

## **Section 9**

### **Increased Demand for Storm Drainage**

This section describes how development associated with the *City of Modesto Urban Area General Plan* (UAGP) would affect demand for storm drainage.

#### **A. ENVIRONMENTAL SETTING**

The following information is provided in accordance with Section 15125 of the California Environmental Quality Act (CEQA) Guidelines. This environmental setting is the baseline for determining whether an impact of the UAGP is significant.

##### **1. Study Area for Direct Impacts**

The study area for direct impacts related to storm drainage is the UAGP planning area.

##### **2. Study Area for Cumulative Impacts**

This analysis will be based on the plan or projection approach to examining cumulative effects, as provided under Section 15130(b)(1)(B) of the State CEQA Guidelines. Pertinent plans and projections to be used for this purpose are the UAGP and City's draft *Storm Drainage Master Plan* (2008). The study area for cumulative impacts on demand for storm drainage includes the City's UAGP planning area, along with receiving waters (Tuolumne River and Dry Creek) and MID laterals / drains in the County.

##### **3. Existing Physical Conditions in the Study Area**

###### **a. Overview**

Storm water drainage systems are designed primarily to convey runoff that occurs during storm events. Impervious surfaces collect and concentrate stormwater discharges to various drainage systems. To a lesser extent, the drainage systems also help to dispose of excess water generated from urban uses such as street sweeping, residential watering, and other activities that generate runoff during drier months of the year. The proper control of stormwater runoff is important to reduce adverse effects from increased flooding, erosion, and transport of pollutants. The City is currently requiring developers to implement the concepts of Low Impact Development (LID) for all new development and redevelopment projects, as established in the City's *Guidance Manual for New Development Stormwater Quality Control Measures* (adopted 2011, revised February 2015). LID uses a variety of mechanisms to retain as much stormwater runoff on each individual site as possible. Runoff is infiltrated through the use of swales, vegetation, pervious pavement, French drains, rockwells, and other methods.

The City's storm drainage system includes approximately 77 miles of storm drain lines and 25 storm pump stations. Stormwater discharges from the City drain to 24 drainage basins and approximately 12 major outfalls (greater than 24 inches in diameter) to receiving waters (Tuolumne River or Dry Creek), Modesto Irrigation District (MID) laterals/drains, or rockwells. According to the City's *Storm Drainage Master Plan* (2008), surface water discharges generally occur in the older parts of Modesto or those areas immediately adjacent to the Tuolumne River, Dry Creek, or irrigation canals. Approximately 40 percent of stormwater gets discharged to detention/retention basins, 20 percent of stormwater gets directed to receiving waters, 10 percent is directed to MID laterals/drains, and 30 percent goes to rockwells.

Rockwells are designed to collect surface stormwater runoff and allow it to infiltrate to the groundwater. Rockwells are rock-lined holes that are typically 6 feet in diameter and up to 50 feet deep. There are approximately 10,500 rockwells in Modesto. The rockwells are generally unable to accommodate the amount of drainage generated in the existing developed areas. In addition, the cost of maintenance for rockwells is high and the U.S. Environmental Protection Agency (EPA) regulations for rockwells are becoming more stringent. Consequently, the City is generally requiring gravity stormwater systems to be installed in the existing urban areas. The City of Modesto's *Guidance Manual for Development Stormwater Quality Control Measures* includes guidance for how development projects can implement infiltration wells for the purpose of stormwater runoff treatment and retention. These areas must be served by positive gravity stormwater drainage systems.

Many of the City's storm drainage pipelines are interconnected with sanitary sewer lines. After storm events, these cross-connections typically increase substantially with peak flows. As part of the City's *Wastewater Master Plan*, the City plans to decrease these peak flows in the sanitary sewer system by disconnecting up to 60 of these interconnections. Some improvements may include installing new storm drainage pipes, detention basins, and various underground storage and percolation methods.

