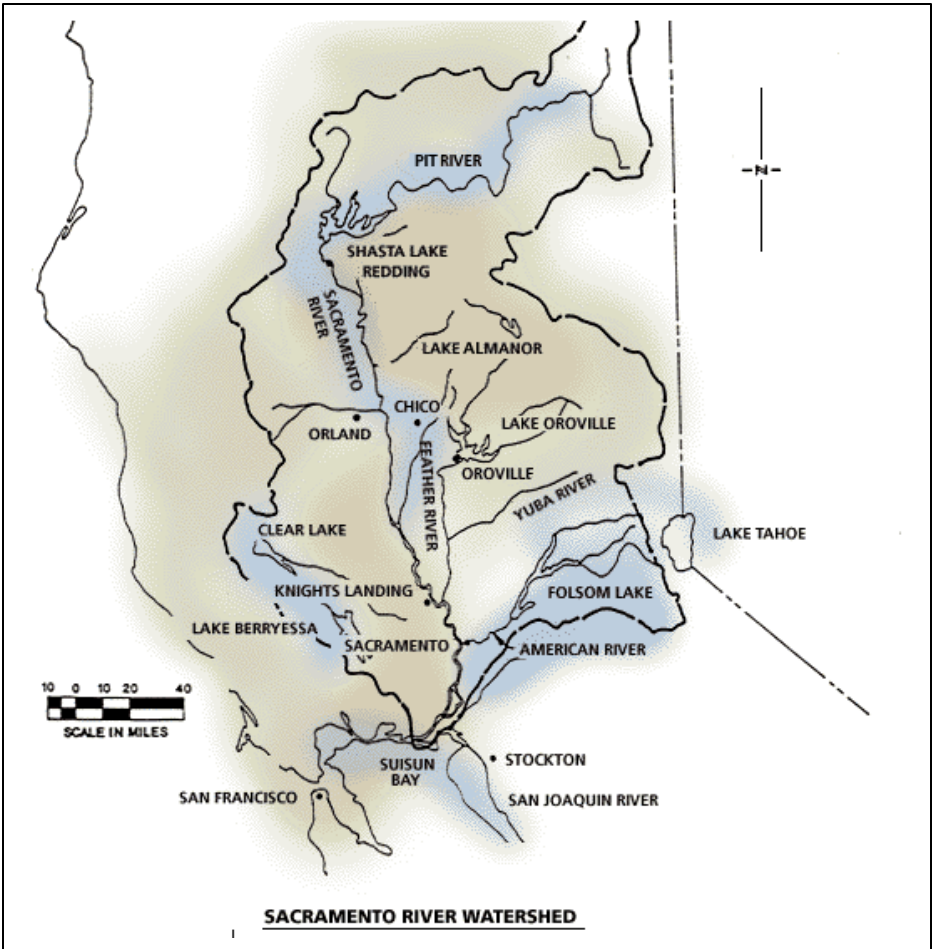
# 4.8 STORMWATER, WASTEWATER AND FLOODING

This Chapter addresses the capabilities of the City’s combined stormwater and sanitary sewer system, the additional flows that could be expected from implementation of the Redevelopment Plan, and flood zone requirements. This analysis is based on consultation with the City of Sacramento Utilities Department, the Sacramento General Plan Update EIR (SGPU EIR), and the Draft Final Report for the 65<sup>th</sup> Street/University Transit Village Infrastructure Needs Assessment, Approved Capital Improvement Program.

## 4.8.1 SETTING

As shown in Figure 4.8-1, the City of Sacramento is located at the confluence of the Sacramento and American rivers, which join with the San Joaquin River before flowing into the San Francisco Bay. The Sacramento River is about 400 miles long, and originates in the Cascade and Trinity mountain ranges of northern California and southern Oregon, draining the northern part of California’s Central Valley. The American River originates in the Sierra Nevada Mountains just southwest of Lake Tahoe.

**Figure 4.8-1  
Sacramento River Watershed**



Source: Sacramento Regional County Sanitation District web site, [www.srcsd.com](http://www.srcsd.com).

