

CHAPTER 9. REVISIONS

The Storm Drain Master Plan will guide the City's drainage planning and construction during the coming years. Revisions to the Master Plan will be issued to plan holders and should be inserted in this chapter for future reference.

Revisions

[illegible]

**South San Joaquin Irrigation District
City of Manteca
Storm Drainage Agreement**

This Agreement, entered into this 14th day of February 2006, at Manteca, California, by and between SOUTH SAN JOAQUIN IRRIGATION DISTRICT, ("DISTRICT") and the CITY OF MANTECA, a Municipal Corporation, ("CITY").

Whereas, District has constructed and operates certain drainage and irrigation facilities for irrigation purposes and disposal of excess irrigation flows from its irrigation water distribution system, and for the disposal of subsurface drainage flows from agricultural lands served by the District, and

Whereas, City has for many years used and desires to continue to utilize certain District's drainage and irrigation facilities to transport storm waters, surface run-off, street wash waters, drainage and subsurface drainage (collectively "storm water"), and

Whereas cooperation and coordination between agencies sharing District facilities for drainage and irrigation purposes is of mutual advantage, and

Whereas, District is agreeable to City's use of District's irrigation and drainage facilities to transport its storm water on the terms set forth in this Drainage Agreement, and

Whereas, the District's French Camp Outlet Canal (FCOC) and other facilities sought to be used by City, are subject to use by others and there being no system that measures or controls all of the other uses, the District cannot guarantee capacity at any particular time, and

Whereas, City acknowledges that District facilities have varying and limited capacity and that City will be required to control its discharges and to implement other measures specified by District and incorporated as part of the City's Storm Drainage Master Plan, that will limit discharge into District facilities.

NOW, THEREFORE, IT IS AGREED by and between CITY and DISTRICT as follows:

1. Term of Agreement

This Agreement shall be effective until January 1, 2026. This Agreement shall be automatically renewed for succeeding terms of 36 months each unless, at least 180 calendar days before expiration of any term, either party shall give notice to the other of its intention not to renew this Agreement. Nothing in this Agreement shall be interpreted as requiring either party to renew or extend this Agreement. Notwithstanding the termination of this

Agreement, Manteca shall continue to be responsible to perform all of its obligations in this Agreement.

2. Use of District Facilities

District agrees to make available to City the following described irrigation and drainage facilities to transport its storm water from land within the boundaries of District, to other waters of the State of California and of the United States: those portions of irrigation and drainage facilities described as Drains 3, 3A, 4, 5, 7, 8 and 8A; Laterals T, Tb, Tba, Tbb, Re, Rf, Y, Ya, Z and their branches; French Camp Outlet Canal (FCOC), and such other District conveyance facilities as are approved by District (collectively "District conveyance facilities") as shown on attached Exhibit A.

All City connections to District irrigation and drainage facilities, will be shown in an area map to be attached to this Agreement as Exhibit B. Any areas containing catch basins will be designated as having direct discharge. Exhibit B shall be updated annually to reflect current changes as they occur. City may not use District conveyance facilities to drain land outside of District's boundaries without written approval of the District

This Agreement shall also permit City to use District conveyance facilities to transport storm drainage from those various lands described in the specific storm drain agreements between City and District listed in Exhibit C (collectively, "Existing Drainage Agreements"). This Agreement shall supercede all provisions of the Existing Drainage Agreements except where those Agreements expressly provide otherwise and except for provisions requiring the payment of money to District which shall be an ongoing obligation of City.

3. No District Assumption of Responsibility for City Storm Drainage

In addition to the other limitations in this Agreement, District's authorization in Section 1 is limited to allowing City to use available capacity in the District conveyance facilities to transport its storm drain water to other waters of the State of California and of the United States, so long as such use does not interfere with District's use, the facilities are available to District for its own purposes and discharges are in compliance with all federal, state, regional, county or other water quality laws, regulations or administrative decisions, in effect now or at any time in the future ("Water Quality Rules"). District's authorization for City to use available capacity in District conveyance facilities in this Agreement shall be considered a lease of District conveyance facilities to City as authorized by California Water Code section 13270. District shall have no water quality obligations under Water Quality Rules for City drainage. City retains all responsibilities for all storm water it discharges to the District conveyance facilities and District at no time assumes any responsibility for City's storm water.

