3 GROWTH MANAGEMENT AND INFRASTRUCTURE

The Growth Management and Infrastructure Element is included to preserve the city's compact urban form, open spaces, and agricultural lands while accommodating growth needs. While policies to regulate the location, pace, and timing of growth are included, these will not restrict Lodi's ability to meet its housing need obligations or long-range growth projections by regional agencies.

The Element seeks to maintain a high quality of life and adequate public facilities while allowing for sufficient land area for new development and new residents through use of strategies such as promoting infill and contiguous development, identifying an Agricultural/Cluster Study Area, phasing, and planning for future infrastructure and facilities. Infrastructure financing is discussed in Appendix A: Implementation.

3.1 BACKGROUND

Balancing Agriculture, Open Space, and Urban Development

The General Plan prioritizes compact development to foster livability in the urban realm and avoid wasteful or premature consumption of agricultural land and open space. Agricultural lands provide a variety of important functions in the Planning Area. First, they produce commodities that generate economic benefits in the form of local jobs and revenue. Second, they contribute to the aesthetic value of the area and character of the city (especially with the growing viniculture industry). Finally, they create a variety of foraging habitats for several important special status wildlife species.

Future development could eliminate, modify or fragment agricultural resources. Fragmentation of existing agricultural lands may increase the likelihood of increased nuisance effects resulting from urban expansion into agricultural areas. Nuisance effects include noise (from farm equipment and crop dusting), dust, odors, and drift of agricultural chemicals. From the agricultural perspective, conflicts with urban development include restrictions on the use of agricultural chemicals, complaints regarding noise and dust, trespass, vandalism, and damage from domestic animals. These conflicts may increase costs to the agricultural operation, and combined with rising land values for residential development, encourage the conversion of additional important farmland to urban uses.

Mitigating these conflicts is an important component to maintaining the urban/agricultural balance Lodi has thus far maintained. This plan defines growth management strategies that balance urban growth with protection of agricultural land.

Agricultural lands provide economic, aesthetic and habitat benefits for Lodi. This plan includes strategies to maintain a balance between urban growth and protection of agricultural land and open space.

Loss of Agricultural Land and Open Space

Expansion of Lodi's urban area will ultimately result in some loss of surrounding agricultural resources. Development phasing attempts to minimize this impact by focusing first on infill and then on blocks of land that ensure that urban growth remains contiguous, therefore having the least impact on agricultural land while still

accommodating urban growth needs. Farmland preservation and conversion are addressed in more detail in Chapter 7: Conservation.

Growth Management Allocation Ordinance

In 1991, the City adopted a Growth Management Allocation Ordinance to regulate the location, amount, and timing of residential development. Under the ordinance, the maximum number of housing units approved by the City reflects a 2% maximum increase in population annually. Unused permits roll on to the next year. The ordinance establishes a residential density allocation system to promote a mix of housing densities. For example, in 2005, the 2% Growth Management Allocation Ordinance translated to a maximum of 450 residential building permits; 65% of the approved permits were for low density housing units (under seven units/acre), 10% medium density units (7-20 units/acre), and 25% high-density units (over 20 units/acre). Overall, the allowable housing developments averaged seven units per acre.

The breakdown by density establishes an upper limit for the number of permits, but does not guarantee that the density quotas are attained by the end of a year. Because in most years demand has been less than available permits, an inventory of available permits has built up, standing at a total of 3,268 available units in addition to the annual 2% allocation in 2007. The General Plan Land Use Diagram (as shown in Figure 2-1 of Chapter 2) defines adequate residential area to meet the maximum population permissible under the Growth Management Allocation Ordinance.

Armstrong Road Agricultural/Cluster Study Area

In order to maintain a clear distinction between Lodi and Stockton and to preserve agriculture—two separate but overlapping goals—Lodi recently identified the Armstrong Road Agricultural/Cluster Study Area. The study area extends along the south edge of Lodi (about one-half mile north of Armstrong Road), from I-5 to SR-99, and south to the City of Stockton's Planning Area boundary. The City Council appointed Community Separator/Greenbelt Task Force has investigated a variety of models to accomplish the separator and open space plan. Table 3-1 discusses some potential planning tools that may be used in establishing a separator.

TABLE 3–1: POTENTIAL PLANNING TOOLS FOR PRESERVING GREENBELT LANDS

PRIMARY METHODS	KEY ACTIONS/ACTIVITIES
Purchase	
Acquire land and/ or development potential	Establish funding mechanisms for acquisition; identify or create entities for holding purchased land and easements
Regulation	
General Plan designations	Assure appropriate uses and densities
Zoning classifications	[same]
Cautious annexation	Avoid piecemeal or premature annexation
SECONDARY METHODS	**KEY ACTIONS/ACTIVITIES**
Provide protective planning context	
Coordination with other agencies	Coordinate with LAFCo annexation policies and with County density standards
Land use compatibility	Avoid uses that would diminish the agriculture/open space character of the greenbelt
Right-to-farm legislation	Assure availability to farmers of standard farming practices
Mitigation ordinances	Require new development on farmland to secure for agriculture an equivalent (or greater) amount of other farmland
Assure appropriate land market conditions	
Minimize competition for land	Manage development process within the greenbelt to avoid new uses or land divisions that might diminish agricultural focus
Channel urban growth elsewhere	Assure that neighboring urban communities adequately respond to growth needs within their corporate limits
Avoid urban infrastructure	Avoid extension of water or sewer lines that would increase potential development capacity
Strengthen agricultural enterprises	
Tax relief	Support measures that use agriculture/open space values as the basis for property taxation
Value-added enterprises	Allow suitable onsite diversification
Branding	Establish a market identity for local agricultural products
Expand upon Agricultural Tourism	Establish programs that support agricultural tourism, such as regional marketing and programs that help farmers, vintners, etc to develop tourist-oriented attractions.
Assure supportive economic context	
Maintain agricultural infrastructure	Assure that direct inputs to agriculture (like water supply) and indirect inputs (finance, warehousing and shipping, materials and supplies, labor) remain available
Farm-friendly policies and programs	Determine whether public agency strategies such as permit simplification are needed
Economic development component	Integrate local agriculture into regional and city economic development planning
Build Public Support	
Gain stakeholder consensus	Communicate greenbelt purpose/needs to interested parties
Use outreach and education to garner public support	Establish clear statement of public purpose and strengthen public understanding and participation

Source: Mundie & Associates, 2007.

3.2 GROWTH STRATEGY

Extent

If developed to its ultimate potential, the Plan's urban area would extend west to an elongated Moore Road, south to Hogan Lane, east to Curry Avenue, and north to the Mokelumne River. The river is the current urban limit, and is maintained as such in the Plan since providing connections and services north of the river would be challenging during this Plan horizon. The northern border also remains south of Woodbridge, with no plans to annex this area. Hogan Lane, the northern limit of the Armstrong Road Agricultural/Cluster Study Area, is identified as the ultimate southern border.

Phasing

Phasing is designed to promote development within and contiguous to the existing urban area. This approach focuses on making the best use of existing infrastructure, maintaining the quality of Lodi's current built form, and preventing unnecessary conversion of agricultural land. This development pattern allows infrastructure expansion to be targeted to specific areas of the city, thereby ensuring that services are provided in tandem with new development. Development thresholds for each phase must be met before new development can be approved in the next area.

Infill and new urban areas, along with their phasing, are shown in Figure 3-1. The eastern growth areas are intended for employment uses, taking advantage of highway and rail access and the ability to meet the large land area requirements of a large new office or industrial user. Generally speaking, the southern and western areas would accommodate residential and mixed use development to support the new neighborhoods.

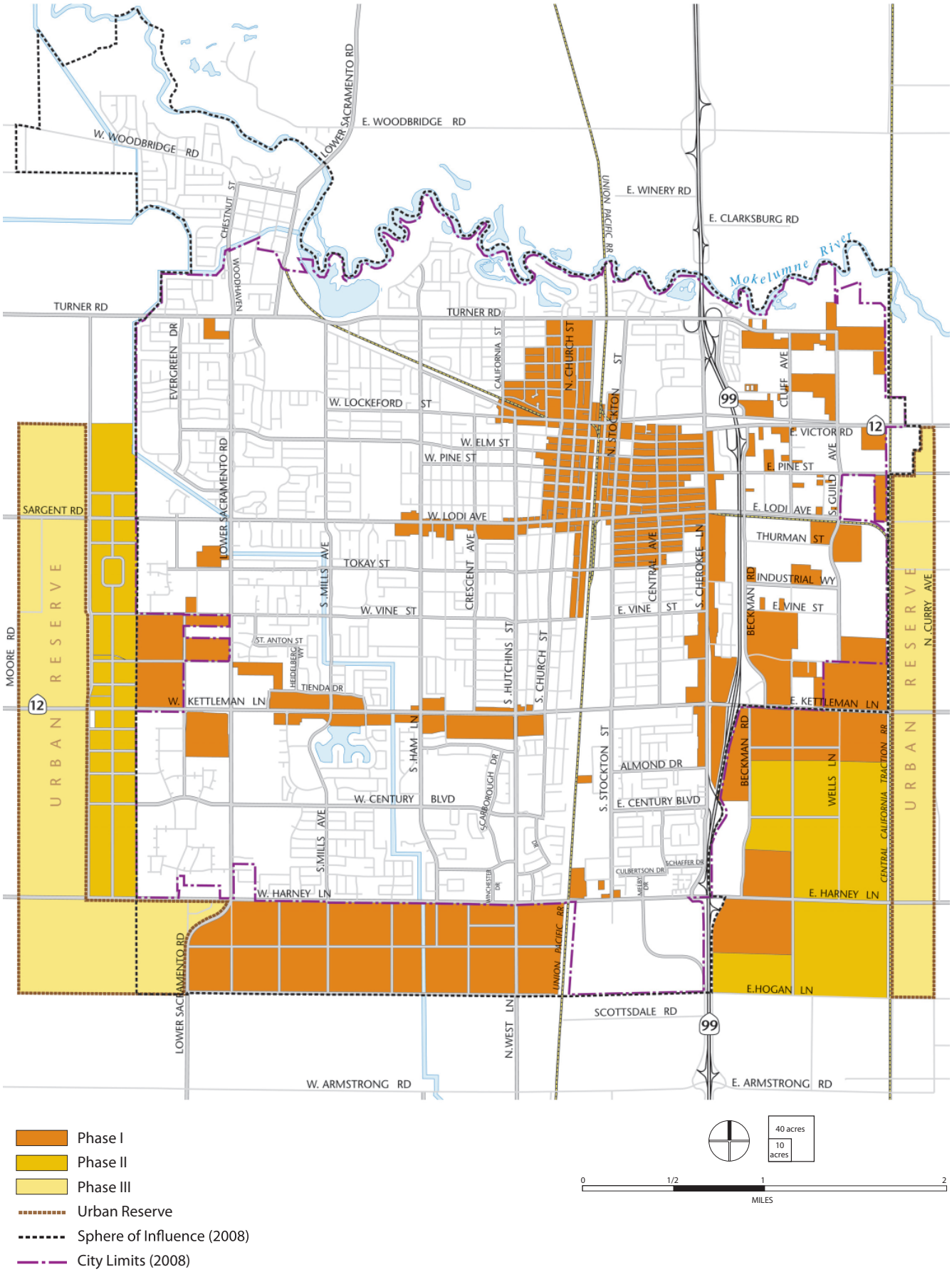
Phase 1 represents a probable scenario for the level of growth that can be anticipated during the planning period, given market conditions and recent trends. Phase 1 development includes:

