

CITY OF MODESTO

2015 Urban Growth Policy Review

5/12/15

Community and Economic Development Department
Planning Division

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CITY OF MODESTO 2015 URBAN GROWTH POLICY REVIEW

I. INTRODUCTION

Chapter 2 of the Modesto Urban Area General Plan, “Community Growth Strategy,” calls for a periodic review of the City’s growth trends. As noted therein, this periodic review should provide for the identification of potential new growth areas to be served with urban infrastructure during the ensuing five (5) years. In general, the maintenance of a five-year supply of available vacant and agricultural land served with urban infrastructure is desirable, and urban growth should be directed to areas where City services are provided.

City Council policy provides for conducting the Urban Growth Policy Review (Review) process, on an as-needed basis, in odd-numbered years. The previous Review was prepared and considered by the City Council in July 2009. The City Council directed staff to forego preparing an Urban Growth Policy Review in both 2011 and 2013, due to the general lack of development activity during the Great Recession and also to allow staff to devote time to higher-priority work efforts.

The Review process results in documenting Modesto’s inventory of vacant residential, commercial and industrial land, in order to assist the City Council in determining the timing and direction of growth to those areas that can most feasibly be served with urban infrastructure. As a result of the 2015 Review, the City Council may determine which, if any, sewer trunk extensions as defined by the Modesto Citizens Advisory Growth Act of 1995 (Measure M), are needed, and schedule those areas for a public advisory election in November. Pursuant to the Policy to implement the Growth Management Act of 1995, an advisory election must be held before the City Council approves, authorizes or appropriates funds for sewer improvements. The primary purpose of the Review is to assure that there is an adequate inventory of vacant land served with urban infrastructure to accommodate anticipated growth and development during the next five (5) years.

II. VACANT LAND INVENTORY

The current Vacant Land Inventory (VLI) includes vacant land and underdeveloped sites within the city limits that are feasibly available for development. The VLI methodology is based on that used for the 2009 Review. The two main types of land identified in the inventory are “vacant” and “underdeveloped.” Vacant land consists of land that is entirely undeveloped, land where the existing development is not expected to remain, or where the existing development occupies only a small portion of the property. Underdeveloped land consists of partially-developed parcels with sufficient undeveloped area that could accommodate additional development. For purposes of calculating a realistic and conservative VLI total, the underdeveloped acreage subtotals are reduced by 50%.

In addition to the underdeveloped acreage discount of 50%, the VLI acreage subtotals are reduced by ten percent (10%) on the basis that not all vacant land is available or appropriate for development. Obstacles to development of certain properties include poor accessibility, insufficient parcel size / shape and land owner preference. The January 1, 2015, VLI is summarized in **Table 1**, below.

Table 1 – Vacant Land Inventory Acreage within Incorporated Area as of 1/1/15

Land Use	Vacant	Underdeveloped	Subtotal	10% Reduction	Total
Residential	860	$305 \times 0.5 = 152.5$	1,012.5	105	910
Commercial	185	$70 \times 0.5 = 35$	220	20	200
Industrial / BP	420	$435 \times 0.5 = 217.5$	637.5	65	570
Totals	1,465	$810 \times 0.5 = 405$	1,870	190	1,680

A. Residential Inventory

The residential VLI totals approximately 1,012 acres (see **Table 1**), within the city limits, after the 50% reduction is applied to the underdeveloped acreage. Applying the 10% VLI reduction described above, the adjusted total is 910 acres. **Figure 1** identifies the distribution of vacant residential sites within the incorporated area.

B. Industrial / Business Park Inventory

The VLI identifies approximately 637.5 acres (after the 50% reduction for underdeveloped land is applied) of land designated for industrial and business park development within the incorporated area. The inventory consists of approximately 420 acres of vacant industrial property, and another 435 acres of underdeveloped property (**Table 1**). The standard 10% reduction factor is applied, which yields a total of 570 acres. **Figure 2** identifies the distribution of vacant industrial sites within the incorporated area.

The conclusion reached as a result of the 2009 Review is that the City of Modesto needs more business park and industrial land inventory that is close to State Highway 99, and that is comprised of larger tracts of land. Toward those ends, staff continues work on the General Plan Amendment project that will accomplish the goals of both increasing the non-residential vacant land inventory, and locating that new inventory in the most strategic locations (e.g. along and near major transportation corridors). The Kiernan Business Park area is perhaps the best example of new future vacant land inventory that can fill this void, because it is near two state highways (SR99 and SR219); more vacant land like this is needed to meet the City's economic development needs.

C. Commercial Inventory

The VLI identifies a total of 220 acres designated for commercial land use (**Table 1**). Underdeveloped commercial sites comprise 70 acres – which has been discounted by half as described above – of this total. Again, the standard 10% reduction factor is applied, which yields a total of 200 acres. **Figure 3** identifies the distribution of vacant commercial sites within the City.

The conclusion reached in 2009 is that the City of Modesto needs more Regional Commercial land on the east side of Modesto. As a result, staff continues work on the General Plan Amendment project that will accomplish the goals of both increasing the non-residential vacant land inventory, and locating that new inventory in the most strategic locations.

III. LAND ABSORPTION ANALYSIS

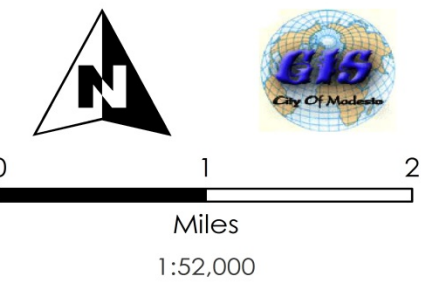
As indicated above, the Review documents the inventory of vacant land to assure an adequate five-year minimum supply of land available for anticipated near-term growth and development. The projected market absorption rate for residential land is intended to answer the question of whether or not the City has a five-year supply of vacant residential land. Tables 2-4, below, indicate that the City does have a five-year supply of vacant residential land.