The City monitoring and reporting program for the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4) permit is issued pursuant to Water Code Section 13267. To comply with the City's MS4 permit (NPDES No. CAS083526, Order No. R5-2015-0025) and monitoring and reporting program, the City is responsible for assessing the point-source runoff from Modesto. The City's drainage facilities are unique since only one-third of the City drains into surface water while the remaining drainages goes to rock wells. The MS4 permit and monitoring and reporting program apply to both water quality and drainage for the City. As part of the Monitoring Program, the City is required to collect water quality data from representative outfalls and estimates of annual pollutant loads of cumulative discharges to waters of the U.S. from identified municipal outfalls. Besides including a comprehensive assessment of water quality data, the Comprehensive Monitoring Report also identifies Best Management Practices (BMPs) contained in the drainage facilities that help reduce pollutant loading.

The City has been required to do a Peak Discharge Impact Study (PDIS) by the MS4 Permit. The purpose of the PDIS is to determine the extent of erosion of the natural streams from the City stormwater runoff. The City has developed a work plan to conduct a PDIS to determine the extent of erosion of natural stream channels and banks caused by urban runoff on both the Dry Creek and Tuolumne Rivers. In previous studies, the City has determined erosion was minimal based on aerial photos of Dry Creek. This work plan also evaluates peak flow

control and determines numeric criteria to prevent or minimize erosion of natural stream channels and banks caused by urban runoff (City of Modesto 2016).

Section V-10, *Flooding and Water Quality*, provides a discussion of EPA policies and the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) administration of the NPDES permitting program which governs the City's pollution control and management programs for stormwater discharges throughout the urban area. Section V-10 also describes the EPA's Underground Injection Control (UIC) program, which governs stormwater quality management policies for the numerous rockwells located throughout the City of Modesto. In 2012, the City prepared a *Rock Well Assessment Plan*, which was designed to evaluate the effectiveness of the rockwells in removing pollutants and protecting groundwater quality.

Plans and specifications for new stormwater facilities within Modesto are reviewed and approved by the City's Community and Economic Development Department. Development of storm drainage facilities are required to be installed in compliance with BMPs outlined in the City's Comprehensive Stormwater Management Program (CSMP), *Guidance Manual for New Development Stormwater Quality Control Measures* (City of Modesto 2011, revised February 2015) and as outlined in the City's *Design Standards for Dual Use Flood Control/Recreation Facilities*, adopted December 12, 2000.

## **b. Physical Conditions**

The Tuolumne River and Dry Creek receive a large fraction of stormwater runoff from the Modesto urban area. Storm water is also drained to Modesto Irrigation District (MID) canals located north of the Tuolumne River. Stormwater drainage south of the Tuolumne River is discharged to outfalls along the Tuolumne River; Turlock Irrigation District (TID) facilities located in the Ceres area are not currently used for storm drainage. The MID and TID facilities generally convey drainage west to downstream locations along the Tuolumne River and the San Joaquin River.

There is a finite existing capacity for MID canals to convey storm drainage because the canal systems were designed primarily to convey irrigation water. Consequently, canal capacities for flow conveyance are larger near the eastern edge of the county, where the irrigation water originates and is reduced near the western edge where the terminal agricultural water users are located. Therefore, the suitability of the canal systems for stormwater conveyance contrasts with the needs of urban area stormwater systems that generate more flow in the downstream direction as more and more stormwater discharges are contributed to the channels.

During the winter rainfall season, capacity in some parts of the MID canal system can be limited for acceptance of storm drainage (Ketscher pers. comm.; Gilton pers. comm.). The City generally regulates its discharges to the MID facilities by controlling the pumping systems at detention/retention-pond discharge locations. The City of Modesto controls the amount of urban storm drainage entering the channels by operating pump stations that discharge flow from the surrounding landscape into the channels. MID staff will request curtailment of pumping by the City before the canals reach their capacity. MID now requires high water level monitoring and shut off sensors to be installed in City storm water discharge pump stations that discharge to MID canals to help avoid exceeding the capacity of canals.

The City is preparing a *Storm Drainage Master Plan*, which is scheduled to be completed in 2020, to describe the schematic layout of future storm drainage systems in all of the Planned Urbanizing Area. MID and TID both require that the City and any other parties who wish to use their facilities for disposal of excess storm drainage to enter into drainage agreements for the use of their canal facilities. The drainage agreements serve to account for the projected drainage contributions and ensure that design and installation of the needed facilities are coordinated among the responsible parties.