1. Approved and under construction development projects.
2. Infill development and redevelopment downtown, along the city's major corridors, and in the eastern industrial areas. Also infill between approved development projects, including properties one-half mile west of Lower Sacramento Road, between West Vine Street and Kettleman Lane.
3. New growth areas including:
    - Properties south of Harney Lane and north of the Armstrong Road Agricultural/Cluster Study Area for residential and mixed use development.
    - Properties around the Kettleman and Harney lane interchanges of SR-99 for office and commercial development.

Phase 2 represents the next phase of development to be pursued once Phase 1 is largely built out and includes the next most contiguous areas that will be made available. This phase includes the areas west of the western city limits and east of the Urban Reserve boundary for residential and mixed use development. This phase also includes land in the southeastern portion of the city, between SR-99 and the Central California Traction (CCT) Railroad line, for additional office and commercial development.

Phase 3 includes the Urban Reserve designations on the west and east edges of the city. These areas represent the maximum land area that may be needed over the course of the General Plan planning period, to comply with the City's Growth Management Allocation Ordinance. These areas would be developed only after Phases 1 and 2 were largely built out. Although it is probable that initial development activity in Phase 3 areas may not occur until 2030, detailed planning may occur before then. This phase includes the farthest extent of the General Plan Land Use Diagram, along the western edge of the city to the elongated Moore Road and along the eastern edge to Curry Avenue.

FIGURE 3-1: DEVELOPMENT PHASES



Development Potential by Phase

In Chapter 2: Land Use, development potential and projected population and employment growth were calculated for each phase, as summarized in Table 3-2. Projected growth represents an annual growth rate of 2%, consistent with the maximum population permissible under the City's Growth Management Allocation Ordinance. Accounting for the current population, new residents anticipated from recently approved projects, and potential future residents, reasonable development of all of the phases in the General Plan could result in 99,500 residents. These projections will allow the City to plan for growth and infrastructure accordingly.

TABLE 3–2: DEVELOPMENT POTENTIAL BY PHASE

PHASE	HOUSING UNITS BY PHASE	CUMULATIVE HOUSING UNITS	POPULATION BY PHASE	CUMULATIVE POPULATION	JOBS BY PHASE	CUMULATIVE JOBS
Existing (2008)	23,353	23,353	63,400	63,400	24,700	24,700
Approved Projects	3,711	27,100	9,700	73,100	2,900	27,600
Phase 1	4,400	31,500	11,400	84,500	11,600	39,200
Phase 2	1,900	33,400	5,000	89,500	8,600	47,800
Phase 3	3,800	37,200	10,000	99,500	3,200	51,000
Total General Plan	**37,200**		**99,500**		**51,000**	

Source: Dyett & Bhatia, 2009; DOF, 2008.

3.3 INFRASTRUCTURE

This section addresses the planning, provision, and maintenance of potable water supply, wastewater, stormwater, and solid waste. Additionally, it addresses water conservation, water recycling, and waste recycling measures as required under State law.

The City of Lodi Public Works Department is responsible for water supply and distribution, sanitary sewer, wastewater treatment, recycled water, and stormwater management for the City. A critical approach to the City's current infrastructure management and planning is to view all water-related utilities and facilities listed above as interrelated, as described in the accompanying graphic. Wastewater can become a water source for certain uses through water recycling, and stormwater can become a water source through groundwater recharge. Impacts on one water type can influence the others and water conservation measures reduce demand on all systems. Therefore, the City currently uses a fully integrated approach to manage and plan for its water-related infrastructure.

Consistent with the General Plan land uses, water, sewer, wastewater treatment, recycled water, and stormwater facilities are planned and sized assuming a reasonable growth rate and development potential, which for the Urban Reserve areas includes: the industrial areas reaching a 50% level of development and the residential areas reaching a 75% level of development. This is considered reasonable development.

Water Conservation

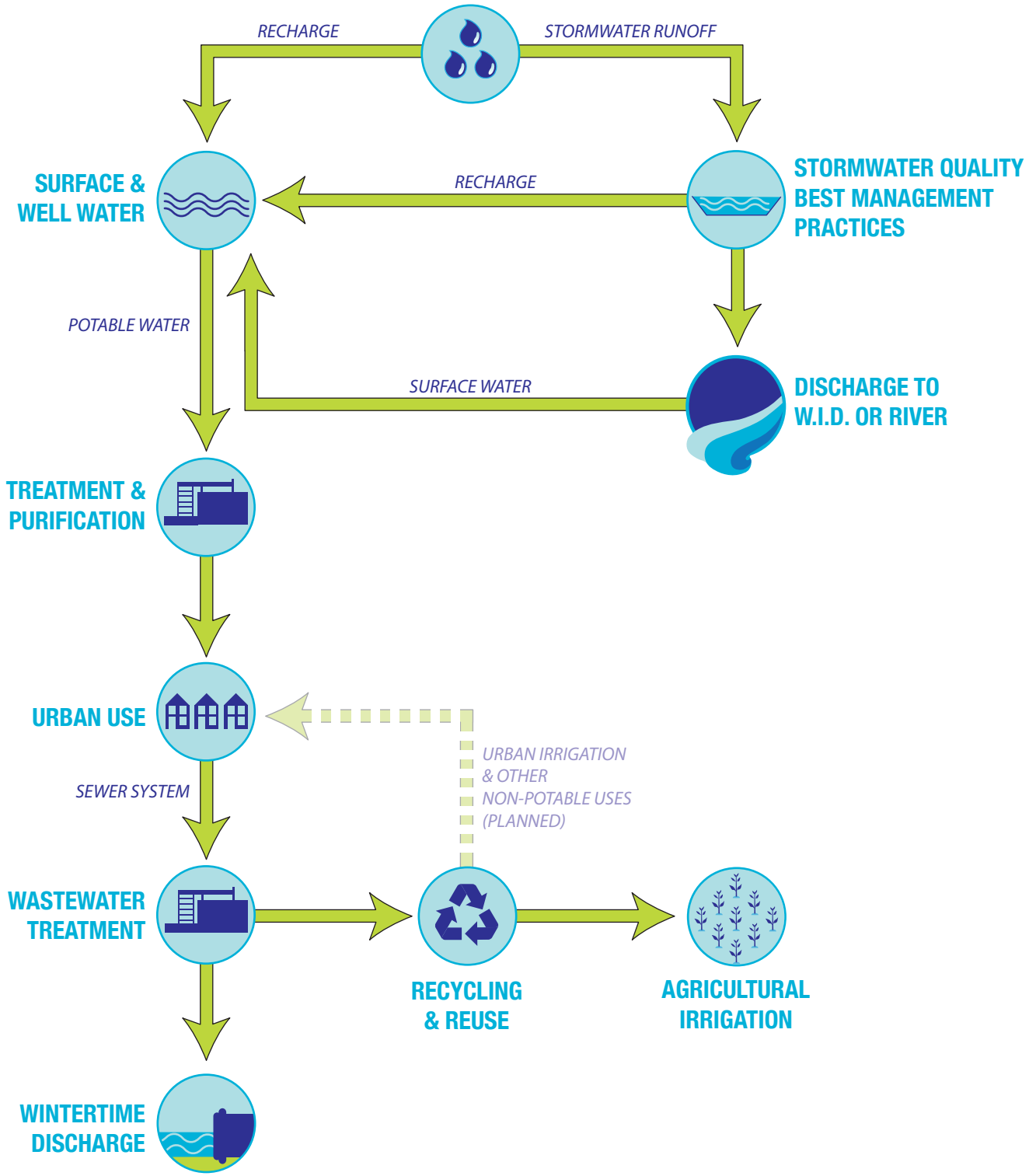
Water conservation is considered crucial to all water and wastewater systems given its potential to reduce infrastructure needs. It is also important given potential water scarcity in dry years. In 1991 Lodi passed a Water Conservation Ordinance prohibiting the waste of water. The ordinance provides examples of water waste, which include but are not limited to:

- Allowing a controllable leak of water to go unrepaired.
- Watering lawns, flower beds, landscaping, ornamental plants or gardens except on watering days as follows: odd-numbered addresses on Wednesday, Friday and Sunday; even-numbered addresses on Tuesday, Thursday, and Saturday.
- Watering lawns, flower beds, landscaping, ornamental plants and gardens between 10 a.m. and 6 p.m. from May 1 through September 30.
- Washing down sidewalks, driveways, parking areas, tennis courts, patios, other paved areas, or buildings.
- Washing any motor vehicle, trailer, boat, or moveable equipment except with a bucket. A hose shall be used for rinsing only and for not more than three minutes.
- Use of a hose without a positive shutoff nozzle.
- Allowing excess water to flow into a gutter or any drainage area for longer than three minutes.
- Overwatering lawns/landscapes, especially from November 1 through February 28, or during and immediately after a rain.

The ordinance is enforced through education, written notices, and escalating fees following the second water waste offense.