4. Other District Drainage Agreements

District conveyance facilities currently receive agricultural drainage as well as non-agricultural drainage from other users, including Sharpe Army Depot, San Joaquin County, the State of California, and Union Pacific as well as by some private lands. Some or all of such uses are not metered or controllable and can limit the capacity available to City in District's facilities. District cannot guaranty that drainage to District's conveyance facilities upstream of City will not increase over time and thereby decrease available capacity to City, provided, however, that at the time that District enters into new agreements or modifications of existing agreements with such other parties, it will obtain proposed drainage requirements for input to Manteca's computer model and use its best efforts to require the same control facilities as are required of Manteca in Section 10, including installation of SCADA facilities, in order to transmit capacity information to the City of Manteca.

5. District Priority; No Assurance of Capacity

District's use of the District conveyance facilities is primary and the right of City in this Agreement is secondary to District's use. City has not been granted any priority in the use of available capacity in District conveyance facilities over other users of District conveyance facilities. District does not make any assurances that the use by others of District conveyance facilities will not increase over time nor that any specific capacity will be available to City in the future.

6. Discharge Limited to Available Capacity

City shall not discharge storm water in excess of such capacity as may be available in District conveyance facilities at any point in time without causing canals to be overfilled or pipelines to be pressurized beyond safe limits. Storm water from each point of release to District facilities which would exceed available capacity in District's facilities will be held in retention basins or otherwise held by City until such time as capacity exists within District's facilities for safely receiving such discharge.

7. District approval of New Connections or Increased storm drainage

a. New Connections within District

- i) City shall condition its approval of any requests for new or increased storm drainage discharge into District conveyance facilities on District's written approval of improvement plans and specifications.
- ii) All new connections shall be designed such that storm water which would exceed available capacity in District's facilities will be held in retention basins or otherwise held by City by valve or other positive means of shutoff, until such time as capacity exists within

District's facilities for safely receiving such discharge, the requirements specified in the section entitled "Required Control Facilities" and such other requirements as District may reasonably require at the time of its review of the proposed new connections. All basins, pumps and other storm drainage facilities shall be operated under the control of City at all times when discharging to District conveyance facilities.

- iii) District is not required to approve new or increased storm drainage connections which otherwise satisfy District policies then in effect, if at any time it reasonably determines: (i) the improvement plans and specifications do not adequately regulate the quantity or quality of storm water discharge to District conveyance facilities as required by this Agreement, (ii) its existing facilities are in such a state of repair or have insufficient capacity without the modification of existing facilities or the construction of new facilities to transport drainage from the new connection, without adversely impacting the existing facility or existing uses of such facilities or (iii) that the new connection will adversely impact water quality in the District's conveyance facilities, and such concerns cannot be resolved by conditioning its approval on terms acceptable to the City and the affected landowner.

b. New Connections outside District

New connections for drainage of land outside the District's boundaries shall require the prior approval of District which may be refused in District's discretion. District's approval of such connections is subject to the provisions applicable to new connections in District's boundaries, and may be subject to such additional conditions as District may reasonably impose, including payment for District conveyance facilities, payment for maintenance and improvement of the facilities, and provisions to preserve and protect the priority of in-District uses and to protect water quality.

8. Construction Affecting District Facilities

a. Replacement of District Facilities

Any project approved by City containing District conveyance facilities is subject to District's policy requiring replacement of certain facilities as a condition of District approval.

b. Road Crossings

City is responsible for reviewing and issuing construction permits in road crossings and other projects affecting District conveyance facilities. City will

coordinate all public and private agency notifications for such construction projects, condition its approval on District's written approval of improvement plans and specifications and require no permit fees from District on District projects.