#### **4. Existing Policies Applying to the Study Area**

Following is a comprehensive list of major federal, state, and local policies or summaries of policies in effect that apply to the study area. This list provides the full range of applicable policies that a project within the study area would potentially need to comply with, including policies beyond the jurisdiction of the City. This list of laws, regulations, and programs also serves to describe the circumstances under which the Master Environmental Impact Report (Master EIR) analyzed this environmental topic.

A discrete reference number, following the initials of the resource topic, is assigned to each policy or policy summary listed to facilitate its identification elsewhere in this Master EIR or, where appropriate, its incorporation as a mitigation measure into subsequent projects analyzed under this Master EIR (e.g., Storm Drainage policies are designated as SD-*X*, where *X* is the discrete number).

##### **a. Federal Regulations**

Federal regulations governing drainage systems are related to water quality and are discussed in Section V-10, *Flooding and Water Quality*. These include the federal Clean Water Act (CWA) and the EPA's Underground Injection Control (UIC) program.

##### **b. State Policies**

As noted in Section V-10, *Flooding and Water Quality* the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) administers the NPDES permitting program within the Central Valley Region. As part of this role, the Central Valley RWQCB issued the City's municipal stormwater permit—or MS4 permit—on May 5, 2015, regulating the discharges of stormwater from the City's municipal storm drain system. This permit includes requirements for the City to implement a Planning and Land Development Program, under which development projects (both public and private) that meet specified size thresholds must include permanent stormwater treatment facilities that are hydraulically sized in accordance with numeric sizing criteria included in the permit. The City's MS4 permit also requires the City to implement a Construction Program, under which the City must require BMPs to control sediment and pollutants from construction sites (both public and private) as specified in the permit.

Construction activities that disturb one acre or more of land are also regulated under the statewide Construction General Permit, NPDES No. CAS000002, Order No. 2009-0009-DWQ, issued by the State Water Resources Control Board (SWRCB) on September 2, 2009,

as amended. This permit requires construction projects that disturb one acre or more of land to implement stormwater pollution prevention plan (SWPPP) requirements for the control of pollutants and pollutant sources associated with construction activity.

**c. Stanislaus County Policies**

**SD-1:** The Stanislaus County Department of Public Works reviews and approves drainage plans involving County roadways that may pass through the Modesto urban area. The *Storm Drainage Master Plan* for Stanislaus County addresses storm drainage issues within the county.

**d. City of Modesto Policies**

The UAGP provides the following policies related to storm drainage.

- SD-2:** Prepare and adopt a Storm Drainage Master Plan to cover the entire City Sphere of Influence. (UAGP Policy VI.F.1)
- SD-3:** Require stormwater drainage infrastructure master plans for the public infrastructure or when otherwise pertinent to provision of service at adopted service levels for projects depending on site issues and location-specific concerns. (UAGP Policy VI.F.2)
- SD-4:** New storm drainage infrastructure may be by means of gravity storm drainage systems, as approved by the City Engineer. Such new storm drainage facilities should consider the drainage facility requirements presented in Table V-9-1 of the Final Master Environmental Impact Report, the City's current NPDES permit and the Storm Drainage Master Plan. (UAGP Policy VI.F.3)
- SD-5:** As directed by the City Engineer, dual-use flood control / recreation facilities may be developed (dual-use facilities) as part of the storm drainage system. Dual-use facilities should be designed and constructed in accordance with the standards in the City of Modesto *Design Standards for Dual Use Flood Control / Recreation Facilities* manual. (UAGP Policy VI.F.4)
- SD-6:** Minimize impervious surfaces and generally maximize infiltration of rainwater in soils, to promote groundwater recharge, where appropriate. Strive to maximize permeable areas to allow more percolation of runoff into the ground through such means as bioretention areas, green strips, planter strips, decomposed granite, porous pavers, swales, and other water permeable surfaces. Require planter strips between the street and the sidewalk within the community, wherever practical and feasible. (UAGP Policy VI.F.5)
- SD-7:** Update the City's Standard Specifications to reflect the latest Low Impact Development strategies and encourage a reduction in storm water runoff by encouraging storm water infiltration where feasible. (UAGP Policy VI.F.6)
- SD-8:** Meet the requirements of acceptable urban storm runoff as established by the Central Valley Regional Water Quality Control Board Basin Plan for surface discharges, and the Environmental Protection Agency for underground injection. (UAGP Policy VI.G.1)
- SD-9:** Construct, operate, maintain, and replace storm water drainage facilities in a manner that will provide the best possible service to the public, as required by federal and state laws and regulations. In developing implementation plans, consideration shall be given

to rehabilitation of existing facilities, remediation of developed areas with inadequate levels of drainage service, and timely system expansion for future development. (UAGP Policy VI.G.2)