Additional water conservation measures include Lodi's Water Meter Retrofit Program, whereby the City of Lodi has begun installing water meters on all unmetered properties in its service area. This is in accordance with California Assembly Bill 2572, which requires the installation and use of water meters throughout the state. Use of water meters has the potential to reduce residential demand by 15%. Other measures are encouraged but not enforced, including a water conservation rebate program available for purchases of ultra low flow toilets and low flow showerheads. Additional water conservation measures will be important for further reducing impacts on water related infrastructure.

LODI'S URBAN WATER CYCLE



Potable Water Supply and Distribution

Future Potable Water Resources and Demand

The total estimated potable water demand at reasonable development of the General Plan is 29.2 million gallons per day (mgd), or 32,730 acre-feet per year, as shown in Table 3-3. This projection is based on the current water demand factor estimates by land use types. This projection was based on current water demand factors used for planning purposes. When these demand factors are used to estimate existing water use, using existing land use information, the resulting calculated annual demand is about 15% more than the actual amount of water produced by the City in 2008. The water demand factors are somewhat conservative to account for variations in weather, assumed full occupancy, and uncertainty regarding the type of user to occupy non-residential parcels in the future. The water use factors should be reviewed in the future after the City is fully metered to verify the adequacy of the demand factors for planning purposes.

In the future, the potential 15% reduction in residential demand due to the installation of water meters would reduce the total city-wide demand at reasonable development to about 26.2 mgd, or 29,380 acre-feet per year. Note that this reduction does not apply to commercial and industrial water demand.

The City has performed several water supply studies in recent years to evaluate the feasibility of the surface water supply, and the City is now progressing into the design of the treatment plant. It is anticipated that the eight mgd plant will be constructed and operational in 2011.[1] The new water treatment plant will be located near the northwest corner of the city.

The City's long term reliable water supplies include:

- Ground Water: The groundwater safe yield for the area currently covered by the city is estimated to be about 15,000 acre-feet per year.[2]
- Surface Water: Under terms of an agreement with the Woodbridge Irrigation District (WID), 6,000 acre-feet per year of surface water is currently available. The agreement also provides that, as WID irrigated lands are annexed for development, the City has the ability to purchase an additional three acre-feet per year for each acre of WID land that is annexed, up to 6,000 acre-feet. Purchase of the additional water is contingent on the proposed surface water treatment plant being constructed and operational.[3]

Thus, the city is expected to have a long-term, reliable water supply of at least 27,000 acre-feet per year available from its current safe yield of groundwater and the current/future surface water supplies, or about 92% of the estimated demand when considering conservation from water meter installation.

As the city grows, the available safe yield of the underlying groundwater will increase. If Lodi develops the ability to use non-potable and recycled water for landscape irrigation, it will further reduce the city's overall potable water demand. In addition, the WID Stormwater Discharge Agreement may allow purchase of nonpotable water from the WID canal, as discussed below. Given these factors, the City should have adequate water supplies to satisfy the water demands required for development of the new General Plan.

Water Distribution System

The City's water distribution system includes:

- Twenty six existing groundwater wells with a total pumping capacity of 35,200 gallons per minute (gpm).[4] Two new wells are currently under development.[5]
- A network of water pipes, which includes about 225 miles of pipe ranging in diameter from two to 14 inches.
- Two storage tanks, including a 100,000 gallon elevated tank and a one million gallon ground level tank with booster pumping station.

[1] City of Lodi, July, 2008
[2] City of Lodi, 2005 Urban Water Management Plan, Final Report, March 2006.
[3] Welch, 2009.
[4] City of Lodi, 2005 Urban Water Management Plan, Final Report, March 2006.
[5] Prima, 2007.

TABLE 3–3: SUMMARY OF EXISTING AND PROJECTED AVERAGE DAILY WATER DEMAND

			ESTIMATED DEMAND (MGD)				
LAND USE	**WATER DEMAND FACTOR**	**UNIT**	**Existing City (as of 2008)**	**Approved Development (as of 2008)**	**Phase 1 and Phase 2**	**Phase 3**	**Total**
Residential	200	gpd/Pop	12.67	2.05	3.20	2.02	**19.94**
General Commercial	1800	gpd/acre	0.74	0.15	0.61	0.06	**1.55**
Business Park/Office	1,800	gpd/acre	0.17	0.04	0.78	0.09	**1.08**
Industrial	1,000	gpd/acre	0.76	0.00	0.51	0.20	**1.47**
Mixed Use	1,800	gpd/acre	0.03	0.00	0.00	0.00	**0.03**
Public/ Quasi Public	2,200	gpd/acre	1.13	0.05	0.08	0.07	**1.33**
Parks/Open Space	2,000	gpd/acre	0.55	0.18	0.26	0.16	**1.15**
Unaccounted for Losses (10% of above)			1.61	0.25	0.54	0.26	**2.66**
Total Water Demand			17.66	2.72	5.98	2.86	**29.22**
Total Water Demand (acre-feet /year)			19,781	3,046	6,702	3,200	**32,729**
With Assumed 15% Conservation for the Residential Demand from Installation of Water Meters:							
Total Water Demand with 15% Conservation in Residential Demands (mgd)							**26.22**
Total Water Demand with 15% Conservation in Residential Demands (acre-feet per year)							**29,377**

Notes:

1. The water produced in 2008 was about was about to 17,140 ac-ft, or an annual average of 15.3 mgd.
2. The approved development projects as of 2008 include the FCB Westside Project, FCB Southwest Gateway Project, Kirst Estates, Legacy Estates, Century Meadows One Unit 2, Century Meadows One Unit 3, BSC/ Reynolds Ranch, KB Homes The Villas, Hampton Inn & Holiday Inn .

Source: West Yost, 2009.

Some of the existing two- and three-inch water distribution mains do not have adequate capacity, particularly for providing fire flows and serving future increases in housing density and water demand. The City has a water main replacement program in which the majority of these small water mains will be replaced within the next four years.[6]

Future Distribution Infrastructure

During planning for the new surface water treatment plant, it was concluded that a 36-inch transmission main would be constructed from the new plant to Mills Avenue.[7] This main would be connected to the existing water distribution system to supply surface water to the City's existing water system.

To provide potable water to new growth areas and Urban Reserve areas along the west side of the city, the above mentioned 36-inch transmission main would be extended southerly in Mills Avenue to Lodi Avenue, then westerly across the WID canal. Additionally, new wells will be needed in the southern and eastern areas of the city and water storage tanks may also be needed. The specific water system requirements should be further evaluated through preparation of a potable water master plan at an appropriate time in the future.

The WID canal runs through Lodi. The City of Lodi may purchase up to 6,000 acre-feet per year of surface water from the WID.

Non-potable and recycled water is used for agricultural irrigation, and could also be used for landscape irrigation, thereby reducing the demand for potable water supplies.

[6] Sandelin, 2009

[7] City of Lodi, Surface Water Treatment Facility Conceptual Design and Feasibility Evaluation, Final, July 2008.

Sanitary Sewer System

Municipal Collection System

The municipal sewer system collects wastewater from most of the city. This system consists of sewer pipes ranging in sizes from four to 42-inches in diameter, with six inches being the predominant size.[8] There are six trunk sewers serving the existing city that generally flow from the north to the south. Near the southern edge of town the Century Boulevard Trunk Line flows from east to west and into a 42-inch trunk sewer to the White Slough Water Pollution Control Facility (WSWPCF), located approximately 6 miles southwest of the city along Interstate 5 near North Thornton Road. The sewer system includes five pump stations in the northern area of the city and two (Tienda and Harney) in the southern area of the city.

Sewer Service Plan

The estimated wastewater average dry weather flow (ADWF) and peak wet weather flow (PWWF) at reasonable development of the new General Plan are 11.8 mgd and 22.6 mgd, as shown in Table 3-4. This projection was based on current wastewater flow generation factors used for planning purposes. When these demand factors are used to estimate existing wastewater flows based on existing land use information, the resulting calculated ADWF is about 10% higher than the actual flows measured at the WSWPCF in 2008. The wastewater flow generation factors are somewhat conservative for planning purposes to account for the assumed full occupancy and uncertainty regarding the type of user to occupy non-residential parcels in the future. These flow generation factors should be reviewed in the future to verify that they are adequate for planning purposes. The proposed plan for sewer service uses existing trunk sewers, previously planned new sewers, and sewers planned specifically for the General Plan. The sewer sheds, proposed sewer facilities, and ADWF and PWWF rates for the sewer sheds are shown on Figure 3-2.

The White Slough Water Pollution Control Facility provides wastewater treatment services for Lodi.

[8] Black &Veatch 1990.