The City has placed a high priority on expanding its economic base and creating new jobs. In an effort to address economic development in the context of the 2009 Review, staff met with local commercial real estate professionals for the purpose of identifying the best potential sites for commercial and industrial / business park development. Toward those ends, staff continues work on the General Plan Amendment project that will accomplish the goals of both increasing the non-residential vacant land inventory, and locating that new inventory in the most strategic locations (e.g. along / near major transportation corridors, and toward the east side of the City).



Figure 1
Total Vacant Residential Inventory within the Incorporated Area

- LEGEND
- Vacant - 790 Ac.
 - Mixed Uses - 25 Ac.
 - Underdeveloped - 280 Ac.
 - Tentative Maps - 70 Ac.
 - Existing Sewer Trunks
 - ⋯ Future Sewer Trunks
 - Streets
 - ▭ Comprehensive Planning Districts (CPD)
 - ▭ Modesto Incorporated Area
 - ▭ Modesto Sphere of Influence



UGR-15-001 EXH 2014 Figure 1 Map DRAFT 1-6-15.mxd

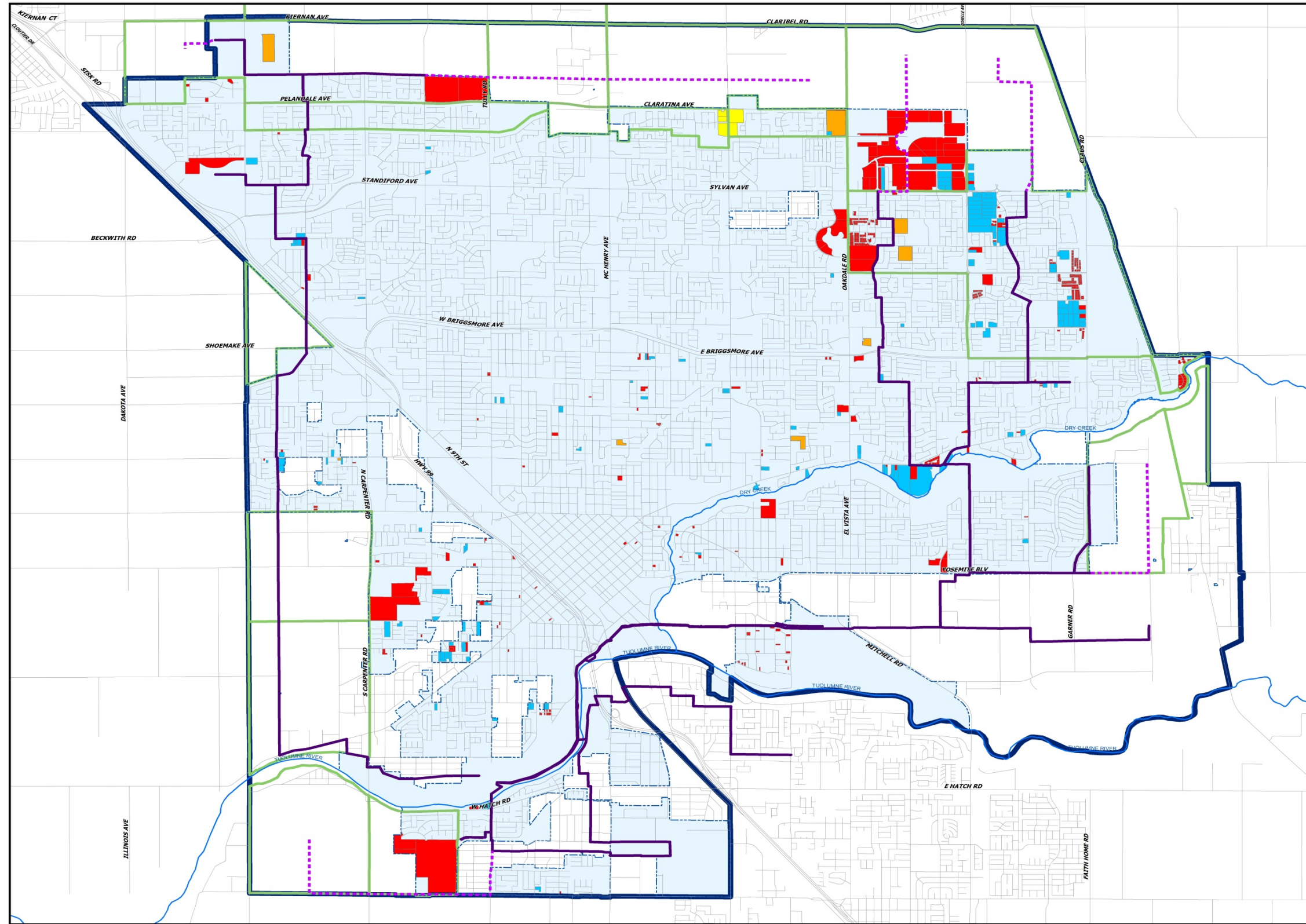




Figure 2

Total Vacant Business Park/Industrial Inventory within the Incorporated Area

LEGEND

- Vacant - 420 Ac.
- Underdeveloped - 435 Ac.
- Existing Sewer Trunks
- Future Sewer Trunks
- Streets
- Modesto Incorporated Area
- Modesto Sphere of Influence