- SD-10:** Construction activities shall comply with the requirements of the City’s Stormwater Management Plan under its municipal NPDES stormwater permit, and the State Water Resources Control Board’s General Permit for Discharges of Storm Water Associated with Construction Activity. (UAGP Policy VI.G.3)
- SD-11:** For developments within a mapped 100-year floodplain, prepare studies that demonstrate how the development will comply with both the construction and post-construction programs under the City's municipal NPDES permit. No increased erosion or releases of other contaminants that would cause violations of the City's municipal NPDES permit should occur as a result of development. (UAGP Policy VI.G.4)
- SD-12:** Ensure that new development complies with the City of Modesto’s *Stormwater Management Program: Guidance Manual for New Development Stormwater Quality Control Measures*. (UAGP Policy VI.G.5)
- SD-13:** Require new development to implement an appropriate selection of permanent pollution control measures in accordance with the City’s implementation policies for the municipal NPDES stormwater permit. (UAGP Policy VI.G.6)
- SD-14:** Design development projects to preserve and, where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands and buffers. Minimize disturbance of natural water bodies or natural drainage systems that might result from development, including road construction. (UAGP Policy VI.G.7)
- SD-15:** Integrate Low Impact Development principles into proposed development projects’ design. Low Impact Development is a storm water management and land development strategy that promotes conservation and use of natural on-site features combined with engineered small-scale hydrologic devices. In designing development projects, minimize the amount of impervious surface in order to maximize on-site infiltration of stormwater runoff and minimize the potential for storm water runoff from the site. (UAGP Policy VI.G.8)

The following tables identify standards referenced in the UAGP that will apply to future development.

**Table V-9-1.** Requirements for Drainage Plans

(Note: This table does not use the standard nomenclature found elsewhere in this document in order to be consistent with the reference contained in the UAGP.)

a.	The plan shall be based on a drainage study prepared by a qualified engineer and shall be implemented in all construction projects where the drainage study indicates a need.
b.	The drainage study shall identify 100-year flood elevations before and after development, location and available capacity of any existing drainage systems, and the volume and rate of water flows created by the proposed project during a 100-year storm.
c.	The study shall also provide the location and capacity of retention/detention basins and/or drainage channels to accommodate the increment in water flows and siltation created by the project.
d.	The plan shall include water quality control measures to ensure that minimal contaminants get discharged to surface streams or percolated into the ground.
e.	The water quality control measures shall address both construction and operation periods.

f.	The plan shall be implemented as part of a proposed project prior to occupancy permit issuance and during the life of the project.
g.	Fluvial erosion related to construction is controlled by a construction erosion control program that shall be filed with the City Utilities Department and kept current throughout any site development phase.
h.	The erosion control program shall include BMPs as appropriate, given the specific circumstances of the site and/or project. The City shall consult Table V-9-2 in the Master EIR for examples of BMPs.
i.	Sediment control basins that capture and contain eroded sediments on project sites shall incorporate design criteria listed in Table V-9-3 in the Master EIR.
j.	A stormwater management program (SWMP) shall be prepared for the operation of all proposed land development projects and shall be utilized to obtain an NPDES permit and be incorporated into the Drainage Plan. The SWMP shall utilize measures selected from Table V-9-4 in the Master EIR.