The Sacramento River Basin covers nearly 27,000 square miles, or about 17 percent of California's total land area.<sup>i, ii</sup> The Sacramento River is the third largest in California and a major source of water for irrigation and for drinking, with a total runoff of about 22 million acre-feet per year. The River has an average annual flow of 17.9 million acre-feet per year, compared to 2.8 million acre-feet per year for the American River.<sup>iii</sup> Late summers generally have lower levels compared to the late winter and spring. Average flows in the peak months – February for the Sacramento River and May for the American River – are approximately nine times greater than the average flows in the low months.<sup>iv</sup>

Major storm events can produce high flows through the Sacramento and American river systems. Flood control facilities along these rivers consist of a comprehensive system of dams, levees, overflow weirs (diversion structures in the river intended to ensure a maximum flow in the river), flood control bypass channels, and drainage pumping plants. Such facilities harness flood flows by regulating the amount of water passing through a particular reach of the river. The Sacramento River flood control system downstream of the American River was designed to hold a maximum flow of 110,000 cubic feet per second (cfs) with a minimum of three feet of freeboard. The American River flood control system was designed to hold a maximum flow of 115,000 cfs with a designed minimum of five feet of freeboard.

The City's stormwater drainage system consist of a network of natural channels, canals, levees, subsurface drains, and pumping stations that ultimately drain into the Sacramento and American Rivers. Stormwater in the City, specifically urban runoff, is disposed of in the City via either conveyance to the rivers through sumps, pipelines and treatment faculties primarily organized by drainage basin, or conveyance by the City's Combined Sewer System (CSS) along with sewage, to the Sacramento Regional Wastewater Treatment Plan (SRWTP).

## **DRAINAGE SYSTEMS**

The Project Area is served by several separate storm drain systems. The western portion of the Project Area located north of Folsom Boulevard and east of 65<sup>th</sup> Street to the UPRR levee and south to about 14<sup>th</sup> Avenue is served by the Sump 31/113 system. A small portion of the Project Area located south of Folsom Boulevard and west of 65<sup>th</sup> Street is served by the City's Combined Sewer System (CSS) (further described below). The Project Area east of the UPRR and south of Folsom Boulevard is currently served by the Sump 37/143 system. North of Brighton Avenue is served by the Sump 155/91 system, between Folsom Boulevard and the UPRR. Major storm drains are located in streets throughout the Project Area.

The Sump 31/113 system serves an area of approximately 940 acres bounded by 60<sup>th</sup> Street on the west, 21<sup>st</sup> Avenue on the south, and the UPRR on the northeast. The Sump 31/113 system includes two pump stations, Sump 31 at 65<sup>th</sup> Street and Elvas Avenue, and Sump 113 at Folsom and the UPRR tracks. Sump 113 discharges stormwater from the Folsom underpass at the UPRR tracks to a drainage pipeline that leads to Sump 31. Sump 31 discharges stormwater to College Ditch, an open channel that traverses the California State University Sacramento (CSUS) campus and eventually discharges to the American River. The Sump 31/113 system has experienced frequent spot flooding due to lack of sufficient capacity. In response to the occasional flooding within the Sump 31/113 system, the City approved and is implementing a Sump 31 Improvement project. The project includes storm drain improvements to portions of the system, increasing the capacity of Sump 31, developing a force main bypass across CSUS to augment Sump 31 and Campus Ditch capacity,

developing a Central Detention Basin (CDB) near 65<sup>th</sup> Street and Broadway within the Project Area (anticipated to break ground in spring 2005), and the City obtaining discharge permits from the Regional Water Quality Control Board, Central Valley Region (RWQCB) to allow for an increase in discharges to the American River.

The City had determined that implementation of the Sump 31 Improvement Project would both reduce spot flooding in the Sump 31/113 service area and provide the additional capacity required to accommodate the expected incremental increase in runoff associated with General Plan buildout. Since that determination, the 65<sup>th</sup> Street/University Transit Village Plan amended the General Plan and modified the buildout scenario. In addition, the proposed South 65<sup>th</sup> Street Area Plan would amend the General Plan further. Some on-site mitigation for new General Plan densities adopted with the Transit Village Plan and proposed South Area Plan will be required on a project by project basis (Yee, 2004).

## **WASTEWATER**

Wastewater is managed in the portion of the Project Area east of the UPRR by the County Sanitation District No. 1, and west of the UPRR by the City's CSS. These services connect to a regional interceptor system operated by the Sacramento Regional County Sanitation District (SRCSD). SRCSD is responsible for providing wastewater service to the majority of Sacramento County, including the cities of Sacramento and Folsom. The SRCSD maintains and operates its own wastewater collection and conveyance system, conveying wastewater through the Regional Interceptor System to SRCSD's Sacramento Regional Wastewater Treatment Plant (SRWTP) located in Freepoint, approximately seven miles southwest of the Project Area.