UGR-15-001 EXH 2014 Figure 2 Map DRAFT 1-6-15.mxd

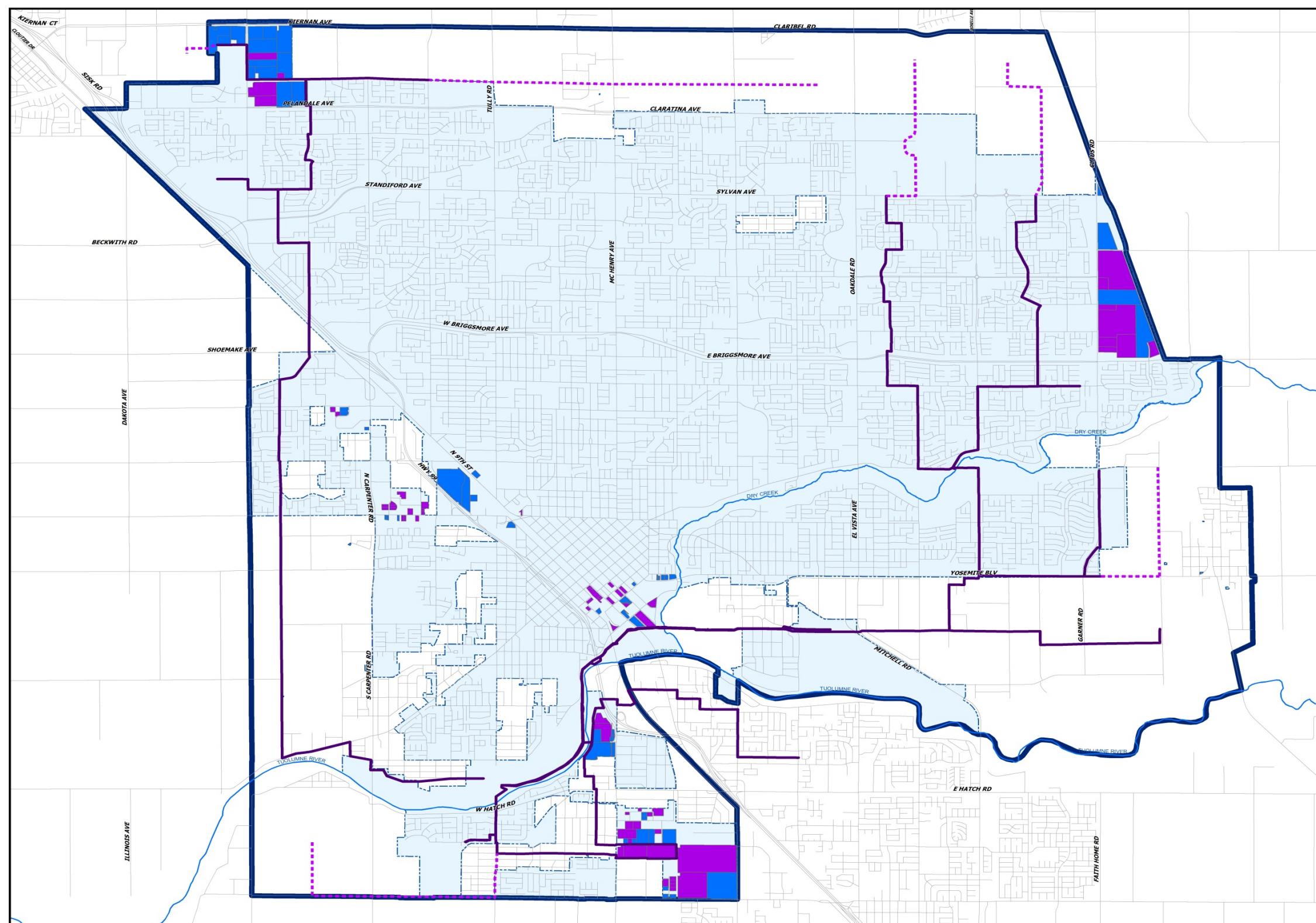


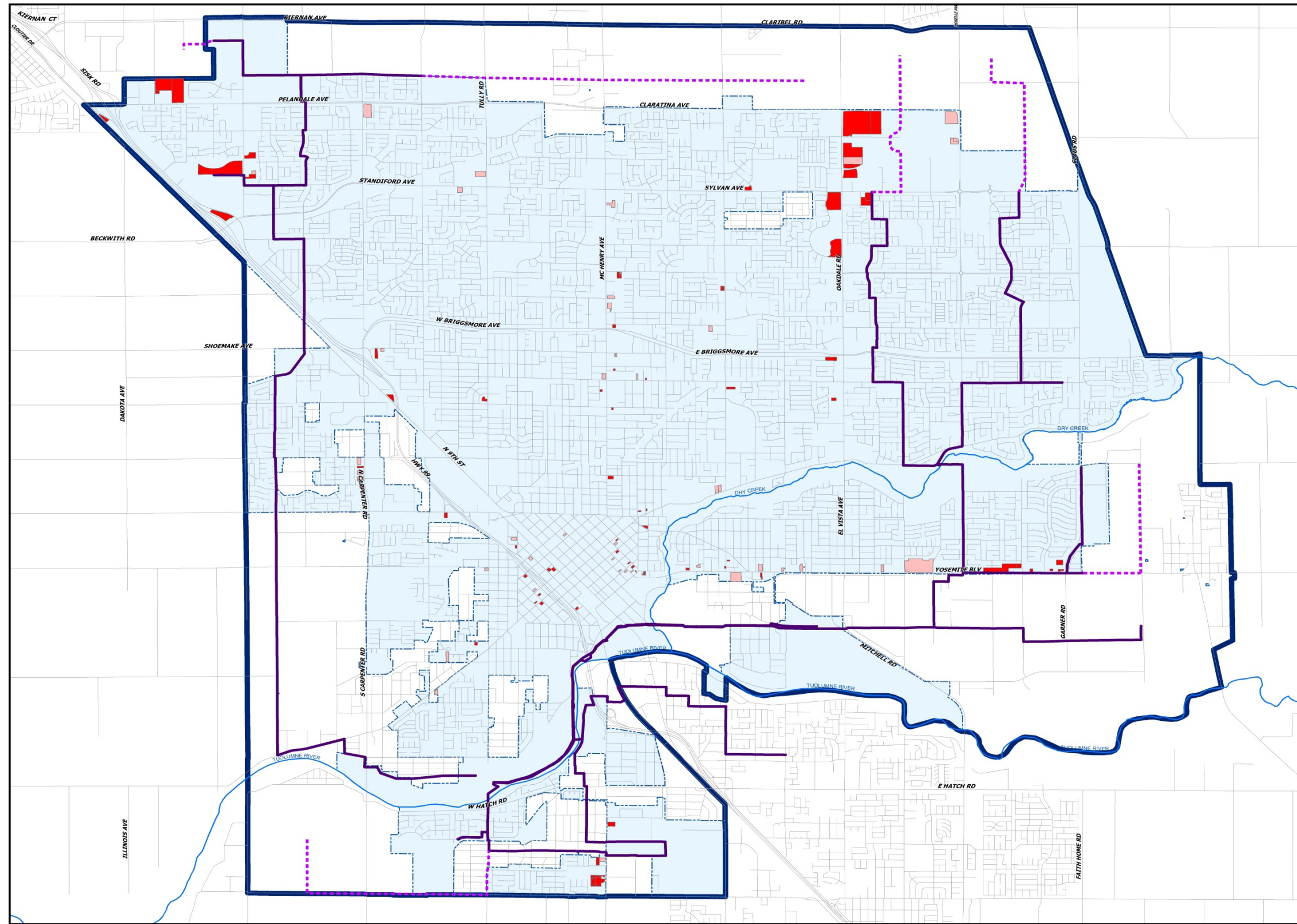


Figure 3

Total Vacant Commercial Inventory within the Incorporated Area

LEGEND

- Vacant - 185 Ac.
- Underdeveloped - 70 Ac.
- Existing Sewer Trunks
- Future Sewer Trunks
- Streets
- Modesto Incorporated Area
- Modesto Sphere of Influence



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Miles
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UGR-15-001 EXH 2014 Figure 3 Map DRAFT 1-7-15.mxd

A. Residential Land Absorption

The vacant residential land absorption rate can be derived from an estimate based on average historical building activity. The average annual residential building permit count for the 30-year period from 1985 to 2014 is approximately 911 new units. The historical rate of residential land absorption has been used in past Reviews but may not be particularly applicable at this time because of the poor economic conditions in recent years. Following completion of this project, the next opportunity to assess a growth rate projection will be in preparing the 2017 Review – just two years from now.

The *San Joaquin Valley Demographic Forecasts 2010 to 2050*, dated March 27, 2012, which was prepared for the Fresno Council of Governments by The Planning Center / DC&E, identifies an approximate 1.3% long-term growth rate for the region in general and for Stanislaus County in particular. A 1.3% growth rate was also used to forecast regional growth in StanCOG’s 2014 Regional Transportation Plan and related Sustainable Communities Strategy. Table 2a, below, reflects the year-by-year residential development scenario associated with 1.3% growth in 2022.

The assumed new residential unit count for each year is converted into acres absorbed based on the density factor of 6.6 units per acre established by the General Plan (see **Tables 2a – 2c**, Column 3, below). Column 4 in **Tables 2a – 2c** starts with actual residential inventory as of 1/1/15 with 1,050 acres. The running total of actual residential inventory in Column 4 is determined by subtracting the estimated yearly absorption figure provided in Column 3.