TABLE 3–4: SUMMARY OF EXISTING AND PROJECTED WASTEWATER FLOWS

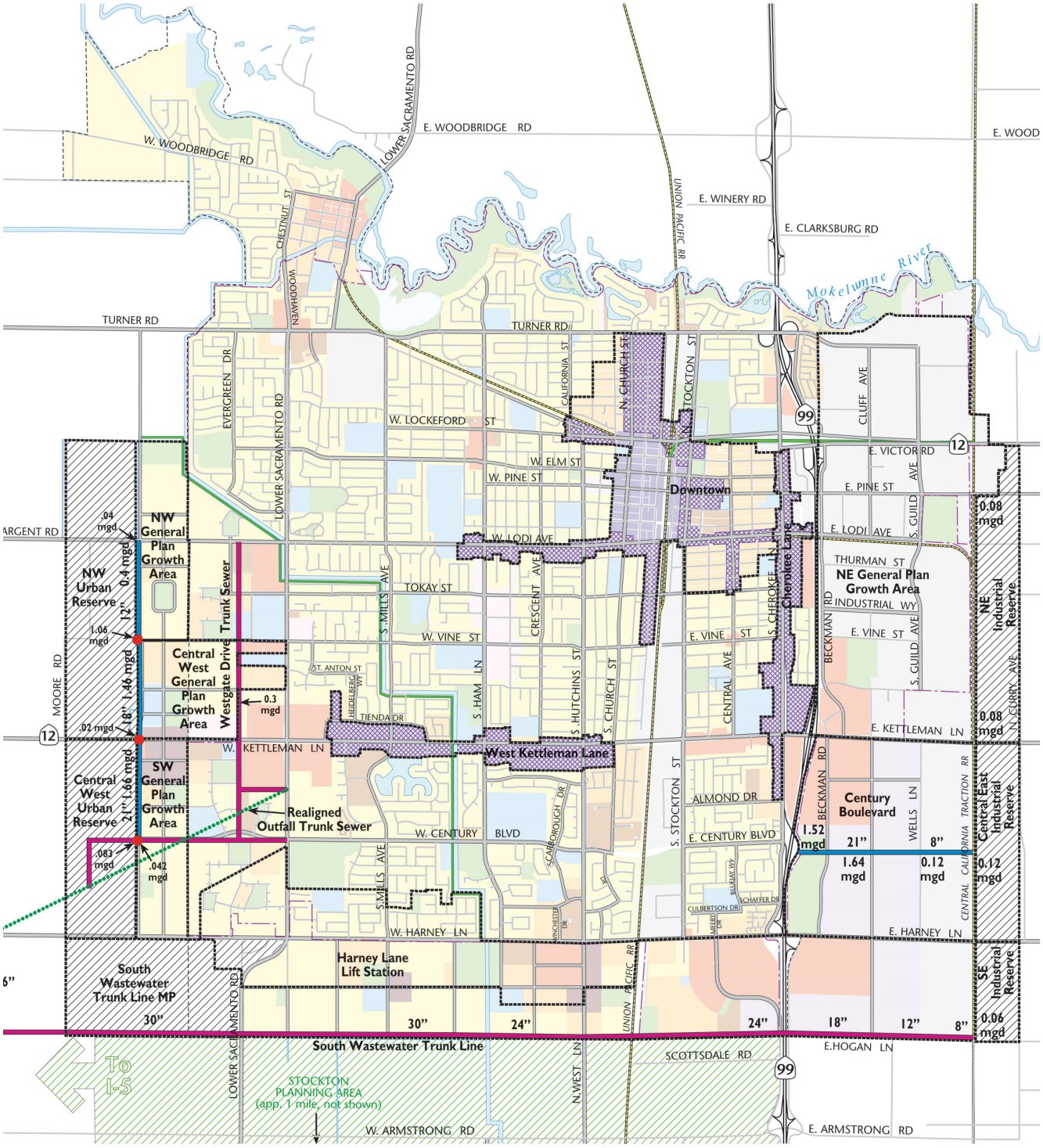
			ESTIMATED FLOW (MGD)				TOTAL		
LAND USE	**WASTEWATER FLOW FACTOR**	**UNIT**	**Existing City (as of 2008)**	**Approved Development (as of 2008)**	**Phase 1 and Phase 2**	**Phase 3**	**Average Dry Weather Estimated Flow (mgd)**	**Peaking Factor**	**Peak Wet Weather Flow (mgd)**
Residential	75	gpd/pop	4.75	0.77	1.20	0.76	7.48	1.6	11.97
General Commercial	1100	gpd/acre	0.45	0.09	0.37	0.04	0.95	3.0	2.84
Business Park/Office	1100	gpd/acre	0.10	0.02	0.48	0.06	0.66	3.0	1.97
Industrial	1000	gpd/acre	0.96	0.00	0.51	0.20	1.67	2.0	3.34
Mixed Use	1100	gpd/acre	0.02	0.00	0.00	0.00	0.02	3.0	0.06
Public/ Quasi Public	20	gpd/ student	0.63	0.04	0.06	0.04	0.75	3.0	2.26
Parks/ Open Space	100	gpd/acre	0.03	0.01	0.01	0.01	0.06	3.0	0.17
Flag City Wastewater Flow (estimate for 2006)	NA	NA	0.13				0.22	NA	0
Total Flow			**7.07**	**0.93**	**2.63**	**1.09**	**11.80**		**22.61**

Notes:

1. Large industrial flows that discharge to domestic sewer system include (seven days a week) General Mills at 0.073 mgd, Cottage Bakery at 0.072 mgd, and (five days a week) Miller at 0.034 mgd, Lustre Cal at 0.006 mgd, Armour Strux at 0.007 mgd, and La Campana at 0.004 mgd for a total of 0.196 mgd. These flows have been added to the per acre industrial flows.
2. In 2008, the ADWF was 6.4 mgd. This flow rate included the flow from Flag City and the industrial flows described in Note 1.
3. The approved development projects as of 2008 include the FCB Westside Project, FCB Southwest Gateway Project, Kirst Estates, Legacy Estates, Century Meadows One Unit 2, Century Meadows One Unit 3, BSC/ Reynolds Ranch, KB Homes The Villas, Hampton Inn & Holiday Inn .

Source: West Yost, 2009.

FIGURE 3-2: PROPOSED SEWER FACILITIES



Sewer Shed

30" / 1.66 mgd — Recently Planned Trunk Sewer

WW Outfall Trunk (approximate location)

Proposed Trunk Sewer with size and peak wet weather flow (mgd)

Sphere of Influence (2008)

City Limits (2008)

40 acres

10 acres

0 1/2 1 2 MILES

Sewer Outfall from the City to the WSWPCF

The existing sewer collection system flows to a common discharge point on Lower Sacramento Road between Kettleman Lane and Century Boulevard. From this point, a sewer outfall conveys wastewater from the city to the WSWPCF. The outfall was constructed in 1967 using reinforced concrete pipe. It was recently slip- lined to remediate corrosion problems, thereby reducing the pipe diameter from 48-inches to 42-inches. This outfall has three segments with different slopes and different corresponding capacities. The segment capacities are summarized in Table 3-5. Based on the City's sewer design criteria that sewers must convey the PWWF at a water depth of no more than 75% of the pipe diameter, a parallel outfall pipeline will be needed to convey the PWWF of 22.6 mgd before reasonable development of the General Plan is reached. Alternatively, a recycled water processing treatment would need to be constructed near the city.

Wastewater Treatment Facility

The City has provided wastewater service for the Lodi community since 1923. Originally, wastewater was treated at a facility located within the city limits. In 1966, the City constructed a new treatment facility at the current WSWPCF site, along with a pipeline from the original wastewater treatment plant to the WSWPCF site, and began practicing water reuse for agricultural irrigation shortly thereafter.[9] The WSWPCF accepts both municipal and industrial wastewater.

With the recent expansion of the WSWPCF, the treatment plant has an ADWF capacity of 8.5 mgd. The ADWF flow to the WSWPCF for 2008 was 6.4 mgd, indicating that the existing facility has an excess capacity of about 2.1 mgd (ADWF). As shown in Table 3-4, the ADWF to the WSWPCF at reasonable development of the General Plan is projected to be 11.8 mgd, or an increase of 5.4 mgd from the 2008 flows. Capacity expansion of the WSWPCF will therefore be required within the early stages of Phase 1. The City of Lodi Wastewater Master Plan preliminarily identified the facilities needed to achieve a capacity of 12 mgd.[10] The required facilities to meet General Plan demand in 2030 ADWF of 11.8 mgd are described in Table 3-6 in the following section.

Disposal

The City is permitted to discharge municipal effluent that is filtered and disinfected to State of California Title 22 recycled water tertiary standards year-round to Dredger Cut. During the irrigation season, the majority of the effluent is reused for agricultural irrigation. In addition, about 0.1 to 0.8 mgd of treated effluent is used for cooling water at a power plant and to supply several small fish rearing ponds operated by the San Joaquin Mosquito and Vector Control District. Both facilities are located adjacent to the WSWPCF.

TABLE 3–5: EVALUATION OF OUTFALL CAPACITY[1]

SEGMENT OF SLIP LINED 42-INCH PIPE	PIPE CAPACITY (MGD)	
	Full Pipe Capacity	3/4 Full Capacity
WSWPCF to Thornton Road (2,950 feet)	20.4	18.6
Thornton Road to Existing Ditch[2] (17,830 feet)	19.0	17.3
Existing Ditch to Lower Sacramento Road (2,980 feet)	16.6	15.1

1. Capacity analysis is based on the drawing set "Sanitary Sewer Outfall Pipeline No. 2" as-built drawings dated December 28, 1967 using a Manning's n value of 0.013.
2. Existing ditch is 3,000 feet downstream of Lower Sacramento Road.

Source: West Yost Associates, 2009.

[9] West Yost Associates, City of Lodi Wastewater Master Plan, January 2007.

[10] Ibid.

Recycled Water

The City manages about 7,800 acre-feet per year of influent flows to the WSWPCF, and about 3,500 acre-feet per year is treated to secondary level and used for agricultural irrigation near the WSWPCF for growing animal feed and fodder crops that are not for human consumption. The City uses this industrial and/or domestic recycled water to irrigate about 790 acres of agricultural land owned by the City. In recent years, the City has also supplied recycled water from the domestic treatment process to produce steam for a 49-megawatt natural gas-powered generator, and to replenish mosquito fish-rearing ponds. Additionally, the City has provided a "will-serve" letter to the Northern California Power Agency (NCPA) for a potential power plant that will utilize an average of 1.43 mgd (1,602 acre-feet per year) of treated wastewater. As of 2009, this project is still in planning stages. Although this recycled water is put to beneficial use, there is currently no cost effective way to return recycled water to the City to satisfy non-potable urban water demands.

In 2008, the City prepared the City of Lodi Recycled Water Master Plan.[11] The plan concluded that the quality of Lodi's recycled water is suitable for most recycled water uses and that quality will improve when the WID surface water supply is added to the potable water supply. The plan noted several potential recycled water uses, totaling about 12,696 acre-feet per year. These uses include:

- Urban uses: irrigation of parks, constructed lakes, cemeteries, schools, and median strips. For these uses the total potential use is about 1,731 acre-feet per year, not including all of the new growth areas identified in this plan.
- Commercial and industrial uses of up to 1,831 acre-feet per year.
- Agricultural uses of up to 9,134 acre-feet per year.

The Recycled Water Master Plan found that it would not be cost effective to deliver recycled water to all of the potential demand locations. However, the plan did identify preferred potential uses of recycled water, including providing about 3,720 acre-feet per year of recycled water for agricultural uses, and establishing a non-potable water system serving urban customers. The latter alterative requires further evaluation.