9. Delivery of Maps

City shall provide District at least annually with a map in AutoCad or other format compatible with District's computer mapping system of each discharge location, delineating each new discharge location, and include a data base for each location stating whether the location has an operating monitoring device, is connected to a detention basin, has telemetry controls installed and states the peak discharge capacity and such other relevant data as may be determined by the District.

10. Required Control Facilities

City shall install, operate and maintain adequate facilities to monitor capacity in District conveyance facilities and control drainage to District canals in order to prevent them from being overfilled or pressurized beyond safe limits and to preserve and protect the priority of in-District uses and to protect water quality, as follows:

- a. City shall install sufficient numbers of SCADA or other communication and control facilities to monitor capacity in District facilities, at locations reasonably acceptable to District, to ensure that discharges will not cause canals to be overfilled or pipelines pressurized beyond safe limits at any time.
- b. City shall install at every City pump connection point discharging to District conveyance facilities, a level-sensing control mechanism to prevent pumping when District conveyance facilities have insufficient capacity and a positive means of shut-off (tag out/lockout). The shut-off at each pump connection point shall be accessible to the District. District may suspend use of any part of the District system when necessary to maintain facilities, in the event of emergency, or for any of the other reasons set forth in this Agreement. City shall further install means to temporarily shut-off those inlets without a positive means of shut-off at District's request, when necessary to isolate drainage to a portion of District's system for such purposes
- c. City and District will work together to identify for priority installation of communication and control facilities, those portions of District conveyance facilities that are particularly subject to flooding during storm events. City will prioritize installation of shut-off facilities in those portions of District conveyance facilities that are less able to withstand pressure due to the type of construction or current condition.
- d. City shall install and maintain monitoring devices on existing drainage pumps which are not preceded with storm drain retention basins, designed to

record pump operating times and dates. District has the right to approve the design of the device. Hard copies of discharge information shall be furnished to the District upon request, but no less frequently than annually. City shall provide this information in electronic format upon District's request.

e. All control facility upgrades to connections required by this Agreement shall be completed within 5 years. Within 6 months after the date of this Agreement, the parties shall prepare a list of all connections to be upgraded in accordance with this Agreement. On the first anniversary date of this Agreement, City shall provide a schedule for completion of all required modifications to existing facilities within the remaining four years. Existing connections requiring control facility upgrades may not receive increases in flow rate or duration of flow until they are upgraded to incorporate the control facilities required by this Agreement.

f. City shall provide District at least annually with a report detailing its progress in upgrading its control facilities with the requirements of this Agreement. Notwithstanding the 5 year phase-in period, City shall be responsible for the consequences of its storm water discharges exceeding the available capacity in District conveyance facilities.

11. Water Quality

The quality of drainage water discharged by the City into District conveyance facilities shall meet all Water Quality Rules, whether such requirements are now in existence or become effective hereafter. City shall obtain and maintain in force at all times, any and all permits required under applicable law, including, but not limited to, National Pollution Discharge Elimination System ("NPDES") for Storm Water Program pursuant to the Clean Water Act. City shall take any and all actions required to fully comply with its NPDES permit and any other permits required under Water Quality Rules. City is required to implement a storm water pollution prevention plan or storm water management program using best management practices that effectively reduce or prevent the discharge of pollutants into District conveyance facilities and shall require positive means of preventing inflow at all locations necessary to prevent City drainage from entering District conveyance facilities. City shall provide District annually with the annual report or other description of best management practices in use for the NPDES permit for the Storm Water Program, any Hazmat incident reports and names and contact information for the first responders.