Table 2a – Impact of Annual Acreage Demand on Residential Inventory (1.3% @ 2022)

Calendar Year	Estimated Units Developed (Building Permits Issued)	Estimated Acres Developed	Running Total of Acreage Inventory
Column 1	Column 2	Column 3	Column 4
2014	58	10	910
2015 – Year 1 (0.25%)	200	30	880
2016 – Year 2 (0.33%)	250	40	840
2017 – Year 3 (0.40%)	300	50	790
2018 – Year 4 (0.50%)	400	60	730
2019 – Year 5 (0.72%)	550	85	645
2020 – Year 6 (0.90%)	700	110	535
2021 – Year 7 (1.10%)	850	130	405
2022 – Year 8 (1.30%)	1,000	150	255

Information provided to the City in 2014 by the economic forecasting firm of Management Partners, assumes that Modesto’s growth rate will gradually rise to approximately 0.5% from 2015 through 2022. This relatively slow growth rate may be more realistic than the assumed growth rate applied in the 2009 Review (and perhaps also more realistic than the 1.3% rate described above), which in hindsight was much too high. Table 2b, below, reflects the year-specific residential development scenario associated with 0.5% growth in 2022.

Table 2b – Impact of Annual Acreage Demand on Residential Inventory (0.5% @ 2022)

Calendar Year	Estimated Units Developed (Building Permits Issued)	Estimated Acres Developed	Running Total of Acreage Inventory
Column 1	Column 2	Column 3	Column 4
2014	58	10	910
2015 – Year 1 (0.13%)	100	15	895
2016 – Year 2 (0.17%)	125	20	875
2017 – Year 3 (0.20%)	150	25	850
2018 – Year 4 (0.26%)	200	30	820
2019 – Year 5 (0.33%)	250	40	780
2020 – Year 6 (0.39%)	300	50	730
2021 – Year 7 (0.45%)	350	55	675
2022 – Year 8 (0.50%)	400	60	615

A reasonable near-term residential growth forecast assessment, with the very slow growth experienced in recent years as a backdrop, could be that Modesto's growth rate will climb slowly over the coming years toward 1.0 percent – although time will tell whether it will ever rise significantly higher than that. A 2022 0.9% growth rate, which is the mid-point between the two scenarios described in Tables 2a and 2b, above, is shown in Table 2c, below.

