CHAPTER 2. EXISTING STORM DRAIN SYSTEM

The City depends on drains and laterals of the SSJID to convey stormwater runoff west to French Camp Slough and the San Joaquin River and the Sacramento-San Joaquin Delta, Figure 2-1. The City collects runoff in an urban storm drain system and conveys flows in most cases to one of more than 30 detention basins. The basins in the existing system were designed to attenuate peak inflows and release to a SSJID drain at a delayed and lower rate. Water in the basins is pumped to a drain which in many cases is monitored to limit flows to the capacity of downstream drains. Figure 2-2 shows the overall City storm drainage system.

South San Joaquin Irrigation District

The SSJID owns a complex network of drains and laterals throughout its service area. Laterals deliver irrigation water to farm operations. Drains collect irrigation water runoff and rainfall runoff from fields and carry it to downstream receiving waters.

All SSJID drains in the City flow to the FCOC, a SSJID facility. The FCOC runs north from Highway 120 along the Union Pacific Railroad (UPRR) tracks to French Camp Slough where drainage flows into the slough and then to the San Joaquin River.

SSJID drains flow from east to west to the FCOC. Drains 3, 3A, 4, 5, 7 and 8 carry City urban runoff in addition to agricultural runoff. The City also pumps urban drainage into Laterals T, Tb, Rf, Re, Y, and Z. At the present time there is no written agreement between SSJID and the City. The former agreement which has expired did not include Drain 8 or Lateral Ya. Also, this master plan includes a Drain 3N which would flow into Drain 3 and makes future use of Drains 10 and 11 as part of the South Drain Project. Also, a proposed north to south drain along Airport Way may have some value for use by SSJID.

In discussions with SSJID, the emphasis is on not exceeding the capacity of District drains and laterals and less on a definite target flow rate number. Monitoring and control equipment will continue to measure water levels at key locations and shut down pumps so as not to exceed capacity.

Existing Drainage Facilities

The City's drainage facilities, shown on Figure 2-2, consist of:

- Storm Drain Collection System
- Detention Basins
- Stormwater Quality Treatment
- Pumps
- SSJID Drains and Laterals

DRAIN 3

DRAIN 4

DRAIN 5

DRAIN 7

DRAIN 8

SOUTH-DRAIN

FRENCH CAMP OULET CANAL

LATHROP RD

MCKINLEY AVE

AIRPORT WAY

UNION RD

MAIN ST

COTTAGE AVE

AUSTIN RD

YOSEMITE AVE

WOODWARD RD

5

99

120

Figure 2-1

City of Manteca
Storm Drain Master Plan
DRAINAGE SUBSHEDS

N

0 1900 3800

SCALE IN FEET

WEST YOST & ASSOCIATES

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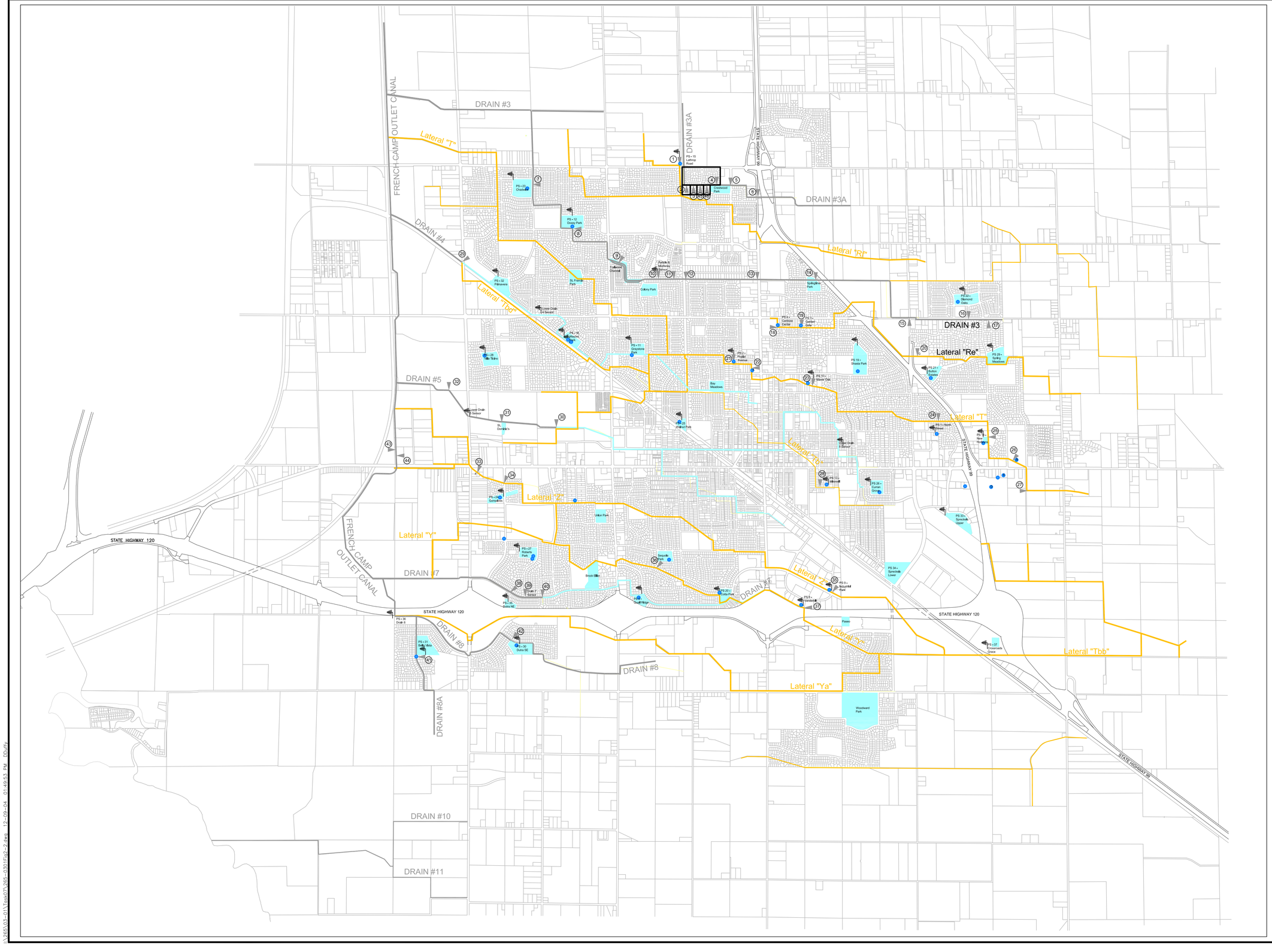
Figure 2-2