**Table V-9-2.** Examples of Construction Site Best Management Practices

(Note: This table does not use the standard nomenclature in order to be consistent with the reference contained in the UAGP.)

a.	Implement effective erosion control measures, such as minimizing long, unbroken flow paths by placing transverse gravel bag lines or installing transverse straw wattle lines across flow paths.
b.	Make drainage swales broad and flat to reduce hydraulic efficiency.
c.	Control offsite drainage and route it around disturbed areas, including newly graded areas.
d.	Provide a system of berms along the tops of slopes, combined with properly designed swales or other conveyance measures, to prevent water from running uncontrolled down the slopes.
e.	Collect the water in these berms and take it down the slopes in a non-erosive manner.
f.	Provide energy dissipaters and erosion control pads at the bottom of downdrains.
g.	Implement effective sediment control measures, such as directing site drainage into a sediment control basin before releasing it from the site.
h.	Install permanent landscaping, as soon as practical, after the completion of grading.
i.	Maintain facilities, including stormwater best management practices, in operable condition at all times.
j.	Inspect facilities at the end of each work day to ensure they are ready for service.

**Table V-9-3.** Design Criteria for Sediment Control Basins

(Note: This table does not use the standard nomenclature in order to be consistent with the reference contained in the UAGP.)

a.	Provide 15 cubic yards of sediment storage per acre of tributary drainage area.
b.	Provide an erosion-proof spillway from the basin to a protected outlet.
c.	Do not provide a drain in the basin since this would allow some sediment to escape.
d.	If site conditions permit, build an oversize basin so it will not have to be cleaned out during the life of the grading project.
e.	Maintain and clean out basin as necessary.
f.	Inspect basin at end of each work day to assure it is in working order.

**Table V-9-4.** Measures That Can Be Incorporated into a SWMP

(Note: This table does not use the standard nomenclature in order to be consistent with the reference contained in the UAGP.)

a.	Educate the public regarding the problem of contaminants in urban runoff and solutions they can utilize to reduce the amount of contaminants in urban runoff.
b.	Design projects to direct runoff from impervious surfaces to areas of landscaping, where feasible.
c.	Promote efficient and safe housekeeping practices when handling fertilizers, pesticides, cleaning solutions, paint products, automotive products, and swimming pool chemicals. These substances should be utilized and stored according to labels and instructions, and shall not be disposed of in a manner that will allow them to contaminate storm flows.
d.	Minimize the use of and utilize the least harmful fertilizers, pesticides, cleaning solutions, automotive and paint products where alternatives exist.
e.	Hazardous materials shall be stored as follows: in the minimum amount necessary; in designated areas; utilizing secondary containment; and, shall be subject to regular inspections.
f.	Employees and contractors shall be trained in appropriate storage methods and procedures for spill cleanup.
g.	Discourage illegal dumping by identifying elements of the drainage system with a sign prohibiting dumping and indicating the reason for the sign.
h.	Coordinate with private industry to establish used oil disposal facilities for recycling of bulk used oil.
i.	Project operators shall ensure that vehicle maintenance occurs in appropriate facilities and that spills are reduced, contained, and cleaned up before they contaminate urban runoff.
j.	Discharge of pollutants to storm water from above ground storage tanks shall be minimized by installation of secondary containment, regular inspections, and training in spill cleanup techniques.
k.	Prevent unwarranted physical connections to the storm drain system from sanitary sewer, and floor drains through regulation, inspection, testing, and education.
l.	Identify and repair sewer blockages, infiltration, inflow, and wet weather overflows from sanitary sewers to the stormwater drain system.
m.	Reduce the discharges of pollutants from roadway and parking lot surfaces by conducting street cleaning on a regular basis.
n.	Maintain catch basins and stormwater inlets on a regular basis to remove pollutants and restore basin sediment trapping capacity.
o.	Regularly remove illegally dumped items and materials from storm drainage canals and creeks.
p.	Identify low impact development facilities, such as bioretention areas, as facilities to utilize in drainage systems where conditions permit.
q.	Wet ponds (i.e., permanent water pools used to treat incoming stormwater) or constructed wetlands shall be utilized where warranted and conditions permit.
r.	Vegetated channels and strips shall be incorporated into drainage plans.
s.	Media filtration should be utilized where sediment is a problem and there is no other adequate alternative sediment-control method available.
t.	Oil/water separators shall be installed and maintained in all facilities where automotive maintenance or industrial facilities result in oil release.
u.	Vehicle fueling and washing facilities, including steam cleaning, shall utilize concrete floors, protected from the rain and drained to a sump to assure contaminants are contained.
v.	Outdoor container storage of liquids and outdoor equipment shall include a dike to contain spills and storm water, and be covered to minimize storm water in the area.
w.	Outdoor storage shall be covered, have secondary equipment and be designed to prevent stormwater runoff.