City shall be responsible for all costs to comply with Water Quality Rules as a result of City's use of the District conveyance facilities, whether for monitoring, permitting, remediation, fines, penalties or other cost of compliance ("Compliance Costs"). If District's Compliance Costs to comply with Water Quality Rules are increased due to its acceptance of City drainage, including any requirement that District monitor additional locations, monitor for constituents that would not otherwise be required of District, monitor on a more frequent basis, or to take any other actions to

comply with Water Quality rules, as a result of City drainage, City shall pay for such additional Compliance Costs. If City's or District's water quality permits under Water Quality Rules require monitoring at those locations where City storm drainage enters the District's conveyance facilities or should such monitoring be necessary to allocate the parties' respective responsibilities, City shall perform such required monitoring and assume responsibility for any Compliance Costs at such locations.

At any time during the term of this Agreement either party shall have the right to reopen and re-negotiate any provision of this Section 11 "Water Quality" in response to the change of circumstances including, but not limited to, new requirements imposed by Water Quality Rules, regulatory decision or judicial decision. A party may reopen negotiations by providing written notice of its intention, the basis for the claim of changed circumstances and the provisions to be discussed. Both parties shall meet within 30 days in a good faith effort to resolve the concerns. If the issues are not resolved within 90 days after the notice is given, resolution of the dispute shall be subject to the dispute resolution procedure in Section 16.

12. Maintenance, Repair or Replacement of Shared Facilities

a. District's Maintenance Responsibilities

District shall operate and pay for routine maintenance of District conveyance facilities, other than facilities used solely by City. Routine maintenance consists of regularly recurring and necessary tasks to preserve the function of District pipelines, ditches and access roads, including inspections, clearing trash, debris and other obstructions, plastering pipelines, patching canals and access roads and weed control. District's agreement to pay for routine maintenance is based on its continuing receipt of approximately 4.5% of the property tax revenues assessed by San Joaquin County on property within the common boundaries of District and City. At the same time, City and District acknowledge that local government funding mechanisms may change during the term of this Agreement. Therefore, the parties agree to renegotiate the District's 100% share of routine maintenance in the event that changes in the funding of local government would result in lesser amounts being paid to the District. If such circumstances occur, District may reopen negotiations by providing written notice of its intention to City. Both parties shall meet within 30 days in a good faith effort to reach agreement. If the issues are not resolved within 90 days after the notice is given, resolution of the dispute shall be subject to the dispute resolution procedure in Section 16.

b. City's Maintenance Responsibilities

City shall be responsible for:

- i) Operating and maintaining all City storm drain facilities, including the facilities described in the section entitled "Required Control Facilities. City shall also maintain City streets, storm drain inlets, and other areas within City to keep pollutants and excess plant

material from entering District facilities. City shall also be responsible for the cost to maintain any District pipeline that is used solely by City.

- ii) Ensuring that at no time City's discharges into District facilities exceed capacity available in District's facilities.
- iii) The preservation and maintenance of capacity in all existing detention basins and all future detention basins that are required by this Agreement. City shall maintain all pumps such that water is only discharged from a basin into a District conveyance facility when the District's system has capacity to safely receive such discharge.

c. Other Costs.

District and City shall share in all other costs of District facilities as follows:

- i) The cost to design, repair, replace or abandon any District conveyance facility, including road crossings, the use of which is shared by District and City and the repair or replacement of which is determined by District to be necessary due to its deteriorated condition, shall be shared on the following basis: District 2/3, City 1/3. City's share of the cost may be supplied in whole or in part by providing part of the labor in kind or by supplying materials. Notwithstanding the above, District shall have no responsibility for the cost to satisfy additional requirements imposed on District by City as part of the repair project or to repair or replace a District conveyance facility as part of a City project, or to restore a City road as part of the replacement of a District project to repair or replace a District conveyance facility, in a road crossing which is later in time to District facilities or to which no known record exists as provided in Water Code section 7035.
- ii) The cost to design, repair, replace or abandon a District conveyance facility used only by one party or the cost to repair or replace a facility because of damage caused by one party, shall be paid by that party. City shall pay for the repair of a District facility damaged solely by City discharging water in excess of the limits imposed by this Agreement.
- iii) City shall pay the entire cost to increase the capacity of any District facility solely necessary to accommodate City's storm drain flows.