SRCSD currently has a \$300 million capital expansion program underway to expand the capacities of the Regional Interceptor System and the SRWTP. The Regional Interceptor Master Plan 2000 (or Master Plan 2000) is a long-range master plan for the large diameter interceptors that transport wastewater to the Sacramento Regional Wastewater Treatment Plant. The Master Plan 2000 recommends interceptor upgrades/expansions through 2035 that when operational will provide capacity for all planned development within the County's Urban Service Boundary and West Sacramento, providing a maximum treatment capacity of 516 mgd PWWF at service area buildout around the year 2050. A current expansion is planned to increase SRWTP capacity to 218 mgd, which would be sufficient to accommodate buildout populations of the city and county of Sacramento and the City of West Sacramento through the year 2020 (EDAW 2002).

Existing customers pay for their portion of their respective relief projects via their monthly user charges. Future customers will pay for their portions through impact fees (most relief projects are allocated to both existing and future customers).

### ***Combined Sewer System***

Approximately 2,200 acres encompassing River Park, CSUS and the eastern Sacramento area contribute sanitary sewage flows to the Combined Sewer System, as part of an area bounded by the Sacramento and American rivers, 65<sup>th</sup> Street, and Sutterville Road. This system consists of a single network of pipelines that collect both storm water drainage and sanitary sewer discharges from the downtown area. In the Project Area, the CSS covers the area west of the UPRR, north of 14<sup>th</sup>

Avenue, east of 65<sup>th</sup>, as well as the Project Area north of Highway 50 and west of the UPRR. Sanitary sumps connected to the CSS are located throughout this part of the Project Area.

The CSS conveys flows from the City south to the SRWTP. Currently, the City has an agreement with SRWTP to deliver no more than 60 million gallons per day (mgd) peak flow from the City's Sump 2 service area to the regional interceptor sewer (Allen, 2000). The SRWTP is a secondary treatment facility that provides raw influent and effluent pumping, primary clarification, secondary treatment with the high-purity oxygen activated sludge process, disinfection, solids thickening, and anaerobic solids digestion.

When CSS flows are greater than 60 mgd, CSS flows are diverted to the City's Combined Wastewater Treatment Plant (CWTP), located near South Land Park Drive and 35<sup>th</sup> Avenue, which only provides primary treatment. Wet weather flows are known to exceed system capacity during heavy storm events. Flows during heavy storm events, which are in excess of the 190 mgd combined capacities of the SRWTP (60 mgd) and CWTP (130 mgd), result in a combined sewer overflow (CSO). During CSO events, the City diverts excess flows to the Pioneer Reservoir for storage, which has a capacity of 28 mgd. When the Pioneer Reservoir reaches capacity, excess flows are directly discharged into the Sacramento River without treatment. When the pipeline system and treatment plant capacities are surpassed, the excess flows flood local streets in the downtown area through manholes and catch basins.

Exposure of people to untreated wastewater creates a health risk. On June 22, 1990, the RWQCB adopted Cease and Desist Order No. 90-179, requiring the City of Sacramento to cease and desist CSS discharges into the Sacramento River in violation of RWQCB Order No. 85-342. The Cease and Desist Order (and amendments 91-199 and 92-217) required the City to undertake operational improvements on the CSS, and perform a risk assessment on the known and potential health impacts of CSOs (City of Sacramento, 1996).

In compliance with the Order, the City submitted numerous alternatives to improve the CSS, as well as performed a public health risk assessment from outflows of the CSS. The City concluded that completely separating the sewer and storm water systems and conducting rehabilitation of the CSS would have adverse effects to City streets and would be economically infeasible. Thus the City identified a long-term control plan (CSS Improvement Program) which includes system improvements to reduce CSO events. Rehabilitation of the CWTP and the remaining sewers will occur until about the year 2010.

On March 22, 1996, RWQCB rescinded the Cease and Desist Order and issued a new National Pollutant Discharge Elimination System (NPDES) permit (Order No. 96-090) that includes a schedule for implementing the initial phase of the CSS Improvement Program.

### ***County Sanitation District No. 1***

All portions of the Project Area to the east of the UPRR are located in County Sanitation District 1 (CSD-1), and sanitary flows are conducted by gravity flow into sewer interceptors that connect to the Sacramento Regional Wastewater Treatment Plant (SRWTP).

CSD-1's system is comprised of multiple smaller sewerage districts that existed prior to CSD-1's formation in 1978. Since then, CSD-1's service area has "densified," resulting in higher wastewater

flows than originally anticipated. Trunk sewer relief needs are determined by density and wet-weather flow monitoring data. CSD-1 staff has found that sewer relief is needed to accommodate “densified” existing areas and those projected for development.