## **5. Policies That Reduce or Avoid Impacts**

The following policies are in effect and have been determined to reduce, avoid, or mitigate environmental impacts within the existing city limits and within the Planned Urbanizing Area. County policies are included because they reduce or avoid cumulative impacts. The policy reference initials and numbers are listed below; the full text of these policies is found in Section A-4 above, *Existing Policies Applying to the Study Area*.

### **a. State Policies**

State policies avoiding impacts to water quality, including those relating to storm drainage, are summarized in Modesto policy FWQ-2 in Section V-10, *Flooding and Water Quality*, and further described above with respect to the City's MS4 permit.

### **b. Stanislaus County Policies**

County policies avoiding impacts related to storm drainage are summarized in Modesto policy SD-1.

### **c. City of Modesto Policies**

Modesto policies SD-2 through SD-15 would ensure the following: that there would be adequate storm drainage capacity; that MID would be consulted during preparation of additional drainage studies; that polluted surface discharges would be minimized; that new storm drainage infrastructure meet requirements of the City's municipal NPDES stormwater permit; and, that Low Impact Development principles would be incorporated into design for new development.

## **B. CONSIDERATION AND DISCUSSION OF SIGNIFICANT IMPACTS**

The following information is provided in accordance with State CEQA Guidelines Section 15126.2.

### **1. Thresholds of Significance**

Impacts relative to increased demand for storm drainage would be significant if the proposed Project would:

- a. result in a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site; or,
- b. create or contribute runoff water that would exceed the capacity of existing or planned storm drainage systems or provide substantial additional sources of polluted runoff.

## **2. Significant Direct Impacts**

### **Substantially Increase the Rate or Amount of Surface Runoff in a Manner that Would Result in Flooding Either On-Site or Off-Site**

The City has identified existing drainage inadequacies in the Baseline Developed Area and Downtown Area linked to the historic use of rockwells. In the Planned Urbanizing Area, new facilities are needed to serve anticipated urban development. Planned urban development in the Modesto planning area, and the associated increase in impervious areas created by pavement and structures, has the potential to increase the rate or amount of runoff in a manner that could result in flooding in the urban area.

The potential impacts on storm drainage that could occur from the project were qualitatively evaluated with respect to several factors, including the extent of the projected increase in urban surface area compared to undeveloped ground, the magnitude of projected changes to hydrologic and physical site characteristics of the study area compared to existing conditions, the regulatory criteria and guidelines, and professional judgment. Based on the above threshold of significance, the potential impacts of the UAGP related to surface runoff are considered less than significant because the UAGP includes policies that require the City to prepare and adopt a Storm Drainage Master Plan (SD-2), and which require new development in all three sections of the planning area to prepare stormwater drainage infrastructure master plans based on site issues and location-specific concerns (SD-3), as well as install approved drainage facilities (SD-4, SD-9).

New development is required under the UAGP to install storm drainage facilities that restrict the amount of post-development runoff from exceeding predevelopment conditions. In the Planned Urbanizing Area, this will include the installation of dual-use facilities that will provide recreational opportunities as well (SD-5). Development projects are required to minimize impervious surfaces and maximize infiltration of rainwater in soils (SD-6). Pursuant to the RWQCB's recent directive, the City's Standard Specifications will be updated to incorporate LID design elements (SD-7, SD-15) and require developers to implement LID treatments in accordance with the City's *Guidance Manual for Development Stormwater Quality Measures* (2011) (SD-12). By implementing these policies, the anticipated increase in the rate and amount of surface runoff due to new development would not create flooding on- or off-site, and this impact(s) would be less than significant.

### **Create or Contribute Runoff Water that Would Exceed the Capacity of Existing or Planned Storm Drainage Systems or Provide Substantial Additional Sources of Polluted Runoff**

According to the City's *Storm Drainage Master Plan* (2008), surface water discharges generally occur in the older parts of Modesto or those areas immediately adjacent to the Tuolumne River, Dry Creek, or irrigation canals. The City is required to conduct a PDIS to determine the extent of erosion of natural stream channels and banks caused by urban runoff on Dry Creek and the Tuolumne River, evaluate peak flow control, and determine numeric criteria to prevent or minimize erosion of natural stream channels and banks caused by urban runoff (City of Modesto 2016). Planned urban development in the Modesto planning area,

and the associated increase in runoff, have the potential to exceed the capacity of storm drainage systems or provide substantial additional sources of polluted runoff.