The General Plan includes areas totaling about 1,600 acres that could be irrigated with nonpotable water. These areas include the commercial, industrial, business park/office, industrial reserve, mixed use centers, public/quasi public, parks, open space, and about 20% of the urban reserve area. This does not include landscaping in residential areas. Parks and basins represent about 136 acres of this land and the parks could be irrigated with about 3.4 acre-feet of water per year. Assuming that about 10% of the remaining nonresidential area is landscaping that could be irrigated with non-potable water, the total potential demand from the new General Plan growth areas would be about 1,000 acre feet per year. However, use of recycled water in the city would decrease the available recycled water for use for agriculture around the WSWPCF and, therefore, may not be cost effective. Ongoing consideration of the topic is warranted.

In addition to recycled water from the WSWPCF, gray water and rainwater may also be used on-site for specific purposes. Gray water is untreated household wastewater that comes from bathtubs, showers, bathroom wash basins, and clothes washing machines, and which may be reused to flush toilets and for subsurface irrigation of non-edible landscape plants. Harvested rainwater may also be applied directly to non-potable water uses such as toilet flushing, laundry, and irrigation. Use of gray water or rainwater for non-potable uses may require installation of dual plumbing systems.

Stormwater

Discharge System

The City's stormwater system consists of catch basin inlets, storm drain pipes, detention basins, gravity outfalls into the Mokelumne River, and pump stations with outfalls to the Mokelumne River and the WID canal. There are about 110 miles of storm drains, eight

[11] RMC Water and Environment, 2008.

detention basins located in City parks, and 14 pump stations. The City's existing system functions well, with no significant flooding problems. Like many other relatively flat, Central Valley communities, however, there are areas of minor drainage nuisances.[12]

WID Discharges

The city's stormwater discharges to the WID canal are governed by the Storm Drainage Discharge Agreement between the City and WID, dated October 20, 1993.[13] The 40-year agreement covers the area defined as the City's corporate boundaries, with an ultimate boundary including 16,800 acres. The agreement recognizes that the WID canals are for irrigation purposes and for groundwater recharge. Under the terms of the agreement the discharges from the City's pump stations must be regulated to avoid exceeding the available capacity of the canal and interfering with WID operations. The total discharge into the canal from the City is limited to 160 cubic feet per second (cfs), which is 40% of the canal's conveyance capacity of 400 cfs. Additional requirements exist for specific timing and types of discharges.

The agreement also allows the City to purchase water from WID for non-potable water uses, as long as the annual quantity of purchased water does not exceed the average annual storm drain discharge. The water is available for purchase only if WID has satisfied its irrigation demands and has the ability to deliver the water. Therefore, although the purchase of non-potable water is mentioned in the agreement, City staff must verify with WID whether water is likely to be available. Finally, the agreement requires the City to take reasonable precautions to prevent/remove toxic substances, pollutants, and wastes before discharging flow into the WID canal. Ongoing communication between the City and WID will be an important component of continuing the existing relationship.

Planned Stormwater System

The stormwater plan for the reasonable development of the General Plan includes the division of the City's growth areas into 16 drainage watersheds. The watershed boundaries shown on Figure 3-3. For each of these watershed areas, the tributary trunk drain, detention basin, discharge rate (gravity flow or pump station), and outfall pipeline have been preliminarily sized. These facilities are briefly described in Table 3-6, though facility planning and sizing will need to be refined and verified though preparation of a detailed stormwater master plan. Additional storm drain collection systems would also be required and should be considered in the citywide storm drain master plan.

Stormwater Quality

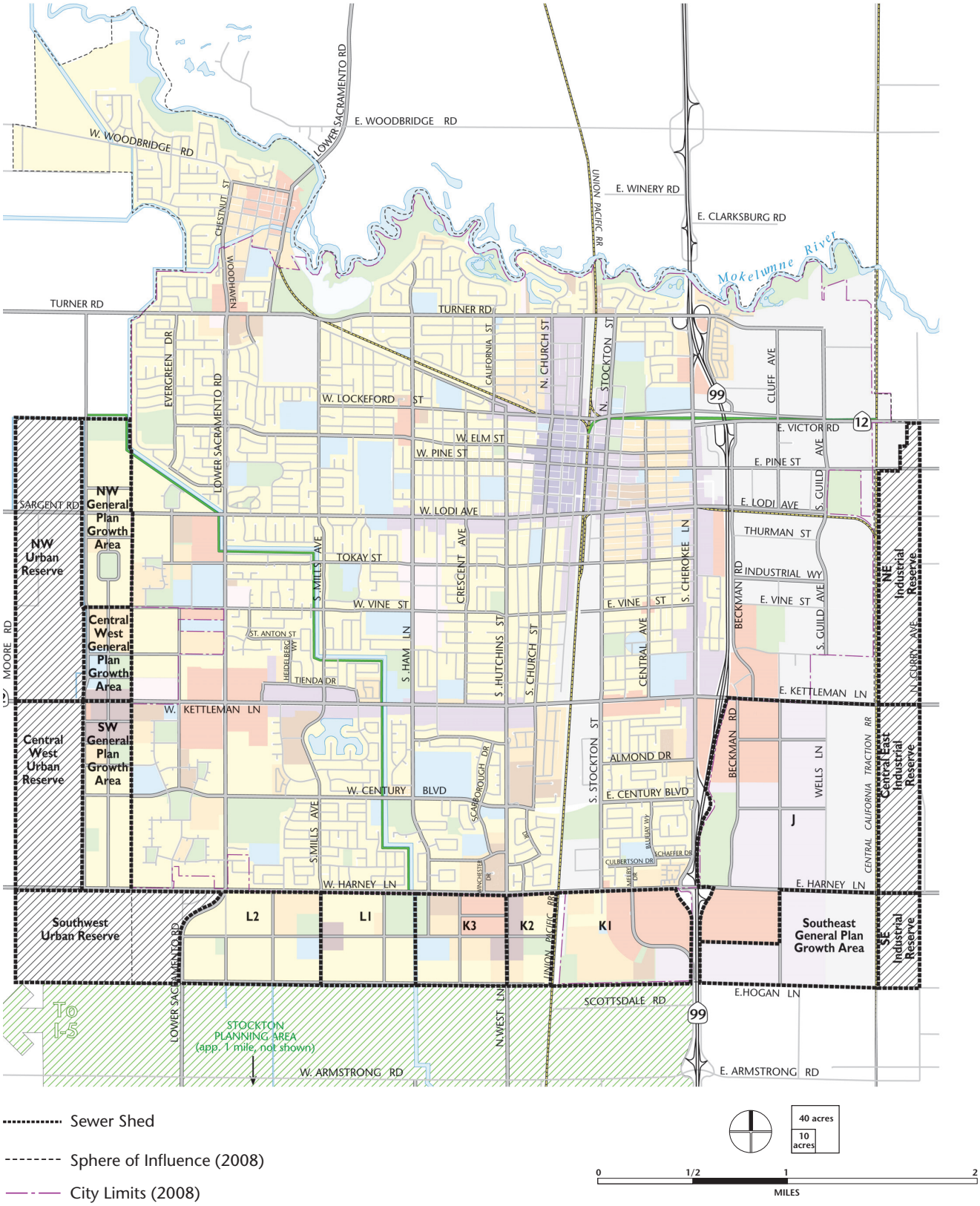
The City of Lodi has two documents that address stormwater quality, the City of Lodi Stormwater Management Program[14] and the City of Lodi Stormwater Development Standards Plan.[15] The Stormwater Development Standards Plan identifies the water quality Best Management Practices (BMP's) required for all new development and significant redevelopment activities within the City. It identifies specific BMP's for the three drainage zones in the City, which include drainage to the Mokelumne River, drainage to the WID canal, and drainage to a retention basin with no discharge, as well as BMP's appropriate for specific types of industries and businesses. Compliance with the requirements of these documents protects the quality of the City's urban runoff, and ultimately protects the quality of the Mokelumne River and WID canal.

Some of these BMPs should be considered for implementation in conjunction with the storm drainage detention basins described in Table 3-6. For example, the release structures from the basins could be designed to allow the bottom two to three feet of the basins to function as extended detention basins. Another approach would be to design detention basins to include water quality wet ponds or constructed wetlands within the bottom of the stormwater detention basins. These facilities can also help recharge the underlying groundwater.

Infiltration trenches and infiltration basins could also be constructed within the pond bottoms to treat and

[12] Prima, 2007.
[13] Woodbridge Irrigation District, 2003.
[14] Black & Veatch, City of Lodi Stormwater Management Program, January 2003.
[15] City of Lodi Stormwater Development Standards Plan, May 2008.

FIGURE 3-3: PROPOSED STORM DRAIN FACILITIES



infiltrate the more highly polluted first flush of runoff and the highly polluted dry weather runoff (e.g. from car washing on streets and driveways). These facilities could completely eliminate the discharge of the most polluted flows to the Mokelumne River and the WID canal, and help recharge the underlying groundwater.

Utility Master Plans

At an appropriate time in the future, utility master plans should be prepared for each of the services discussed above, including water, sewer, WSWPCF, recycled water, and stormwater. The appropriate timing of these master plans varies by the utility.

Potable Water Supply and Distribution

Significant modeling and facilities planning/design has occurred recently for the City's water system, and a new master plan is not urgently needed.

Sanitary Sewer System

City staff have sized and planned a South Wastewater Trunk Line along the south boundary of the City to convey wastewater from the east side of the City to the sewer outfall from the City to the WSWPCF. However, the trunk sewer sizing did not account for all of the growth on the east side of the City or redevelopment within the City identified in this general plan update. Consequently, the sizing of the trunk sewer may have to be revised. Currently, only one segment of the trunk sewer has been constructed. City staff has a current sewer model of the collection system that could be used to definitively evaluate how to best provide sewer service for the growth on the east side of the city and the redevelopment within the existing city. This work should be undertaken soon (before more segments of the trunk sewer are constructed) in case additional wastewater flows need to be diverted into the proposed South Wastewater Trunk Line.

WSWPCF

The WSWPCF has recently been expanded and should have adequate capacity through the early stages of Phase 1. Updating the WSWPCF master plan could be delayed until this time.