Table 2c – Impact of Annual Acreage Demand on Residential Inventory (0.9% @ 2022)

Calendar Year	Estimated Units Developed (Building Permits Issued)	Estimated Acres Developed	Running Total of Acreage Inventory
Column 1	Column 2	Column 3	Column 4
2014	58	10	910
2015 – Year 1 (0.20%)	150	25	885
2016 – Year 2 (0.25%)	190	30	855
2017 – Year 3 (0.30%)	225	35	820
2018 – Year 4 (0.40%)	300	45	775
2019 – Year 5 (0.53%)	400	60	715
2020 – Year 6 (0.65%)	500	80	635
2021 – Year 7 (0.77%)	600	90	545
2022 – Year 8 (0.90%)	700	110	435

As was demonstrated via the 2009 UGR process and its conclusions, predicting future growth rates and economic development activity is not an exact science. The main point to be made in illustrating the three scenarios, above, is that the City clearly has more than five years' of vacant residential land inventory to accommodate the demand – even assuming an aggressive 1.3% growth rate.

B. Industrial and Commercial Land Absorption

The analysis for industrial and commercial property was determined through review of building permit records. During the period from 2000 through 2014, an average of approximately 13 acres of industrial land was developed per year. The VLI identifies approximately 770 acres (including the standard 10% reduction) available for Industrial and Business Park uses within the City Limits as of 1/1/15. During the same period from 2000 through 2014, an average of approximately 20 acres of commercial land was developed on a yearly basis. The VLI shows approximately 230 acres of commercial land within the City Limits at the beginning of 2015.

While the above data appears to suggest that a more-than-adequate industrial and commercial vacant land inventory exists, the 2009 Review concluded that the City of Modesto lacks: 1) sufficient land available for non-residential development that is currently served with infrastructure; and, 2) sufficient land in general that is designated for long-term non-residential growth and economic development. As a result, the City's on-going General Plan Amendment project includes proposed changes to the General Plan land use diagram. Many of the proposed changes are intended to increase – and to strategically locate – new land / acreage designated to accommodate jobs-producing business parks and enhanced economic development opportunities in general. New areas so designated on the proposed General Plan land use diagram are located along the future SR132 / Kansas Avenue alignment and along SR219 / Kiernan Avenue, near SR99.

IV. LAND FOR POTENTIAL ADDITION TO THE INVENTORY

Previous Reviews provided a summary of acreage available in the unincorporated area, within the Sphere of Influence (SOI). The 2009 Review included four areas outside of the SOI. The CPDs, and acreage available within each land use designation, are identified in **Table 3**, below, and in **Figure 4**.

Many parcels and substantial acreage within future growth areas are subject to active Williamson Act contracts. While such contracts restrict development on the affected parcel(s) for a ten-year period, the land can still be developed if a penalty is paid. Therefore, such properties should be considered as future inventory. The typical process time for a specific plan is estimated to be seven years including the Measure M advisory vote, preparation of the specific plan and the environmental document, leading to annexation. It is further estimated to take from one to three years to get building permits issued. This time frame makes the Williamson Act contract less of a constraint as landowners can file for a notice of non-renewal around the time of advisory vote consideration, and may avoid any penalty by the time a building permit is issued. Lastly, identifying the net acres becomes less reliable if there is the potential of land use changes for the purpose of economic development. Acreages are provided as gross numbers consistent with the General Plan. Areas that already have been identified in the Vacant Land Inventory have been subtracted from the total acreages of each CPD.

Table 3 – Land Area Available in Comprehensive Planning Districts (Unincorporated)

CPD	Land Use designation	Acres			Consideration for GPA Land Use Change?
		VR	RC	BP	
Beckwith / Dakota (Outside SOI)	Regional Commercial		350		No
	Business Park			690	No
College West	Business Park			230	No
Fairview 1, 2	Village Residential		170		No
Highway 132	Business Park			660	Yes
Hetch-Hetchy	Village Residential	830			Yes
	Regional Commercial		130		Yes
Kiernan / Carver (Portion Outside SOI)	Village Residential 1	500			Yes
	Regional Commercial 1		0		No
	Business Park 1			2 70	Yes
	Business Park (Outside SOI)			2 230	No
Kiernan / Carver North (Outside SOI)	Village Residential	460			Yes
	Regional Commercial		30		Yes
Kiernan / McHenry 2	Regional Commercial		100		No
	Business Park			370	No
Paradise / Carpenter	Village Residential	810			Yes
Roselle / Claribel (Excludes Tivoli)	Village Residential 1	880			Yes
	Regional Commercial 1		0		Yes
	Business Park			260	Yes
Salida (Partial; Outside SOI)	Business Park			320	No
Whitmore / Carpenter	Village Residential	690			Yes
Total		4,170	780	2,830	
1 Areas accounted for in the inventory have been subtracted					
2 Areas with completed Measure M Advisory Vote but not in City Limits					



MODESTO CALIFORNIA GENERAL PLAN PROGRAM

EXHIBIT III-1 ADOPTED LAND USE PROGRAM

LEGEND

ADOPTED GENERAL PLAN LAND USE DESIGNATIONS

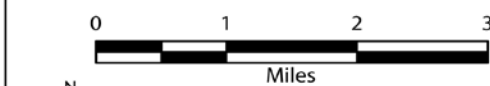
- R Residential
- VR Village Residential
- MU Mixed Use
- C Commercial
- RC Regional Commercial
- I Industrial
- BP Business Park
- OS Open Space
- RPD Redevelopment Planning District
- SCP Salida Community Plan

BOUNDARIES

- CPD COMPREHENSIVE PLANNING DISTRICTS
- MODESTO SPHERE OF INFLUENCE
- ADJACENT COMMUNITY BOUNDARY
- GENERAL PLAN BOUNDARY