The potential impacts on storm drainage capacity and potential increases in pollutant discharge that could occur from the project were evaluated qualitatively with respect to several factors, including the extent of the projected increase in urban surface area compared to undeveloped ground, the magnitude of projected changes to hydrologic and physical site characteristics of the study area compared to existing conditions, the regulatory criteria and guidelines, and professional judgment. Based on the above threshold of significance, the potential impacts of the UAGP on storm drainage capacity and pollutant discharge are considered less than significant because the UAGP includes policies that require the City to prepare and adopt a Storm Drainage Master Plan (SD-2), and require new development in all three sections of the planning area to prepare stormwater drainage infrastructure master plans based on site issues and location-specific concerns (SD-3), install approved drainage facilities that comply with federal and state regulations, and have sufficient capacity to accommodate any increases in runoff (SD-4, SD-9).

Stormwater runoff quality must meet the RWQCB's standards for acceptable urban runoff (SD-8), and new development must comply with the City's *Guidance Manual for Development Stormwater Quality Measures* (2011) (SD-12). Policies SD-10, SD-11, and SD-13 require construction and new development to comply with pollutant discharge requirements of the City's NPDES stormwater permit including permanent pollution prevention measures that require appropriate selection of permanent stormwater treatment facilities based on the size of each new development. New development must also comply with EPA's Low Impact Development principles (SD-14, SD-15). As a result, the project is not expected to exceed the capacity of existing or planned storm drainage systems or provide substantial additional sources of polluted runoff. By requiring compliance with these UAGP policies, the City would ensure that potential impacts related to the stormwater runoff would be less than significant.

### **3. Significant Cumulative Impacts**

CEQA and the State CEQA Guidelines require the disclosure of the significant cumulative environmental effects, whether the project will make a cumulatively considerable contribution to any such effects, and, if so, mitigation measures intended to reduce the project's contribution (Section 15130 of the State CEQA Guidelines). A cumulative effect is one that results from past, present, and probable future projects. A project that has a less than significant direct effect on the environment may nonetheless make a considerable contribution to a cumulative effect.

A cumulative impact analysis first identifies whether there exists a cumulatively significant effect in the given resource area. If so, it determines whether the project would make a considerable contribution to that effect. Where a cumulative impact is severe, even a small contribution may be considerable. Where a project is required to implement or fund its fair-share of a mitigation measure designed to alleviate the cumulative impact, its contribution would be rendered less than considerable. (Section 15130(a) of the State CEQA Guidelines.)

The population of Stanislaus County is projected to increase at a rate similar to Modesto. The California Department of Finance (DOF) estimates that the county population, approximately 540,200 persons in 2016 (California Department of Finance 2016a), will reach approximately

681,703 persons by 2035 (California Department of Finance 2016b). This would result in additional urban development and associated increases in impervious areas and associated urban storm drainage. Cumulative hydrologic impacts of stormwater flows from Modesto urban areas and other areas of the county could occur due to the fixed capacity of MID and TID irrigation canals, which convey drainage west to the San Joaquin River.

**a. Cumulative Increase in the Rate or Amount of Surface Runoff in a Manner that Would Result in Flooding On Site or Off Site**

As described above, existing drainage inadequacies in the Baseline Developed Area and Downtown Area, planned urban development in the Modesto planning area, and the associated increase in impervious areas created by pavement and structures, have the potential to increase the rate or amount of runoff in a manner that could result in flooding in the urban area. Notably, if drainage channels in some areas prove insufficient to handle the increased drainage discharges during large storm events, existing stormwater runoff from urban and agricultural areas would increase, and discharge to drainage channels could be interrupted until water levels receded to a point that would allow the resumption of discharges to the channels. Ceasing discharges to drainage channels could cause inundation in and around the drainage conveyance pipeline systems, surface drainage channels, detention basins, and other urban areas. This would be a significant cumulative impact.