- iv) City shall pay District's increased cost for District to comply with Water Quality Rules caused by City's use of the District conveyance facilities as described in Section 11.

d. Annual Budget

i) Budget Process

City's share of the cost to maintain, repair or replace District conveyance facilities shall be based on an annual budget. District shall submit an annual budget and proposed work description to City for its review no later than February 15 of each year. City shall have 30 days to review and approve the budget or to prepare written objections including the basis for its objections, to any part of the budget. Any part of the budget to which timely objections have not been delivered to District shall be deemed approved. District shall consider City's objections and submit a final budget to City within 30 days thereafter which shall be considered final between the parties. City shall be required to pay its share of completed work consistent with the budget within 60 days of District's request for payment, but no sooner than 60 days after City's adoption of its budget for the next fiscal year. District's request for payment shall include details as to the work completed, cost of work, reconciliation with the budget and such additional information as City shall reasonably request. District shall provide reasonable notice to City of any proposed increase in any part of the annual budget. The same time periods and approval process that apply to review and adoption of the annual budget shall apply to proposed increases in the annual budget. Any disputes over the budget shall be subject to the Dispute Resolution procedure in Section 16.

ii) Budget Format

The budget shall include the District's fully-loaded labor and equipment costs and the actual or estimated cost for work to be performed under contract. The cost of equipment used for maintenance or capital projects shall be based on fair rental value if District equipment, or actual rental cost in the case of rented equipment. District's cost for regulatory compliance and compliance monitoring, including cost to obtain and comply with NPDES permit if required of District at any time, shall be allocated among itself and as applicable, City and the other users of District's drainage system.

iii) Extraordinary Expenses

Any emergency or other non-budget expenditure to maintain or repair or replace a District conveyance facility may be paid by District

after such notice to City as is reasonable under the circumstances. In such event, City shall reimburse District for its share of such cost on such terms as are reasonable under the circumstances, or if the parties shall be unable to agree, District shall include City's share in the next annual budget.

iv) Other Budget Issues

The cost of any project which is to be bid shall be budgeted based on the estimated cost of the project. The cost of any project which will be paid for with the proceeds of any debt issued by District shall be budgeted based on the estimated debt service.

e. New Development

Nothing in this Section or in this Agreement is intended to limit the District's or City's approval of development projects on the installation of new or the repair, modification or replacement of existing District irrigation or drainage facilities.

13. Suspension of City Use for District Maintenance

During periods when District is performing construction or maintenance on, or repairs or replacement to, any District conveyance facility, City shall take appropriate action to prevent all storm drainage from entering each such facility when necessary for District to perform the work and shall not resume the use of affected District conveyance facility until such time as City has been advised by District that the work upon the District's conveyance facility is completed. If City experiences an emergency it may remove temporary plugs and re-connect disconnected power supplies, but shall not do so without providing District a minimum of one hour advance warning of its intent to discharge, or such longer time as is required by OSHA. Said advance warning shall be given to District by City making direct contact with the District Field Supervisor responsible for the routine or ordinary maintenance being performed when the City experienced the emergency. All costs to District resulting from interrupting and resuming work shall be born by the City. City may discharge when District has confirmed in writing that the facility is ready to accept discharges.

District shall schedule semi-annual maintenance planning meetings, to assure inspections and cleanup are complete and telephone contact information is current for both agencies, and annual Capital Improvement Program (CIP) meetings with the City. The District and the City shall develop a 5-year CIP plan for mutual use. City's failure to approve a 5-year plan may result in limitation on use of facilities or delay in new connections or expansion of existing connections to District conveyance facilities until such time as matter is resolved.

14. City's Improvement of District Facilities

City may improve District conveyance facilities by increasing the size of pipe or channel size, in order to carry out the purposes of this Agreement. However, as a condition to any such improvement project, District shall be provided an opportunity to review and approve in advance plans and specifications for any such improvements and verify that the proposed improvements will not be detrimental to District's use of conveyance facilities. As a further condition to the improvement project, District and City shall have entered into appropriate documentation for such construction prior to start of construction. The District shall be exempt from cost of constructing said improvements. City shall be responsible for the completion and costs therefore, but the actual work may be either rendered by the District or performed by the City and/or its contractors, to District's specifications. City shall be responsible for additional cost to maintain District facilities caused by the improvements. The increased capacity in the portion of the District conveyance facility financed by City shall be reserved for use by the City.