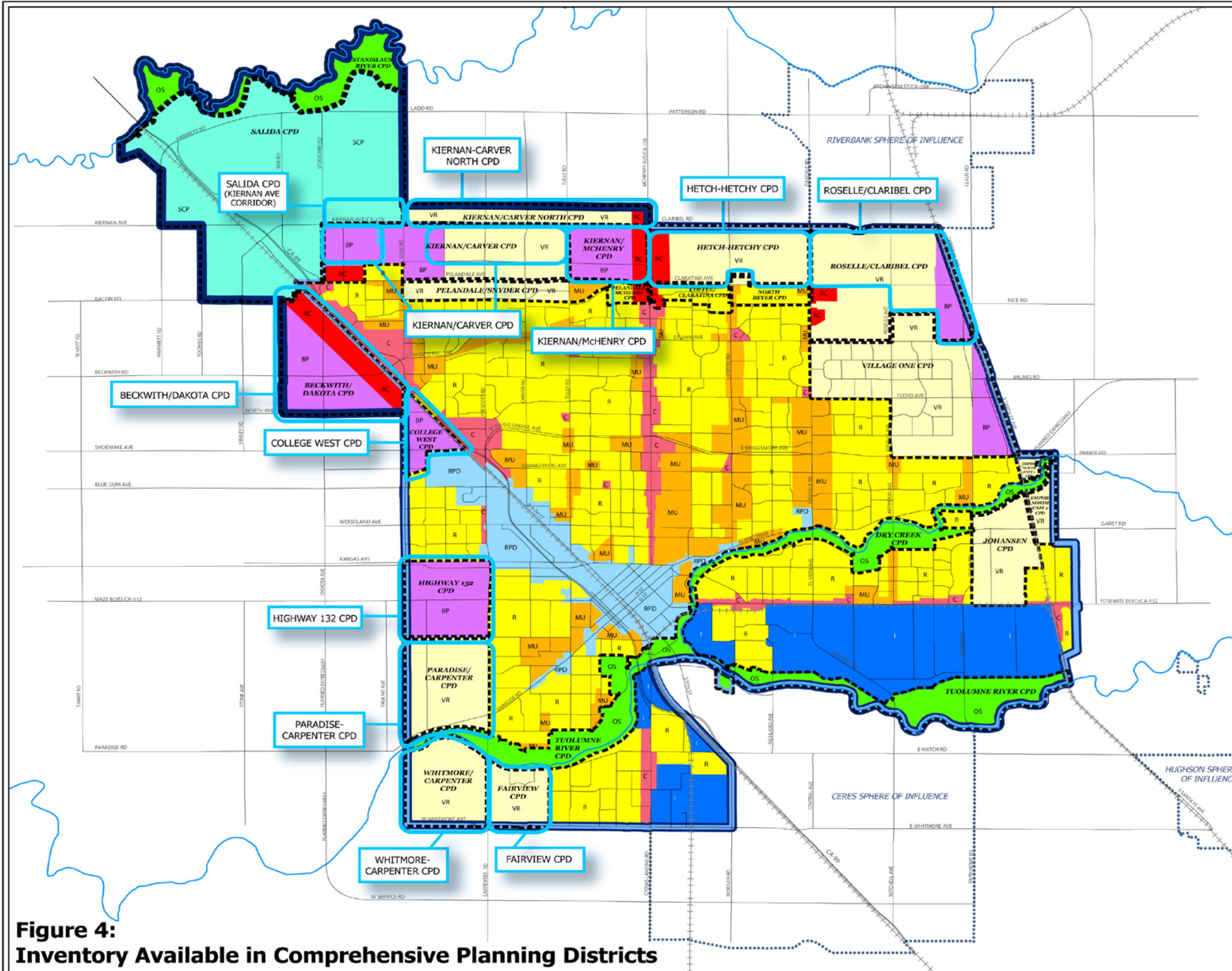
REFERENCE POINTS

- STREETS
- RIVERS
- FREEWAYS
- MAIN RAILROAD LINES



1:80,000

GP Adopted Land Use Program 2008 Fig III-L.mxd
October 23, 2008



**Figure 4:
Inventory Available in Comprehensive Planning Districts**

Table 3, above, identifies a total of 7,780 gross acres, of which 5,700 acres is within the SOI and 2,080 acres is outside of the SOI and within the General Plan area. Of the 5,700 acres within the SOI: 1,590 acres are designated “Business Park;” 400 acres are designated “Regional Commercial;” and, 3,710 acres are designated “Village Residential.” **Figure 4** reflects the locations of individual CPDs shown in **Table 3**.

Citizen’s Stamp out Sprawl Initiative

On March 14, 2014, a “Notice of Intention to Circulate Initiative Petition” referred to as the Stamp Out Sprawl (SOS) Initiative was filed with the City Clerk by Denny Jackman, Jacob Wenger and Vance Kennedy. This filing served as a request for the City to prepare a ballot title and summary as required by law. In response, the City Attorney drafted a title and summary of the proposed Initiative Petition. The proposed Citizen Initiative would establish a new General Plan policy to require a voter approval for any new non-residential development and residential development with a density below 100 units per 10 gross acres that is located outside of the boundary defined by the initiative. The policy would apply to non-residential development outside of an Urban Limit (UL) boundary, and also to residential development outside of a Residential Urban Limit (RUL) boundary. The Initiative is intended to be scheduled for the November 2015 election.

The locations of both the UL and RUL that would be established by the SOS Initiative are well outside the City Limits, and would not have any effect on the Vacant Land Inventory analyses above. However, if passed by the voters in November, the SOS Initiative would have long-term implications to future growth areas that are located outside the UL and RUL boundaries, such as the Kiernan / Carver North planning area that is located on the north side of Kiernan Avenue and outside of the proposed UL / RUL boundaries.

Planning Areas with Negative Measure M Vote

There are a number of areas that have been the subject of a negative sewer advisory vote. These areas are concentrated within the northern tier of the City’s General Plan boundary – generally along / between Kiernan and Pelandale Avenues (see Figure XX, Public Advisory Election History). While there is precedent for the City to subsequently entitle land for development following a negative vote, there is more recent precedent for the City to require a *positive* Measure M vote prior to accepting entitlement applications and processing fees. Staff is seeking direction regarding the acceptance and processing of development applications absent the positive election result.