The CSD-1 Sewerage Facilities Expansion Master Plan (Sewer Master Plan) supports development of a Capital Improvement Program that will provide for sewerage facilities and relief sewers to address future development and minimize the risk from sewer overflows that could occur during storm events. The Sewer Master Plan was updated in 2000 to identify interceptor and trunk sewer projects needed to remedy existing deficiencies in the existing system and to accommodate planned growth within the Urban Services Boundary through the year 2020.

## **EXISTING GROUNDWATER CONDITIONS**

The Sacramento area and most of the Central Valley is underlain by a thick layer of alluvial soil, deposited over time by streams flowing from the mountains. The alluvium is saturated at a relatively shallow depth. The groundwater that lies beneath this alluvium in the Sacramento area is part of a large aquifer system that extends throughout the Central Valley. The aquifer is generally recharged by the Sacramento, American, and Cosumnes Rivers, and other tributary streams. The groundwater levels around Sacramento have been declining since 1940, at a rate of approximately 1.5 feet per year.<sup>v</sup> South of the American River, groundwater levels are stable. Groundwater depth in the Project Area generally ranges from 10 to 20 feet, although site-specific differences in groundwater depth may exist.

The City Utility Department requires that any groundwater discharges be regulated and monitored to reduce releases of contaminated groundwater. As discussed in the Initial Study, engineering requirements to mitigate any potential impacts from dewatering would be a subject of the City-required soils reports and geological investigations, and controlled by permit through the City’s Public Works departments. This would ensure a less than significant impact, thus groundwater discharges are not further discussed in this document.

## **FLOOD ZONE REQUIREMENTS**

Much of the Sacramento area is a floodplain for the two major rivers. Before levees were built in the early 20<sup>th</sup> century, flooding across the area was common. Over time natural levees developed, but snow melting in the mountains and winter and spring rains regularly caused the rivers to leave their banks and spill over the levees. Today Sacramento has an extensive system of flood controls that has greatly reduced flood occurrence and severity. Without the levees, the 100-year floodplain would extend through much of the developed areas of the City of Sacramento and Sacramento County; with the levees, flood hazard areas are limited to narrow bands around the Sacramento and American rivers and some of the tributaries.

The most significant documented flood event occurred in February of 1986, when the flow rate in the Sacramento River was approximately 642,000 cubic feet per second (cfs) and the flow in the American River was approximately 13,000 cfs.<sup>vi</sup> During that intense storm episode, runoff was contained within the levees and emergency spillways of Sacramento’s flood control system. Some areas experienced local flooding during that event, which pointed to some weaknesses within the flood control and drainage system.

Major portions of the City of Sacramento, including the areas of the Project Area east of the Union Pacific Rail Line, are located in a potential flood hazard area. The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Maps (FIRM) that delineate flood hazard zones for communities. The Project Area is partially within an area designated as an A99 flood zone by a Letter of Map Revision (LOMR) to the City's FIRM (dated July 6, 1998), issued by FEMA on May 22, 2000 (Panel Number 060266 0010F). This zone is applied to areas of the City which have less than 100-year flood protection; however, FEMA has determined that adequate progress has been made on a Federal funded flood control project which, when completed, will provide 100-year flood protection to those areas. The City of Sacramento has evaluated these risks associated with allowing development within the A99 Flood Zone in the Programmatic Environmental Impact Report (EIR) prepared in connection with the Land Use Planning Policy Within the 100-Year Floodplain (the "Policy") (M89-054) which was adopted by the City Council on February 6, 1990. Accordingly, the findings adopted by the Council in connection with its certification of the Program EIR and its adoption of the Policy are applicable to the proposed Redevelopment Plan. These findings are set forth in the Findings of Fact/Statement of Overriding Considerations for the Land Use Planning Policy Within the 100-Year Flood Plain in the City of Sacramento. This Program EIR and Addendums thereto are available at the City of Sacramento, Planning and Building Department, 1231 I Street, Room 300, Sacramento.

In 1998, per congressional mandate to establish a Special Flood Hazard Area (SFHA) addressing flood control systems that no longer provide 100-year protection, FEMA issued a final flood elevation determination letter and revised the FIRM for portions of the Sacramento area, replacing the A99 designation with a new flood zone entitled AR Flood Zone (AR zone). This AR zone was intended for communities, such as Sacramento, where a certified 100-year or greater flood protection system had been decertified due to updated hydrologic or other data. The AR zone allowed for development to continue, with some restrictions, while progress was being made toward restoring a 100-year flood protection level for such areas of the City and County. In 1998, the City of Sacramento certified Addendum III to the EIR for Land Use Planning Policy within the 100-year Floodplain, which evaluated the risks of allowing development to continue within the AR zone.