Recycled Water

A recycled water master plan was prepared in May 2008 and is still current. It may be appropriate to update this document when the next WSWPCF master plan is prepared. The updated recycled water master plan should also:

- Evaluate the potential to use nonpotable water from the WID canal.
- Evaluate the feasibility of constructing a scalping plant or recycled water processing treatment facility near the city to provide recycled water for use within the city. This would reduce the wastewater flow requiring treatment at the WSWPCF. It would also eliminate the need for a pipeline from the WSWPCF back to the city to deliver recycled water for use within the city.

Stormwater

The last citywide storm drain master plan was prepared in 1963, but stormwater facilities for the growth along the southern area of the city were evaluated in March 2009. It is recommended that a new citywide stormwater master plan be prepared soon after General Plan adoption to confirm or revise existing planning studies.

Preparation of these utility master plans at the appropriate times is the first step in enabling the City to provide these services for the General Plan growth. Through these master plans the facilities required for water, sewer, wastewater treatment, recycled water, and stormwater services for the reasonable development of the General Plan will be more precisely identified.

Solid Waste Management and Recycling

The City of Lodi contracts with Central Valley Waste Services to provide residential and commercial garbage collection, transportation and disposal as well as the collection of recyclable materials. Garbage is collected weekly and recycling, yard, and garden waste are collected on alternating weeks. Central Valley waste services also has a Transfer Station and Buy-Back Recycling Center open to the public in Lodi, and Dart Container Corporation opened a polystyrene foam recycling drop-off site at its Lodi plant.[16] The city's waste goes to several landfills, with the majority going to North County Landfill, which is expected to have capacity through 2035.[17] Chapter 8: Safety includes details on Solid Waste facilities, recycling facilities and landfill sites in the planning are.

Public Resources Code section 41780, enacted by AB 939, requires every city and county in the state to divert from landfill at least 50% of the waste generated within their jurisdiction in 2000. The Legislature amended this statute in 2000, requiring jurisdictions to sustain their waste diversion efforts into the future. Lodi met the diversion goal by diverting 51% of its waste out of landfills in 2000. Lodi's 2006 waste diversion rate was 62%.[18]

The City seeks to reduce waste generation levels through recycling and other waste diversion programs.

[16] Dart Container Corporation.
[17] California Integrated Waste Management Board (CIWMB).
[18] Ibid.

3.4 INFRASTRUCTURE PHASING

As described above, some new infrastructure will be required to accommodate growth throughout the planning period. These requirements are described in Table 3-6.

TABLE 3–6: INFRASTRUCTURE PHASING

LOCATION	REQUIRED INFRASTRUCTURE	PHASE
Potable Water Supply		
	New transmission main is required from the new surface water treatment plant to Mills Avenue. This main would be connected to the existing water distribution system to supply surface water to the City's water system.	Phase 1
	Specific water system requirements should be further evaluated through preparation of a potable water master plan at an appropriate time in the future.	Phase 1
Southern and eastern areas of the city.	New wells will be required. Additional water storage tanks may be needed.	Phase 1-2
General Plan growth areas and Urban Reserve areas	The transmission main installed in Phase I would need to be extended southerly in Mills Avenue, then westerly in Lodi Avenue across the WID canal.	Phase 2
Sewer		
Northeast Industrial General Plan Growth Area	No additional facilities are proposed.	n/a
Northeast Industrial Reserve Sewer Shed	Sewer service for this area will need to be determined through preparation of a sewer master plan.	n/a
Century Boulevard and Central East Industrial Reserve Sewer Sheds	Sewer service for this area will need to be determined through preparation of a sewer master plan.	n/a
Southeast Industrial Reserve Sewer Shed	Sufficient capacity already planned.	Phase 3. Part of the South Wastewater Trunk line Master Plan sewer.
Harney Lane Lift Station Sewer Shed	Sufficient pump station capacity already planned.	Phase 1. As part of the South Wastewater Trunk line Master Plan sewer.
South Wastewater Trunk Line Master Plan Sewer Shed	There is excess capacity available in this planned sewer. As of 2008, the only segment of this sewer that has been constructed is the segment through the Reynolds Ranch development, which has excess capacity.	Phase 1/ in progress. Part of the South Wastewater Trunk line Master Plan sewer.
West General Plan Growth Area and Urban Reserve Sewer Sheds	Western growth area sewer sheds and the Urban Reserve sewer sheds will flow to a new sewer located along the boundary between Phase 2 and Phase 3 development areas.	Phase 2 and 3
Redevelopment Sewer Sheds	Some of the sewers serving the downtown area are currently flowing at or above their design capacity. Additional sewer improvements needed to serve infill will be determined by preparation of a sewer master plan for these areas.	Phase 1

TABLE 3–6: INFRASTRUCTURE PHASING (CONTINUED)

LOCATION	REQUIRED INFRASTRUCTURE	PHASE
Sewer Outfall from the City to the WSWPCF	The outfall does not have adequate capacity for the PWWF at reasonable development of the General Plan. The outfall is expected to have adequate capacity until around the end of Phase 1 or beginning of Phase 2 if it is allowed to flow full. Alternatively, a scalping plant near the City could be constructed to treat some of the wastewater flow and to provide recycled water for use in/near the city. This scalping plant would reduce the flow that must be conveyed in the existing outfall pipeline.	End of Phase 1 or beginning of Phase 2
WSWPCF	Capacity expansion of the WSWPCF will be required within the early stages of Phase 1. The following facilities would be required to meet demand at reasonable development: • Two Additional Primary Clarifiers • Three Additional Aeration Basins • One Additional Secondary Clarifier • Filter Influent Pump Station • Tertiary Filtration Facility • UV Disinfection Facility • One Additional Anaerobic Digester • General Expansion of the Hydraulic Capacity Throughout the Treatment Plant • General Expansion of the Staff Facilities/Building • Other miscellaneous improvements Alternatively, a scalping plant near the City could be constructed to provide recycled water for use in/near the city that would reduce the size or extent of the required new facilities at the WSWPCF. However, there would need to be a nearby use for the recycled water for a scalping facility to be feasible.	Phase 1, Part of the City of Lodi Wastewater Master Plan.
Stormwater		
Watersheds K1, K2, K3, L1, and L2	Detention basins and trunk storm drains will be needed for all watersheds. In addition, L2 will require its own pump station with two pumps. There will need to be an outfall pipe line located in a 75 foot wide greenbelt buffer along the south boundary of the city that flows to a new 60 cfs pump station on the east side of the WID canal (WID pump station).	Phase 1. Part of the South Lodi Storm Drain Master Plan and South Hutchins Study Area Storm Drainage Master Plan.
Watershed J General Plan Growth Area	Trunk storm drain, detention basin, and outfall pipeline will be needed for this watershed.	Phase 1
General Plan Growth Area North of Kettleman Lane and west of Lower Sacramento Road	Storm drainage service for the area of growth North of Kettleman Lane and west of Lower Sacramento Road has already been planned. No additional new facilities are necessary.	Phase 1

TABLE 3–6: INFRASTRUCTURE PHASING (CONTINUED)

LOCATION	REQUIRED INFRASTRUCTURE	PHASE
Central West General Plan Growth Area	Trunk storm drain, detention basin, and outfall pipeline will be needed for this watershed.	Phase 1
Southeast General Plan Growth Area Watershed	Trunk storm drain, detention basin, and outfall pipeline will be needed for this watershed.	Phase 2
Northwest General Plan Growth Area Watershed	Trunk storm drain, detention basin, and outfall pipeline will be needed for this watershed.	Phase 2
Southwest General Plan Growth Area	Trunk storm drain, detention basin, pump station, and outfall pipeline will be needed for this watershed.	Phase 2
Northeast Industrial Reserve	Detention basin, pressure pipeline, and storm drains will be needed for this watershed. Additional studies will determine if existing detention basin could gravity drain to existing pump station, eliminating need for a new pump station.	Phase 3
Central East Industrial Reserve	Detention basin and outfall pipeline will be needed for this watershed.	Phase 3
Southeast Industrial Reserve Watershed	Trunk storm drain, detention basin, and outfall pipeline will be needed for this watershed.	Phase 3
Northwest Urban Reserve Watershed	Trunk storm drain, detention basin, and outfall pipeline will be needed for this watershed.	Phase 3
Central West Urban Reserve Watershed	Trunk storm drain, detention basin, and outfall pipeline will be needed for this watershed.	Phase 3
Southwest Urban Reserve Watershed	Trunk storm drain, detention basin, pump station, and outfall pipeline will be needed for this watershed.	Phase 3
Northeast Corner General Plan Growth Area	No additional detention storage or outlet pumping capacity is required for this watershed area.	n/a

Source: West Yost, 2009.

3.5 PUBLIC FACILITIES

This section focuses on specific functional needs of Lodi's public services and facilities, including schools, libraries, police and fire services. Facilities are distributed throughout the city as shown on Figure 3-4.

Public Schools

Lodi's educational and academic needs are served primarily by the Lodi Unified School District (LUSD). LUSD covers an area of 350 square miles, serving all of Lodi as well as North Stockton, Acampo, Clements, Lockeford, Victor, and Woodbridge. In the 2007-2008 school year, LUSD served 31,259 students in kindergarten through grade 12.[19]

Within Lodi, LUSD has a total of 21 schools—12 elementary, two middle, two comprehensive high schools, and one continuation high school. In addition, the district offers alternative, adult, and pre-schools. Table 3-7 describes the enrollment and capacity of LUSD schools located in the City of Lodi.

As of 2007, LUSD's school facilities—within Lodi—were at 97% overall capacity. Several elementary, middle, and alternative education schools are exceeding their capacities.

Private Schools

The City of Lodi has ten private schools, with a total estimated enrollment of 1,875 students ranging from preschool to grade 12. Unlike LUSD schools, many private schools offer preschool education.

Higher Education

Currently there is one adult school and one Regional Occupation Program in LUSD, both of which are located in Lodi's Eastside neighborhood. As of 2007, there are an estimated 2,500 students enrolled in the Adult Education Program and 1,290 enrolled in the Lincoln Tech ROP.

Public schools in Lodi, such as Lodi High, Millswood Middleschool, and Larson Elementary, are nearing or above capacity.

[19] California Department of Education. Education Demographics Unit. District Enrollment by Grade, 2008-2009.