15. Transfer of Unused District Facilities

District shall offer to transfer to City and City shall have 60 days to elect whether to accept District's offer of all District conveyance facilities within a District easement, including manholes, pipelines, gates, boxes and other structures within the City which are not required by District to irrigate or drain land after the proposed point of transfer, but have at any time been used for City storm water. City shall accept District's offer to transfer facilities for which District has no further need and for which City has a continuing need. When conveyed to the City, City shall assume all responsibility for ownership of the facilities, including safety, cleaning, repair, construction, replacement, operation, maintenance, and removal or other disposition upon City's abandonment of the facilities. City may elect to abandon any District facility at any time after its acceptance of District's offer, but City shall retain responsibility for the abandoned facility. This requirement shall also apply to all road culverts and road crossings resulting from: (a) urbanization by City; (b) development within City; and (c) annexation by City. If City does not accept District's offer, District may abandon the facility. If District incurs costs to abandon the facility, City shall pay a share of the costs to abandon the facility in proportion to its former use of the facility, as reasonably determined by District.

16. Dispute Resolution

Any dispute expressly subject to resolution under this section, or any other dispute that a party elects to resolve under this section, shall be initiated by giving written notice to the other party of its intention to invoke the resolution dispute procedure in this section. The parties shall meet-and-confer within fifteen (15) days of the notice in good faith to attempt to resolve the dispute. If the parties are unable to resolve the dispute within 30 days from the date of the notice, the matter shall be referred to a third party mediator designated by the parties. The costs for mediation shall be divided equally by the parties. If the matter is not resolved through mediation, the matter shall be resolved

by arbitration if the parties so agree, and in the absence of such agreement, may be resolved by a court of competent jurisdiction. When a party gives notice of its intention to invoke the resolution dispute procedure for a dispute that is expressly subject to this section, City shall not approve any new or increased storm drainage connections to District conveyance facilities until the matter is resolved.

17. Notices and Contact Information

Any notices or other communications to be given shall be either delivered personally or deposited in the United States mail and addressed to the City Manager if to City and District's General Manager if to District, at each party's respective main office. Notice by mail shall be deemed given when deposited into the United States mail, postage prepaid, addressed to the parties as provided above. Nothing shall preclude the giving of personal notice or notice by facsimile machine provided, however, that notice by facsimile machine shall be followed by notice deposited into the United States mail as discussed above.

Each party designates the following persons to whom the other party shall deliver all documents or other information required to be furnished by this Agreement: for District, District Engineer and Head, Water Operations; and for City, City Engineer and Public Works Department Head. A party may change the designated person by providing written notice to the other party.

18. Default and Remedies

In the event the City is in breach of any aspect of this Agreement, after reasonable notice and opportunity to cure, City shall not approve any new or increased storm drainage connections to District conveyance facilities, and District may seek and obtain relief through appropriate court proceedings, including an injunction precluding all further use of District facilities. Notwithstanding City's default of this Agreement, City shall continue to be responsible to perform all of its obligations in this Agreement.

19. Indemnity

City agrees to indemnify, release and hold the District harmless from claims, demands, obligations, liabilities, lawsuits, administrative proceedings, or any other actions arising out of discharges within City's boundaries to District conveyance facilities, the condition of the District conveyance facilities, the permission granted to City in this Agreement or its performance, nonperformance or negligent performance of its obligations in this Agreement, including, but not limited to, damage to persons, damage to property including to private property or to District facilities or other public property, inverse condemnation, or negligent or non-compliance with the Clean Water Act, Porter Cologne Water Quality Control Act or any other Water Quality Rule, or court decision. Such indemnity shall include all fines and penalties and the reasonable costs and expenses, including court costs and reasonable attorneys' fees, of District and its

officers, directors, employees, agents and attorneys. The provisions of the paragraph will survive the termination of the Agreement.