Subsequent to the AR zone redesignation, the Army Corps of Engineers lowered the estimates for 100-year flood flows on the American River. In addition, the Sacramento Area Flood Control Agency (SAFCA) continued to make progress on flood control projects along the American River. These two occurrences enabled the City to apply for and receive a flood map revision. On May 22, 2000, FEMA notified the City that the FIRM was being revised to redesignate areas previously listed as an AR zone back to the A99 zone. FEMA's action removes the 3-foot elevation and floodproofing requirement for new buildings but does not eliminate the mandatory flood insurance requirement. On July 25, 2000, the City Council adopted these updates relating to the City's flood zone status and the Morrison Creek Floodplain policies (Resolution # 2000-451).

## **REGULATORY BACKGROUND**

### ***National Pollutant Discharge Elimination System (NPDES)***

The City's discharge from the CSS is regulated by an NPDES permit issued by the RWQCB under the requirements of the Environmental Protection Agency (EPA) and Section 402 of the Clean Water Act. This permit requires the City to comply with applicable water quality and performance standards.

### ***California General Industrial Storm Water Permit***

Companies involved in a variety of industrial activities must be covered under a general industrial storm water permit. These activities include any manufacturing operations, transportation facilities where vehicles are maintained (maintenance includes fueling and washing), landfills, hazardous waste sites, and other similar operations. The general permit requires that each facility notify the State, prepare and implement a Storm Water Pollution Prevention Plan, and monitor to determine the amount of pollutants leaving the site.

The general permit requires industrial dischargers to (1) eliminate illicit discharges of storm water to storm water systems, (2) develop and implement a storm water pollution prevention plan (SWPPP), and (3) perform monitoring of discharges to storm water systems. The SWPPP should include (1) source identification, (2) practices to reduce pollutants, (3) an assessment of potential pollution sources, (4) a materials inventory, (5) a preventive maintenance program, (6) spill prevention and response procedures, (7) general storm water management practices, (8) employee training, (9) facility inspection, (10) recording keeping, and 11) elimination of unpermitted non-storm water discharges to the industrial storm water system.

### ***California General Construction Activity Storm Water Permit***

Construction activities that involve more than five acres of land disturbance must comply with a general SRWQCB permit that regulates storm water leaving the site. Construction on sites of less than five acres that are part of a larger project that covers more than five acres also must comply. However, construction activities that essentially maintain existing facilities, and do not involve a change in grade, are not required to be covered under the general permit. The general permit requires the site owner to notify the State, to prepare and implement a Storm Water Pollution Prevention Plan, and to monitor the effectiveness of the plan. The plan does not have to be submitted to the Regional Board, but must be on site and available to inspectors.

Permit applications are required to prepare, and retain at the construction site, a SWPPP which includes a description of (1) the site, (2) erosion and sediment controls, (3) means of waste disposal, (4) implementation of approved local plans, (5) control of post-construction sediment and erosion control measures and maintenance responsibilities, and (6) non-storm water management controls. Dischargers are also required to inspect their construction sites before and after storms to identify storm water discharge associated with construction activity and to identify and implement controls where necessary.

The City conditions all construction activities that will disturb five acres or more of land. A project proponent must file a Notice of Intent for coverage and comply with requirements contained in the State General Construction Activity Storm Water Permit. All erosion, sediment and pollution control measures to be implemented must be approved by the City's Department of Utilities prior to the commencement of construction activities. In addition, staging of heavy equipment must be established so that spills of oil, grease or other petroleum by-products do not discharge into the drainage system. All machinery must be properly maintained and cleaned to prevent spills.

### ***Sacramento Regional County Sanitation District***

The Sacramento Regional County Sanitation District (SRCSD) is responsible for providing wastewater service to the majority of Sacramento County, including the cities of Sacramento and

Folsom. The SRCSD maintains and operates its own wastewater collection and conveyance system, as well as the SRWTP. Construction discharges into the CSS, such as dewatering activities, require a wastewater discharge permit from the SRCSD. The City and the County have set this permit to ensure no significant impacts occur from dewatering activities. As part of the permit, SRCSD sets standards for discharge limitations, and requires monitoring activities to be performed by the permittee, the submittal of monitoring reports to SRCSD, and payment of associated discharge fees.