FIGURE 3-4: PUBLIC SERVICES

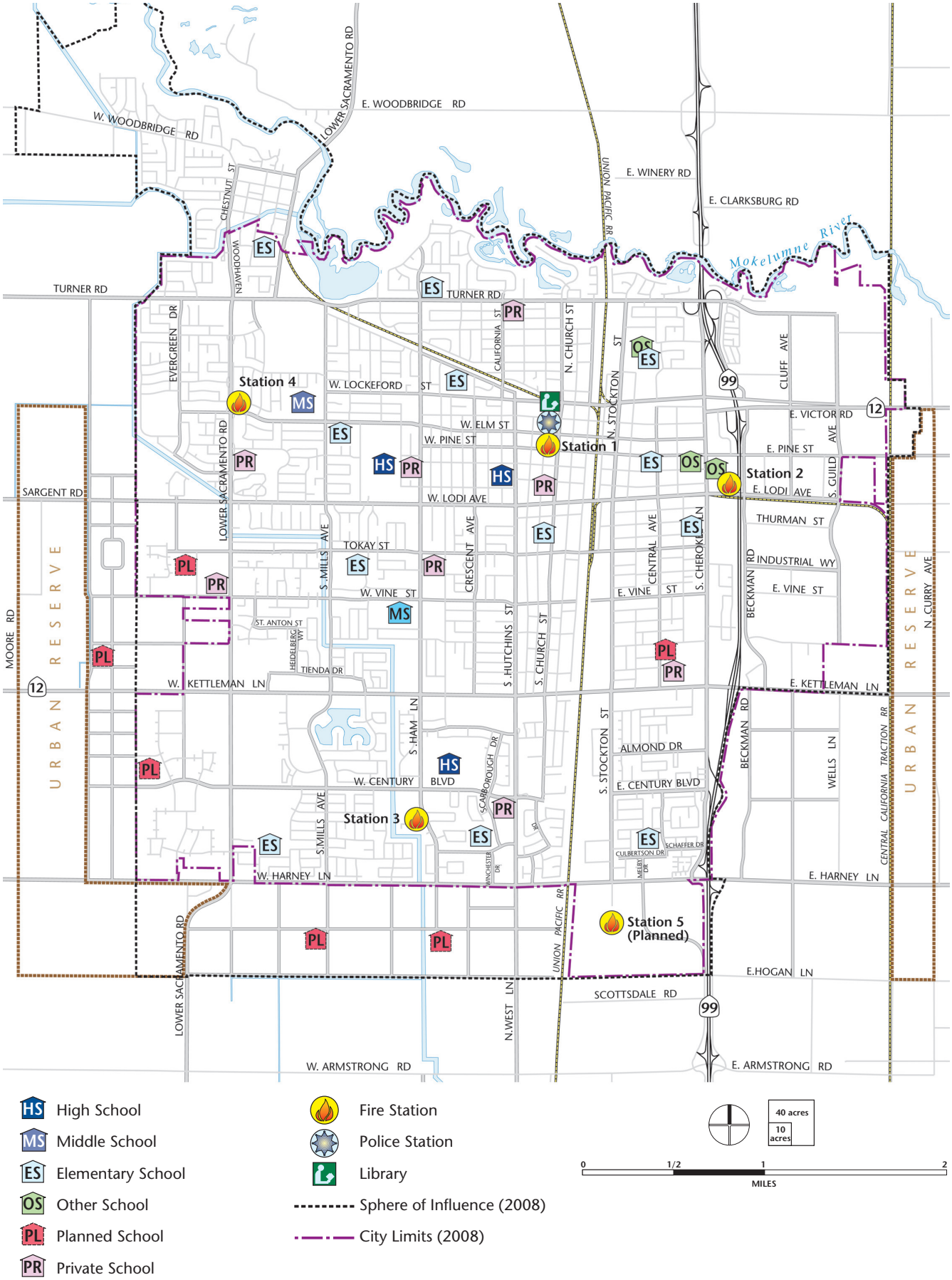


TABLE 3–7: LODI UNIFIED SCHOOL DISTRICT SCHOOLS LOCATED IN THE CITY OF LODI

NAME	ADDRESS	GRADES	ENROLLMENT CAPACITY[1]	2007-2008 ENROLLMENT
Elementary Schools				
Beckman Elementary	2201 Scarborough Dr.	K-6	632	639
Borchardt Elementary	375 Culbertson Dr.	K-6	739	790
Heritage Primary Elementary	509 E. Eden St.	K-3	472	468
Lakewood Elementary	1100 North Ham Ln	K-6	384	382
Larson Elementary	2375 Giannoni Wy.	K-6	676	683
Lawrence Elementary	721 Calaveras St.	K-6	519	549
Needham Elementary	420 S. Pleasant St.	4-6	337	310
Nichols (Leroy) Elementary	1301 South Crescent Ave.	K-6	393	415
Reese Elementary	1800 W. Elm St.	K-6	638	643
Serna Charter	339 E. Oak St	K-8	282	289
Vinewood Elementary	1600 W. Tokay St.	K-6	558	550
Washington Elementary	831 W. Lockeford St.	K-6	525	479
Middle Schools				
Lodi Middle	945 South Ham Ln.	7-8	872	913
Millswood Middle	233 N. Mills Ave.	7-8	766	772
High Schools				
Lodi High	3 S. Pacific Ave	9-12	2,230	2,146
Tokay High	1111 W. Century Blvd.	9-12	2,143	1,995
Liberty High	660 W. Walnut St.	9-12	140	151
Other				
Lodi Adult School	542 E. Pine St.	Adult		
Independence School	660 W. Walnut St.	K-12	612	403
Lincoln Tech Academy	53 S. Cherokee Ln.	11-12		
School Readiness/ Preschool and Services Children's Center	701 Calaveras St.	PK		
Total			**12,918**	**12,577**

1. Capacity as of December, 2006.

Source: LUSD Facilities Master Plan; California Department of Education, 2007-2008 school year.

Proposed Schools in Plan

As Lodi grows, additional school facilities will be required to meet new student demand. Demographic projections for San Joaquin County suggest slight increases in the proportion of young and old people between 2000 and 2030, and a slight decline in the proportion of the middle-age population.[20] Overall, demographic changes are expected to be fairly moderate in the County, though changes in actual numbers are large, indicating substantial population growth in the county. Age projections are shown in Table 3-8.

Given that projections indicate a relatively constant proportion of school-age residents through 2030, student generation rates used to determine future school demand are based on the 2006 LUSD School Facilities Master Plan. These rates are:

- 0.25 elementary students per home;
- 0.7 middle school students per home; and
- 0.14 high school students per home.

Student projections by planning phase and the required land for schools to meet the projected demand are shown in Table 3-9.

Several new schools are identified in the General Plan. Within the existing city two schools will be included as part of the approved development projects on the western edge of the city. In addition, a placeholder has been identified for a new elementary school on the eastside of Lodi near the intersection of Central Avenue and Poplar Street; the ultimate location and size will be determined by the district (due to limited information, this school is not included in the acreage estimates in Table 3-8). This school would relieve some of the existing elementary school capacity issues.

Locations for new schools in the planned growth areas include two schools south of Harney Lane to accommodate new growth in that area during Phase 1. Both of these schools are expected to serve K-8. An additional school will be located in the northwest to accommodate

[20] State of California, Department of Finance, Population Projections for California and Its Counties 2000-2050, by Age, Gender and Race/Ethnicity, Sacramento, California, July 2007.

TABLE 3–8: AGE PROJECTIONS FOR SAN JOAQUIN COUNTY

	2000		2030		2000-2030
Age	**Total**	**% of Total**	**Total**	**% of Total**	**% Change**
0-4	45,455	8	114,288	9	151
5-19	149,861	26	330,870	27	121
20-39	158,481	28	345,894	29	118
40-64	155,452	27	259,991	22	67
65+	59,834	11	154,155	13	158
Total	**569,083**	**100**	**1,205,198**	**100**	**112**

Source: California Department of Finance, 2007

TABLE 3–9: PROJECTED NEW STUDENTS BETWEEN 2008 AND 2030

NEW HOUSING UNITS BY PHASE		NEW STUDENTS (STUDENTS PER HOUSING UNIT)[1]				SCHOOL LAND NEEDED (ACRES)[2]		PROPOSED PUBLIC / QUASI PUBLIC LAND[3]
		Elem. (K-6)	**Middle (7-8)**	**High (9-12)**	**Total**	**High (9-12)**	**K-8[4]**	**Acres[5]**
Phase 1	4,400	1,100	308	616	2,000	11	15	23
Phase 2	1,900	475	133	266	900	5	–	14
Phase 3 (UR)	3,800	950	266	532	1,700	10	15	30
Approved Development	3,700	925	259	518	1,700	10	15	24
TOTAL	**13,800**	**3,450**	**966**	**1,932**	**6,300**	**35**	**46**	**91**

1. Student generation rates are from the LUSD 2006 School Facilities Master Plan. Pupils per new housing unit are: 0.25 for K-6; 0.07 for 7-8; and 14 for 9-12.
2. LUSD 2006 School Facilities Master Plan indicates school capacity at 840 students per school for K-8 and 2,200 students per school for grades 9-12. Land use required per student is assumed to be 800 square feet per stu-dent. Therefore, a K-8 school is expected to require approximately 15 acres and a 9-12 school is expected to require approximately 40 acres.
3. Proposed public and quasi-public land is expected to be primarily used for schools, though there is sufficient land proposed to accommodate other community needs as determined.
4. LUSD 2006 School Facilities Master Plan recommends that schools include K-8 rather than K-6 and 7-8 sepa-rately.
5. An additional Kindergarten through sixth grade school site is shown near Central Avenue and East Poplar Street, but is not reflected in the table as the exact site and acreage are not yet determined.

Source: Dyett & Bhatia, 2009; LUSD 2006 School Facilities Master Plan

The Lodi Public Library.

growth in the western edge of the city during Phase 2. Locations for schools in Phase 3 have not been identified. All planned schools are expected to meet the needs of approved development and to relieve any existing capacity issues. Ongoing reassessment of school needs will be required as growth and demographic patterns change over time.

Libraries

Municipal Library

The Lodi Public Library, constructed in 1978, is centrally located on West Locust Street between Pleasant and Church streets. The building is 28,260 square feet, one story, and located on a 1.5 acre site. The library facilities are generally well-maintained, though some upgrades will be necessary to conform to American Disabilities Act standards.