City of Manteca
Storm Drain Master Plan
EXISTING STORM DRAIN FACILITIES



LEGEND:

- CITY DRAIN
- SSJID DRAIN
- SSJID LATERAL
- CITY OUTFALL TO SSJID FACILITIES
- CITY TELEMETRY
- CITY LIMITS
- PUMP STATION

NOTES:

1. BASE MAPPING PROVIDED BY CITY OF MANTECA

N

0 1600 3200
SCALE IN FEET

WEST YOST & ASSOCIATES

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Detention Basins

Stormwater detention basins are used to attenuate peak runoff before drainage flows are pumped into the drains and to the FCOC. SSJID requires that drain capacities not be exceeded with drainage flows. Detention basins provide storage to attenuate peak flows helping to maintain the integrity of SSJID drains. Some basins also delay releasing water or a longer time to further reduce the potential of downstream flooding. Basins also allow the use of smaller pumps that reduce capital expense and energy costs. Detention basins may be joint use facilities providing recreation and other uses when not occasionally being used for stormwater. There are presently 32 basins within the City with up to 65 additional basins planned for the near future.

Stormwater Quality Treatment

Stormwater quality standards imposed and monitored by the EPA and the Regional Water Quality Control Board through the City's NPDES permit require treatment of stormwater runoff prior to its release into the sloughs, creeks, rivers or the Delta. Treatment is often provided within detention basins in a separate "wet" area that is part of or adjacent to the main basin. Other treatment may be provided by on-site source control and by site specific facilities such as vortex separators. Stormwater quality is an integral part of the City's stormwater management system.

The City's Stormwater Management Manual defines an overall program for managing stormwater. Most treatment of new development runoff will be within the planned detention basins although in certain cases, individual packaged systems are allowed.

Pumps

Most storm drain water is pumped into the SSJID drains. Pumps are sized according to city design criteria and their operation is controlled by water levels in downstream drains. There are presently 38 drainage pump stations in the City with an additional pump station planned for each proposed detention basin.

SSJID Drains and Laterals

The City uses 14 SSJID drains and laterals including the French Camp Outlet Canal to convey stormwater runoff to the San Joaquin River and the Delta. Drains remove irrigation runoff as well as stormwater from irrigated lands and urban runoff; laterals deliver irrigation water and are also used to convey some drainage. The use of laterals for City drainage is limited because capacity must be maintained for irrigation flows at all times of the year and hydraulic grade lines are maintained higher for water deliveries. This master plan makes future use of three additional drains and reduces reliance on laterals. Existing and developing drains and laterals include:

French Camp Outlet Canal

The FCOC flows from south to north along the UPRR tracks from north of Highway 120 to French Camp Slough in Stockton. The FCOC collects runoff from all of the City drains and laterals and is the backbone of the City storm drain system.

Drains

- Drain 3 - conveys runoff from east to west along the Louise Avenue corridor. Drain 3 is a major drain 24,000 feet long serving 2,200 acres.
- Drain 3A - flows north of Drain 3 and serves 88 acres. At the present time, Drain 3A is pumped at Pump Station 15 to Lateral Rf but the master plan will direct its flow to Drain 3N and to Drain 3.
- Drain 3N - is proposed to serve 1,270 newly developing acres in the north of the City. Drain 3N will terminate at its confluence with Drain 3.
- Drain 4 - serves 885 acres of central Manteca
- Drain 5 - and its Center Street tributary, the Drain 5 interceptor, drain 1,822 acres of central Manteca.
- Drain 7 - drains almost 1,600 acres from the Spreckels complex north of Highway 120 to the southern beginning of the FCOC.
- Drain 8 - drains 236 acres south of Highway 120 north to its confluence with Drain 7 and the FCOC.
- South Drain - is planned to serve 8,680 acres of the growing south area of the City including new industrial land in the southeast City.

Laterals

- Lateral Rf - is the most northerly lateral in the City. It currently receives drainage inflow from Pump Station 15 but with the master plan its use for drainage will be eliminated with the construction of Drain 3N.
- Lateral Re - receives City drainage from Pump Stations 3 and 4. The lateral discharges into Drain 3.
- Lateral T - receives drainage inflow from Pump Stations 1, 2, 10, 14, A, B, C and D.
- Lateral Tb - receives less than one cfs of drainage inflow from Pump Station 13. The lateral discharges into Drain 5.
- Lateral Z - receives drainage inflows from Pump stations 9 and 24. Lateral Z flows into Lateral Y
- Lateral Y - receives drainage inflow from Pump Stations 7 and 8. Pump Station 7 is being diverted into Drain 7. Lateral Y discharges into Drain 7 upstream of the FCOC.