### ***Drainage Requirements***

The City has drainage requirements applicable to the project Area. Within the area served by Sumps 31 and 113, the City requires that finished floor elevations of buildings within the service area are constructed one and a half feet above the 100-year hydraulic grade line (HGL) shown in the City's Drainage Master Plan. Within the area served by the CSS, the City requires that projects provide adequate infrastructure to mitigate any increased storm drainage and sanitary sewer flows from the site at the time of the Cease and Desist Order.

The Project Area is a built, urban environment. The City has performance standards for drainage improvements applicable to "retrofit" situations such as redevelopment of the Project Area. Rather than setting nominal discharge requirements for pipelines, the City requires that pipelines and other drainage facilities be sized such that: (1) the 10-year flood depth shall not exceed the top of street curbs; and (2) the 100-year flood depth shall not exceed the entry level of structures, excluding garages and sheds.

The City requires applicants to prepare a drainage study for their project to the satisfaction of the City Department of Utilities as a condition of entitlements. This study is normally done after a project has received the conditions of entitlements, and prior to the issuance of a building permit. A result of the drainage study may be that the applicant is required to mitigate the impacts on- and off-site. Mitigation may include, but not be limited to, construction of new drainage facilities on- or off-site, enlarging the existing facilities, and providing on-site detention of storm water.

### ***City of Sacramento Construction Standards***

The City requires new development projects to be in conformance with the Administrative and Technical Procedures for Grading and Erosion and Sediment Control Manual. This manual provides standards and guidance for the design and preparation of erosion, sediment, and pollutant control plans, as well as best management practices for construction activities in accordance with the City of Sacramento Grading, Erosion, and Sediment Control Ordinance (Ordinance No. 93-068). Developers are required to carry out dust and soil erosion and sediment control measures before, during, and after the construction phase of development. This general permit requires the permittee to employ "Best Management Practices" (BMPs) before, during, and after construction. The City has a list of BMPs necessary to accomplish the goals of this permit, approved by the City's Department of Utilities, Engineering Services Division before beginning construction.

### ***City of Sacramento Dewatering Requirements***

The City requires new projects that will require construction dewatering activities to participate in a "Memorandum of Understanding" with the City to ensure that wastewater discharged to the CSS will not be contaminated, leaks in the system will not occur, and that the City can shut off discharges

into the CSS during periods of high CSS flows. No permanent dewatering for foundations or basements is allowed to discharge to the City's CSS or drainage system. The CSS does not have adequate capacity to allow for dewatering discharges for foundations or basements. All basements and subgrade structures must be designed to be waterproofed and withstand the groundwater uplift without the need to dewater (Brent, 2000).

### ***City of Sacramento General Plan***

The Sacramento General Plan has established a goal to protect against flood-related hazards whenever feasible. The General Plan also prohibits development of areas subject to unreasonable risk of flooding unless measures can be implemented to eliminate or reduce the risk of flooding. The Sacramento General Plan Update has just one goal and one policy for flood hazards:

Goal A: Protect against flood related hazards wherever feasible.

Policy 1: Prohibit development of areas subject to unreasonable risk of flooding unless measures can be implemented to eliminate or reduce the risk of flooding.

## **4.8.2 PROPOSED REDEVELOPMENT ACTIVITIES**

The proposed Redevelopment Plan would provide tax increment financing to fund capital improvements, housing, economic development incentives, and financial incentives for rehabilitation and redevelopment. The potential sewer and drainage improvement projects could include, but are not limited to, monitoring systems, sewer parallels, drainage lines, sewer lines, sump improvements, detention basins, wastewater treatment facilities, flooding systems, flood control dikes, and sewer systems.

Numerous infrastructure projects, consistent with those identified above, were approved as a part of, or as mitigation for the 65th Street Transit Village Project. These projects were identified and assessed in the Transit Village EIR and outlined in the 65th Street Transit Village Infrastructure Needs Assessment, as well as the City's 2003-2006 Capital Improvement Program. The Redevelopment Plan may assist these projects, as approved by the City after site specific environmental review. Proposed stormwater and wastewater projects include, but are not limited to those identified in the City's Capital Improvement Program and the Infrastructure Needs Assessment, as follows:

- A. Combined Sewer Improvements
  - 1. James C. McClatchy Park off-line storage system
  - 2. Pipeline replacement
  - 3. Sewer maintenance holes
- B. Storm Drainage Improvements
  - 1. Storm drainage system along Folsom Boulevard west of 65<sup>th</sup> Street
  - 2. Sump 31 expansion
  - 3. New drainage lines and maintenance holes
  - 4. Pump station at Folsom Boulevard / 65<sup>th</sup> Street
  - 5. Upsize existing pipeline in Elvas Avenue to 42" pipe