As of 2007, the library had holdings of approximately 150,000 books, 235 magazine subscriptions, 12 newspapers, as well as audio books, videos, music CDs, and CD-ROM media. The Lodi Public Library serves 52,000 registered borrowers, who check out approximately 340,000 items a year. The library offers a number of services and programs to assist its users, including computer services, performances, workshops and classes, and special programs for youth and non-English speaking residents. Increasingly, the library is used to access computers and the internet.

Standards and Projected Needs

Currently, Lodi provides 0.45 square foot of library space per capita. The 2002 Lodi Public Library Facilities Management Plan establishes guidelines that would raise the per capita amount of library space to 0.84 square foot. Given the reasonable development potential population of 99,500, the proposed Plan would require a total of 83,600 square feet of library space to satisfy this goal. However, this need should be monitored in light of continued trends toward digital storage and distribution of books and other media.

Given Lodi's compact form, a central main library branch is appropriate, though additional neighborhood branches may be desirable. Locations for new library branches would include mixed-use centers and the Eastside, which currently has poor access to the existing library. Additionally, while most of the Public/Quasi-Public designation in the General Plan is attributed to new schools, an estimated 10 acres are assumed to be used for other public uses, such as library branches. Sites identified in the 2002 Lodi Public Library Facilities Management Plan should also be considered.

The Lodi Police Department.

Fire and Police Facilities

The Lodi Fire Department covers the city from four fire stations: Fire Station 1 is located in the downtown area, Fire Station 2 is located on the eastside of Lodi, Fire Station 3 is located in the southwest section of town, and Station 4 is in the northwest section of town. Station 4 also houses the Mobile Operations Center and is used by both the Fire and Police departments. A fifth Fire Station location has been reserved as part of the approved Reynolds Ranch project located south of Harney Lane and west of Highway 99. In addition, the City of Lodi Fire Department participates in the CalEMA state-wide mutual aid system, which utilizes resources from municipal fire departments in order to provide fire protection throughout the State. The City also has a mutual aid agreement with the Woodbridge Fire Protection District.[21]

The Lodi Police Department serves the city in three districts—the Central District, Heritage District and Sunset District—that encompass five patrol beats. As Lodi grows, fire and police capacity will have to be regularly evaluated to ensure sufficient personnel and appropriate location of stations in order to maintain acceptable levels of service. Personnel and service are further addressed in Chapter 8: Safety.

[21] Pacific Municipal Consultants, Lodi Shopping Center Draft Environmental Impact Report, prepared for the City of Lodi, August 2004.

3.6 POLICIES

GUIDING POLICES

Please refer to Chapter 4: Community Design and Livability for additional policies regarding Lodi's urban form.

GM-G1 Ensure contiguous, paced, and orderly growth by identifying phases for development. Allow development in subsequent phases only once thresholds of reasonable development in prior phases have been achieved.

GM-G2 Provide infrastructure—including water, sewer, stormwater, and solid waste/recycling systems—that is designed and timed to be consistent with projected capacity requirements and development phasing.

GM-G3 Promote conservation of resources in order to reduce the load on existing and planned infrastructure capacity, and to preserve existing environmental resources.

GM-G4 Provide public facilities—including police and fire services, schools, and libraries commensurate with the needs of the existing and future population.

GM-G5 Support efforts to provide superior public and private educational opportunities for all segments of the population.

IMPLEMENTING POLICIES

Growth Management

Please refer to Chapter 7: Conservation for policies regarding agricultural preservation and Chapter 8: Safety for policies regarding stormwater management.

GM-P1 Define Lodi's southern boundary and establish limits on development to the south through the establishment the Armstrong Road Agricultural/Cluster Study Area. Cooperate with San Joaquin County, the San Joaquin County Local Agency Formation Commission and property owners to ensure maintenance of this area as a separator from the City of Stockton.

GM-P2 Target new growth into identified areas, extending south, west, and southeast. Ensure contiguous development by requiring development to conform to phasing described in Figure 3-1. Enforce phasing through permitting and infrastructure provision.

Development may not extend to Phase 2 until Phase 1 has reached 75% of development potential, and development may not extend to Phase 3 until Phase 2 has reached 75% of development potential.

GM-P3 Use the Growth Management Allocation Ordinance as a mechanism to even out the pace, diversity, and direction of growth. Update the Growth Management Allocation Ordinance to reflect phasing and desired housing mix.

Because unused allocations carry over, as of 2007, 3,268 additional permits were available. Therefore, the Growth Management Allocation Ordinance will not restrict growth, but simply even out any market extremes.

GM-P4 Update allocation of units by density to ensure that development density occurs as recommended in Chapter 2: Land Use. For instance, approved permits should be allocated to provide 45.4% of permits for low density, 27.3% medium density, and 27.3% high density/ mixed use housing during phase 1. This represents a shift towards slightly more medium and high density housing in Lodi.

GM-P5 Update impact fee system to balance the need to sufficiently fund needed facilities and services without penalizing multifamily housing or infill development.

GM-P6 Annex areas outside the existing sphere of influence to conform with development needs for Phase 1, Phase 2, and Phase 3. Subsequent phases shall be annexed as current phases reach development thresholds.

Infrastructure

GM-P7 Ensure that public facilities and infrastructure—including water supply, sewer, and stormwater facilities—are designed to meet projected capacity requirements to avoid the need for future replacement and upsizing, pursuant to the General Plan and relevant master planning.

GM-P8 Coordinate extension of sewer service, water service, and stormwater facilities into new growth areas concurrent with development phasing. Decline requests for extension of water and sewer lines beyond the city limit prior to the relevant development phase and approve development plans and water system extension only when a dependable and adequate water supply for the development is assured.

GM-P9 Develop new facilities and rehabilitate existing facilities as needed to serve existing development and expected development, in accordance with the General Plan and relevant infrastructure master plans.

GM-P10 Prepare master plan documents as necessary during the planning period to address the infrastructure needs of existing and projected growth, and to determine appropriate infrastructure provision for each phase. Existing master plan documents should be used until new master plans are developed, and updates should occur as follows:

- A sanitary sewer system master plan should be undertaken soon after General Plan adoption. In particular, this master plan should address how to best provide sewer service for the growth on the east side of the city and for infill development, and to determine if additional wastewater flows will need to be diverted into the proposed South Wastewater Trunk Line.
- A citywide stormwater master plan should be prepared soon after General Plan adoption to confirm or revise existing planning studies.
- A White Slough Water Pollution Control Facility master plan should be completed during the early stages of Phase 1, most likely in 2013 or 2014.
- A recycled water master plan was prepared in May 2008 and is current as of 2009. It may be appropriate to update this document when the next WSWPCF master plan is prepared, in 2013 or 2014, to evaluate the feasibility of constructing a scalping plant to provide recycled water for use within the city.
- A potable water supply and distribution master plan is not urgently needed, as of 2009. Future planning should be completed as necessary.
- The Urban Water Management Plan should be updated on a five year basis in compliance with State of California mandated requirements. Future plans should be developed in 2010, 2015, 2020, 2025, and 2030.

Water Conservation

GM-P11 Require water conservation in both City operations and private development to minimize the need for the development of new water sources and facilities. To the extent practicable, promote water conservation and reduced water demand by:

- Requiring the installation of non-potable water infrastructure for irrigation of landscaped areas over one acre of new landscape acreage, where feasible. Conditions of approval shall require connection and use of nonpotable water supplies when available at the site.
- Encouraging water-conserving landscaping, including the use of drought-tolerant and native plants, xeriscaping, use of evapotranspiration water systems, and other conservation measures.
- Encouraging retrofitting of existing development with water-efficient plumbing fixtures, such as ultra low-flow toilets, waterless urinals, low-flow sinks and showerheads, and water-efficient dishwashers and washing machines.

GM-P12 Support on-site gray water and rainwater harvesting systems for households and businesses.

The City should develop a strategy for the legal, effective, and safe implementation of gray water and rainwater harvesting systems, including amendment of the Building Code as appropriate to permit gray water and provision of technical assistance and educational programming to help residents implement gray water and rainwater harvesting strategies.

GM-P13 Continue to implement the Water Meter Retrofit Program (consistent with State requirements as indicated in AB 2572), whereby all existing non-metered connections would be retrofitted with a water meter. This program is expected to be completed in 2013.

GM-P14 Require water meters in all new and rehabilitated development.

GM-P15 Monitor water usage and conservation rates due to installed meters, to ensure water demand assumptions are correct. If actual usage and conservation rates vary from planning assumptions, reassess requirements for future water resources.

Potable Water Supply

GM-P16 Cooperate with Northeastern San Joaquin County Groundwater Banking Authority, other member water agencies, and the Woodbridge Irrigation District to retain surface water rights and groundwater supply.

Recycled Water

GM-P17 Explore a program of complete wastewater reclamation and reuse at the White Slough Water Pollution Control Facility.

GM-P18 Encourage the use of tertiary treated wastewater for irrigation of agricultural lands, large landscaped areas, and recreation/open space areas within close proximity to the White Slough Water Pollution Control Facility.

Solid Waste Management and Recycling

GM-P19 Continue to improve waste diversion rates through recycling and resource conservation measures. Support waste reduction and recycling programs through public education.

Public Facilities

Please refer to Chapter 8: Safety for policies regarding fire and police staffing and emergency services.

GM-P20 Locate additional schools to fill any existing gaps in capacity and meet the needs of existing and new residents. Provide needed facilities concurrent with phased development.

GM-P21 Locate any additional library branches to ensure all neighborhoods are served, in particular in the Eastside neighborhood and in proposed mixed use centers.

GM-P22 Develop a Fire and Police Services Master Plan that would establish thresholds and requirements for fire and police facilities, staffing, and building features. The Fire and Police Services Master Plan should consider the following:

- Typical nature and type of calls for service;
- Fire prevention and mitigation measures, such as sprinklers, fire retardant materials, and alarms;
- Appropriate measures for determining adequate levels of service; and
- Locations and requirements for additional facilities and staffing.

GM-P23 Maintain sufficient fire and police personnel and facilities to ensure maintenance of acceptable levels of service. Provide needed facilities concurrent with phased development.