Stanislaus County would rely on its *Storm Drainage Master Plan* to address storm drainage issues in the county (SD-1). Likewise, the City would rely on compliance with various plans, standards, and requirements to ensure storm drainage capacity and effectiveness: an adopted Storm Drainage Master Plan (SD-2), site-specific stormwater drainage infrastructure master plans (SD-3), its *Design Standards for Dual Use Flood Control – Recreational Facilities* manual (SD-5), Standard Specifications relating to Low Impact Development (SD-7, SD-15), and Stormwater Management Program (SD-10, SD-12). With implementation of these policies, the UAGP would not make a considerable contribution to this cumulative impact, and this impact(s) would be less than significant.

**b. Cumulative Increase in Runoff Water that Would Exceed the Capacity of Existing or Planned Storm Drainage Systems or Provide Substantial Additional Sources of Polluted Runoff**

Anticipated development in Stanislaus County and the City would result in increased impervious surfaces, and the potential for an additional contribution of excess runoff or polluted runoff to the local storm drainage system, including rockwells and surface receiving water bodies (the Tuolumne River, Dry Creek, or irrigation canals). As described in Chapter V, *Flooding and Water Quality*, there are existing surface water and groundwater quality impairments in/downstream of the City's stormwater runoff receiving waters, which are also potentially affected by increased runoff from developing areas of the county. Contributions of polluted runoff or alterations to surface water flow patterns or quantities, such that the alterations resulted in erosion-related impacts, would be considered significant contributions to this existing cumulative water quality impact. The City's implementation of a PDIS would ensure that the City's urban runoff flows were managed to prevent or minimize any potential to affect erosion of natural stream channels and banks on Dry Creek and the Tuolumne River

(City of Modesto 2016). In addition, as described below, the County and City's plans and policies would ensure that planned urban development in the Modesto planning area and the associated increase in runoff, would not have the potential to exceed the capacity of storm drainage systems or provide substantial additional sources of polluted runoff.

Stanislaus County would rely on its *Storm Drainage Master Plan* to address storm drainage issues in the county (SD-1). The UAGP contains policies to establish requirements for new storm drainage infrastructure, including gravity-fed systems and dual-use flood control/recreation facilities (SD-4 and SD-5); minimize impervious surfaces and maximize stormwater infiltration (SD-6, SD-14); implement Low Impact Development measures (SD-7, SD-15); meet applicable urban runoff requirements (SD-8); and implement both construction-related and permanent pollution control measures (SD-10, SD-11, SD-12, SD-13, SD-14). With implementation of these policies, the UAGP would not make a considerable contribution to this cumulative impact, and this impact(s) would be less than significant.

### **C. POLICIES ADOPTED TO MINIMIZE SIGNIFICANT EFFECTS**

The following information is provided in accordance with State CEQA Guidelines 15126.4.

#### **1. Policies That Reduce Direct Impacts**

Proposed UAGP update policies SD-2 through SD-15 would reduce direct storm drainage impacts to a less than significant level through application of Low Impact Development techniques, pollution and erosion control measures, and compliance with the City's NPDES permit and other State / regional agency regulations.

#### **2. Policies That Reduce Cumulative Impacts**

Compliance with NPDES and RWQCB requirements, adopted policies of Stanislaus County, and proposed UAGP update policies SD-2 through SD-11 (especially SD-2, which requires that the City update and maintain its Storm Drainage Master Plan to cover the entire area within the City's Sphere of Influence) would reduce the project's contribution to cumulative storm drainage impacts to a less than significant level.

### **D. MONITORING POLICIES THAT REDUCE IMPACTS**

The following information is provided in accordance with PRC Section 211081.6. The policies identified in this Master EIR have been drawn from the proposed UAGP amendment, and they are implemented by that plan. City staff provides the City Council with an annual report on UAGP implementation; therefore, no separate mitigation monitoring program is required for the UAGP Master EIR.

#### **References:**

- City of Modesto. 2008. 2008 Storm Drainage Master Plan. Prepared by Stantec. March.*  
*City of Modesto. 2011. 2011 Guidance Manual for Development Stormwater Quality Control Measures. May. Prepared for NPDES Permit No. CAS083626; Order R5-2008-0092. Revised February 2015.*  
*City of Modesto. 2016. Municipal Stormwater Program Annual Progress Report 2015-2016.*