- C. Water Distribution System Improvements
  - 1. 6", 8" and 12" watermains and gates, Folsom Boulevard (65<sup>th</sup> to 69<sup>th</sup>)
  - 2. Fire hydrants

### **4.8.3 ENVIRONMENTAL IMPACTS**

#### **METHODOLOGY**

In order to estimate the Redevelopment Plan's effect on the City's Combined Sewer Service System and area drainage facilities, the City of Sacramento Department of Utilities was consulted to determine if redevelopment activities would substantially worsen existing CSS conditions or adversely affect the Sacramento Regional Wastewater Treatment Plant or existing stormwater and sanitary sewer facilities. Since the Redevelopment Plan does not propose to intensify land uses beyond those planned for in the City's General Plan, as amended, a quantitative analysis of stormwater or sanitary sewer flows in the context of this programmatic EIR was not warranted.

#### **THRESHOLDS OF SIGNIFICANCE**

Criteria from the CEQA Guidelines are used to determine the significance of stormwater, wastewater and flood control impacts. The project will normally have a significant effect on the environment if it will:

1. Violate any water quality standards or waste discharge requirements.
2. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site, or exceed the capacity of existing or planned stormwater drainage systems.
3. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or expose people or structures to a significant risk of loss, injury or death involving flooding.

In addition to the above criteria, effects on the City's drainage system and Combined Sewer System would be considered significant if they exceeded the following screening criteria provided by the City of Sacramento Department of Utilities (Brent, 2000):

1. If a proposed project or project alternatives would increase the impervious surface area by greater than 0.25 acre; or,
2. If the proposed project or project alternatives would increase the equivalent single family dwelling unit (ESD) sanitary sewer flows by greater than 40 ESDs (1 ESD is equal to 400 gallons per day).

## **IMPACTS OF THE PROPOSED PROJECT**

### **Impact 4.8-1 Potential impact on downstream water quality**

Redevelopment activities and development encouraged by redevelopment would include the construction of roadways and structures which would involve grading, excavation or other construction-related activities which could cause soil erosion at an accelerated rate during storm events. Sediment from erosion can have long and short-term effects on water quality in affected streams including increased municipal/industrial water treatment costs for turbidity removal, adverse impacts on fish and wildlife habitat, impaired recreation and aesthetic values, reduced water pump life due to abrasion, and increased flooding hazard due to reduced channel capacity. Other potential sources for water quality degradation during construction activities is the use of heavy machinery and other construction equipment which can increase the amounts of heavy metals, oil, grease, and other petroleum hydrocarbons in receiving waters.

Construction activities which disturb more than five acres of land are required to obtain, and comply with the State General Construction Activity Storm Water Permit. As described above, compliance with the Permit would require the implementation of BMPs. Furthermore, all grading activities would also be required to follow the City Grading Permit requirements. Because activities resulting from redevelopment plan implementation would be developed and operated in compliance with municipal NPDES regulations, the impact to receiving waters is considered to **be less-than-significant**.

#### ***Mitigation Measures***

None required.

### **Impact 4.8-2 Exposure to flood hazard areas**

Redevelopment activities would remove barriers to development and could support the construction of habitable structures within an A99 flood hazard zone, thus exposing people and/or property to the risk of injury and damage in the event of a 100-year, or greater, flood. These risks are considered significant adverse impacts under CEQA. The proposed Redevelopment Plan falls within the scope of the Program EIR and the findings adopted for the City's Flood Zone Land Use Policy and will not result in any development or impacts over and above those previously analyzed in the EIR and subsequent addendums, thus the incremental impact of the Amendment is considered **less than significant**.

#### ***Mitigation Measures***

None required.

### **Impact 4.8-3 Substantial increases to Combined Sewer System flows**

The Redevelopment Plan would remove barriers to General Plan buildout in the Project Area, which could result in CSS flows that exceed the City's screening criteria for project-generated

wastewater flows. Development would occur in the Project Area on a project by project basis over the life of the Redevelopment Plan, increasing the percentage of impermeable surface area over time. According to the CSS Improvement Project, there is adequate capacity in the CSS system to accommodate small increases in stormwater runoff and sewage flows, but individual development projects that would generate greater than 40 ESDs (16,000 gpd) of stormwater/sewage, and/or would increase impervious areas by greater than one quarter (1/4) acre, would require mitigation to avoid exceedances of system capacity.