V. UNINCORPORATED ISLAND AREAS

Currently, only nine (9) of the identified 23 unincorporated County “islands” have received a positive Measure M vote. Of these, only the Shackelford neighborhood has since been annexed to Modesto in its entirety (in limited instances, small portions of other island areas have been annexed in the last several years). The City’s adopted Policy to implement the Modesto Citizens’ Advisory Growth Management Act of 1995 (“Measure M”) requires significant preparation in advance of scheduling advisory votes for the most substantial unincorporated island areas. In accordance with said policy, prior to scheduling the most substantial infill areas for an advisory vote, City and County officials should meet to discuss tax sharing agreements and other fiscal matters – primarily those related to utilities and infrastructure system upgrades referenced above. Prior to annexation of the Shackelford neighborhood, the City and County did execute an agreement regarding infrastructure improvements and tax-sharing. Annexation occurred subsequent to the City’s acceptance of the County-funded infrastructure improvements.

Due to significant health and safety concerns associated with failing septic systems on residential properties within some of the other “island” areas, Measure M votes have occurred for the Parklawn (2010), Rouse-Colorado (2013) and Airport (2014) neighborhoods in recent years. On April 9, 2013, the City Council directed staff to prepare a comprehensive Measure M ballot measure, for all

remaining unincorporated County island areas, for the November 2015 election. The purpose of this action is to eliminate the required advisory vote as an obstacle for extension of sewer service if / when deemed necessary. However, no annexations will occur until and unless the City and County enter into an agreement similar to the Shackelford model described above. Furthermore, staff recommends that a comprehensive fiscal impact study – to analyze costs associated with City services, infrastructure operation & maintenance, etc. – be prepared prior to further annexation of unincorporated County island areas.

The following is an excerpt from the policy to implement the Modesto Citizen's Advisory Growth Management Act of 1995 (Measure M) adopted by City Council Resolution 98-411. Item 5 of the referenced Policy states as follows:

5. Sequencing of Measure M Votes for "Infill" Areas"

- a. When: the most substantial Infill Areas will not be scheduled until negotiations with the County regarding fiscal issues are complete. There needs to be significant preparation in advance of scheduling Measure M votes for Infill Areas. A successful Measure M vote may lead to public expectations that annexation will immediately follow, with corresponding expectations that existing deficient infrastructure will be upgraded. Therefore, the fiscal impacts of serving unincorporated areas may vary from area to area, irrespective of whether the City-County property tax agreement is in effect for those areas. The impacts of tax increment financing through the Redevelopment Agency should also be examined.
- b. Which Areas: The City will schedule a Comprehensive Measure "M" vote for the most substantial Infill Areas or logical groupings of such Areas. Since urban services are generally available or nearby in the Baseline Developed Area, and the "urban pattern" is fundamentally established, this approach provides significant time savings toward the ultimate annexation of all Infill Areas.
- c. Infill Areas which are not "substantial:" The City Council, at its sole discretion, may determine that certain Infill areas are not "substantial" and therefore, would not need to be dependent on negotiations with the County.

However, when considering a Measure M advisory vote for unincorporated County island areas, negotiation and agreement regarding fiscal issues is not critical. This is true because (most often) the advisory vote is simply a technical step in the process that's needed in order to address sanitation concerns associated with failing septic systems. Agreements between the City and County, regarding fiscal matters and responsibility for infrastructure improvements, should be required prior to annexation – not necessarily prior to the sewer extension advisory vote.

Appendix B provides information concerning the unincorporated County islands, including a map that also reflects whether the area has been the subject to a Measure M advisory vote. Table B-1 has been updated by City Utilities Department staff to reflect cost estimates for infrastructure improvements required to improve each respective County island area consistent with city standards.

VI. INFRASTRUCTURE CONSIDERATIONS

A. Wastewater

The existing and planned sanitary sewer infrastructure poses a potentially significant constraint on the planned growth within the City of Modesto Urban Area. The City has identified and addressed these potential issues in the 2007 Wastewater Master Plan (2007 WWMP) and WWMP Master EIR (March 2007), and updated WWMP Supplement (July 2008). These reports, prepared by Carollo Engineers, developed an overall wastewater system Capital Improvement Program (CIP) to address existing deficiencies and replacement needs. A new Wastewater Master Plan (WWMP) effort is underway which will revise the 2007 WWMP to

account for new General Plan (GP) and Sphere of Influence (SOI) boundary adjustments, zoning revisions, new growth projections, updated sewer demand information, completed CIPs to date and, will recommend new CIP's and cost estimates. Some CPDs that were outside the SOI but inside the GP boundary and were not studied in the 2007 WWMP are included in the current WWMP effort.

The projects contained within the 2007 WWMP and WWMP Supplement CIPs provide capacity to meet the demands of projected growth through build-out of the current SOI which was projected to occur in the year 2030. This buildout date will be re-evaluated with the General Plan update and current WWMP effort. The CIP's include the expansion and upgrade of both the Sutter Avenue Primary Treatment Facility (SAPTF, aka Primary Facility) and the Jennings Road Secondary Treatment Facility (JRSTF, aka Secondary Facility), improvements to the existing Primary Outfall that conveys flow from the primary facility to the secondary facility, construction of several new trunk sewers and implementation of various other sanitary sewer collection system improvements.

The City of Modesto currently provides both primary and secondary wastewater treatment. There is currently adequate primary and secondary treatment capacity. However, the City's seasonal secondary treated effluent disposal system depends on climatic conditions and river flows. The City completed a Dissolved Air Flotation (DAF) project, which corrected some existing disposal deficiencies at that time, and also completed the Phase 1 tertiary treatment project, which provided some additional year-round disposal capacity for existing system constraints at that time. However, since 2009 the City also received a new waste discharge permit with limits more restrictive than those previously indicated in the 2007 WWMP, and includes unprecedented limits for seasonal secondary effluent discharges into the San Joaquin River. Therefore, in order to meet these new discharge requirements, the City has planned to eliminate seasonal river discharges and replace with year-round discharge with tertiary treated wastewater (Phase 2) for use on irrigated lands. The Phase 2 treatment plant improvements are expected to be operational in 2015.