20. Entire Agreement

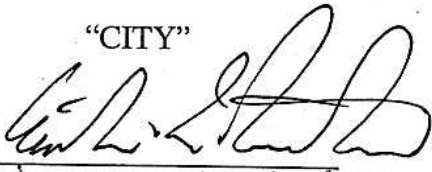
This Storm Drainage Agreement contains the entire understanding of the parties, and any additions to or revisions hereof shall not be effective unless made in writing and agreed to by both parties hereto.

IN WITNESS WHEREOF the parties hereto have set their hands the day and year above written.

CITY OF MANTECA
A Municipal Corporation

SOUTH SAN JOAQUIN
IRRIGATION DISTRICT

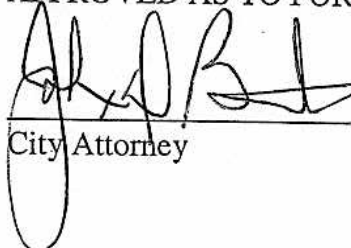
"CITY"


Willie W. Weatherford, Mayor

"DISTRICT"


Stevan M. Stroud, General Manager

APPROVED AS TO FORM:


City Attorney

2006 STORM DRAIN MASTER PLAN UPDATE

REVISION NO. 2

DRAIN 3 CULVERT (4/06)

Drain 3 from Lathrop Road to approximately 400 feet west of Airport Road has been modeled in the dynamic model and it is determined that a concrete culvert can be used in lieu of the open channel, as approved in the Union Ranch Unit 1 (Union Ranch SSJID Facilities 3-3A-Rf) Plans on 1-13-2006.

Drain 3A from Lathrop Road to the tie in with Drain 3 has also been modeled and it is determined that 2-48" pipes will be sufficient to carry the flow without an open channel.

2006 STORM DRAIN MASTER PLAN UPDATE
REVISION NO. 3
TESORO SIDE LINE (4/06)

The SSJID Side Line Project on Atherton Drive will be a shared pipeline used for both SSJID and the City of Manteca for storm drainage. The SIDE Line design was included in the Tesoro Unit No. 1 Arterial Improvement Plans, on sheets 10 and 11. This project will enable the City and SSJID to share Lateral Tbb from Austin Road to Atherton, then the SIDE line down Atherton to Woodward Road, resulting in significant savings for the City.

2006 STORM DRAIN MASTER PLAN UPDATE
REVISION NO. 4
SWMM MODEL PROCEDURES (4/06)

The following procedures shall be used for SWMM model projects:

1. Piping systems upstream of the basin need not be submitted for the SWMM model.
2. A map shall be submitted delineating the project boundaries. Watershed boundaries and basin sizes and locations shall be indicated. The following watershed data for each basin shall be included with the map or presented in an accompanying table: landuse type, runoff coefficient, acreage, and the required basin volume. An example table is provided below.
3. Basins shall be sized utilizing the formula $V=CAR/12$.
4. Pump stations shall be designed to empty the basin in 48 hours.
5. The basin size, pump station discharge, and all downstream piping design shall be submitted to the City of Manteca for modeling.
6. Any proposed changes in the storm drain system open channels or conduits downstream of detention basins or storm drain lines passing through the project boundaries shall also be submitted for approval.

Basin	Landuse Type	C	A (ac)	R (in)	V (ac-ft)
Basin 1	LDR	0.30	38.2	3.56	3.40
Basin 1	MDR	0.45	7.6	3.56	1.01
Basin 1	Commercial	0.75	5.1	3.56	1.13
Basin 1	Park	0.10	1.4	3.56	0.04
Basin 1	Basin	1.00	4.2	3.56	1.24
Total		0.41 (composite)	56.5		6.82

Pump Station for Basin 1 requires 774 gpm discharge.