Cumulative development in the Project Area could potentially include projects that would generate greater than 40 ESDs of stormwater/sewage, thus the capacity of the CSS system could be exceeded during high intensity storm events.

If a project exceeds either of the two screening factors described above, any developer/engineer (D/E) for a site specific project in the CSS area would be required to provide the City with additional information needed to determine the level of impact upon the CSS that is due to the project's additional storm drainage and sanitary flows. The City may verify the D/E's determination using the Sacramento Storm Water Management Model (SSWMM91) and/or other methods. Based upon extensive sensitivity analyses of the CSS, impacts will be considered significant if any of the following conditions exists:

- Flood volumes: An increase  $\geq$  5% out of the sewer system.
- Flooding Depth: Water surface elevations (HGL) exceed an elevation greater than 0.5 feet below drainage inlets.
- Flood Duration: Any significant increase of time when flooding occurs in the streets.

The City requires that existing and proposed storm drainage and sewer flow calculations for each project be submitted to the Department of Utilities to determine whether a project may exceed City screening criteria. If the Department determines that a project's impacts are significant, the project proponent will be required to work with Department staff to develop a method of mitigating these impacts. A mitigation plan could include such measures as on-site storage and/or detention of site-generated storm water flows, CSS pipe up-sizing, and replacement of pipes.

The Redevelopment Plan could provide infrastructure improvements to enhance the CSS distribution system, but would not necessarily specifically address CSS capacity issues. However, it is anticipated that development permitted under the General Plan and encouraged by redevelopment activities could result in a **significant impact** on the capacity of the CSS.

**Mitigation Measures**

**4.8-3** If mitigation of system-wide impacts to less-than-significant levels cannot be accomplished by the mitigation plan for an Agency engendered project, the project sponsor shall enter into a Mitigation Agreement with the City, which shall be approved by the City of Sacramento Department of Utilities prior to the issuance of building permits. Such an agreement would include, but is not limited to the following:

1. Agreement to pay any and all associated CSS impact fees based on a development's fair share of cost to implement the CSS improvement projects.
2. Waiver of all rights to protest future fees, assessment districts, Mello Roos districts, etc.

3. Consent to all conditions by any lien holder.

### ***Significance after Mitigation***

Less than significant.

### **Impact 4.8-4: Exceed Sacramento Regional County Sanitation District capacity**

The Redevelopment Plan does not propose to intensify land uses beyond those planned for in the City General Plan, as amended. As noted in the Setting section above, an expansion is planned for the SRWTP which is intended to serve the anticipated buildout of the service area through 2020. This would be a ***less than significant*** impact.

### ***Mitigation Measures***

None required.

## **4.8.4 REFERENCES – STORMWATER, WASTEWATER AND FLOOD CONTROL**

- *Land Use Planning Policy Within the 100 Year Flood Plain in the City and County of Sacramento Draft and Final EIRs*, City of Sacramento, January 1990.
- *65<sup>th</sup> Street Transit Village Project Draft Environmental Impact Report*, City of Sacramento, December 2001.
- *Approved Capital Improvement Program*, City of Sacramento, 2003-2008.
- *Draft and Final Environmental Impact Report, City of Sacramento General Plan Update*, City of Sacramento, Draft EIR is dated March 2, 1987 and Final EIR is dated September 30, 1987.
- *Draft Final Report for the 65<sup>th</sup> Street/University Transit Village Infrastructure Needs Assessment*, City of Sacramento, October 13, 2003.
- *Kimland Yee*, City of Sacramento Utilities Department, personal communication, February 6, 2004.
- *South 65<sup>th</sup> Street Area Plan, Initial Study, November 2003*

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### End Notes

- i Damagalski, Joseph and Brown, Larry R. 1996. National Water Quality Assessment Program: The Sacramento River Basin. United States Geological Survey, NAWQA Fact Sheet. <http://water.wr.usgs.gov/sacval.html>.
- ii *Sacramento Regional County Sanitation District Home Page*. [www.srscsd.com](http://www.srscsd.com).
- iii *The Sacramento City General Plan Draft EIR*. Sacramento Planning and Building Department. 1988. pg. W-3.
- iv *Sacramento City General Plan Draft EIR*. 1986, pg. W-3.
- v Sacramento General Plan Draft EIR, pg. W-9.
- vi *Sacramento and San Joaquin Delta Atlas*. <http://www.dwr.water.ca.gov>. Department of Water Resources. 1995.