The Primary Outfall rehabilitation was completed in 2010. Depending on location, the existing sanitary sewer collection system, including sewer mains, trunks and lift stations, used to convey sanitary waste from areas throughout the City to the City's wastewater treatment facilities, lack sufficient capacity to meet the projected demand from new growth. In addition to capacity upgrades, there are sewer facilities within the City that may need major rehabilitation and increased redundancy and reliability, in order to accommodate new growth. The associated CIPs have been identified in the 2007 WWMP

The Kiernan-Carver North CPD and the Beckwith-Dakota CPD both are outside the existing SOI and were not included in the analysis of the 2007 WWMP and, as such, facilities to convey and treat wastewater generated by these areas have not been determined at this time on a city master plan level. However, the current WWMP effort underway will consider the proposed General Plan Amendment project.

B. Water

Water supply in the Modesto area originates from two sources; City operated wells and surface water provided by the Modesto Irrigation District (MID). City-owned wells extract groundwater and treat it as necessary to potable standards throughout the water service area. Surface water from the Modesto Reservoir is treated and piped to the City from the MID Treatment Plant. The MID Treatment Plant has been delivering surface water to the City of Modesto since its completion in 1995. With purchase of the former Del Este Water Company in the early 1990's, the City also now operates the water systems of Salida, Empire and a portion of north Ceres as well as the isolated (outlying) water systems of Hickman, Del Rio, Grayson, the City of Waterford and, three small systems within the City of Turlock. These outlying water systems are supplied only by groundwater sources.

Water availability is a critical planning issue in the City and throughout California. Prior to the MID surface water supply, the City relied entirely on groundwater resources, which had resulted in a drawing down of groundwater levels over the years. Surface water supply through the MID Treatment Plant from Modesto Reservoir has allowed for groundwater levels to recover over time. However, groundwater levels started to trend toward reduction again in 2001 due to increases in demand from growth in the City. The MID Phase 2 Treatment Plant Expansion Project (currently completing construction) is expected to be operational in 2015 and will double the surface water supply from 30 mgd to 60 mgd and to mitigate the existing increased demands on the groundwater resource. The additional surface water supply will allow the city to reduce its demand for groundwater resources, thus allowing groundwater levels to recover. However, the expected build-out demands of the city may require additional sources of water supply in order to responsibly manage the groundwater supply. The City also must continually plan and mitigate for stricter government potable water quality regulations on groundwater resources. In 2014, as a response to California's three-year drought, deliveries of Modesto's surface water supply from MID was reduced to just 18 mgd, which required Modesto to utilize more of its groundwater resources to meet peak and maximum summer demands. As of the end of 2014 it has not been determined if reduced surface water deliveries will continue for the 2015 water year (May 2015 through April 2016) and if so, what the amount of reduction will be.

The City is exploring and utilizing a variety of options to help reduce water consumption, increase water supply and increase efficiency of the water management system. Tertiary wastewater treatment (a water recycling resource potential), additional well construction, expansion of the MID Surface Water Treatment Plant (Phase 2), opportunities with the Turlock Irrigation District (TID) to participate in a surface water supply and delivery project, the on-going residential water metering installation program, replacement of aging and leaky water pipes, and conservation measures are all being pursued by the City to ensure that sufficient water resources and services are available for existing needs and future developments. Updating the Water System Master Plan (WMP), a five-year document currently underway, is one means by which the City continues to review and plan for the existing and future water infrastructure needs as the City expands to an estimated build-out which, was projected to occur in the year 2030. This buildout date will be re-evaluated with the General Plan update and current WMP effort.

Amendments to California statutes in 2002 (SB 610) imposed additional water supply planning requirements on new developments mandating that all large developments (residential and commercial) show an assured water supply prior to project approval. The City also updated its Urban Water Management Plan in 2011 (required every five years) in an effort to continually plan and manage its water resources into the future. As part of that effort, the City continually looks for alternative and innovative methods of improving water service for existing and new developments. The City also participates in two groundwater basin management associations and has adopted, in partner with those associations, two Groundwater Basin Management Plans in an effort to gain more knowledge about groundwater resources and to further efforts to more efficiently utilize and manage the groundwater supply on both a local and regional level. Another regional effort is the City's lead participation in developing an Integrated Regional Water Management Plan (IRWMP) which was completed in 2013.

Properties outside of the existing City limit and not currently served with City water may be eligible to connect to the municipal water system based on established criteria. In June of 1998, the City Council adopted Resolution No. 98-306, codifying the conditions that must be met for a property outside of the City limit to utilize Modesto water. In general, properties outside the City limit are evaluated for water service extensions based on their location relative to the Modesto Municipal Sewer District No. 1, the former Del Este service areas, and the Sphere of Influence (SOI). The policy provides that water service extensions may be approved by the City Manager on a case-by-case basis when the following conditions and criteria are met:

- 1) The development has been authorized by the appropriate land use agency (e.g. Stanislaus County, City of Waterford);
- 2) The property is within the City's service areas (as defined and implied by the Policy);
- 3) City staff has completed an analysis of supply and infrastructure and determined that it is capable and reasonable for the City to extend the service based on a plan to pay for the extension costs and the quantity of water used.

The ability of properties to meet these conditions will affect their likelihood of receiving water service from the City.

Areas outside the existing SOI for the contiguous water system such as the Kiernan-Carver North CPD and the Beckwith-Dakota CPD were not analyzed in the 2010 Water System Engineer's Report (2010 WSER) and thus, facilities and water supplies to serve these areas have not been identified. The City has initiated a Water Master Plan (WMP) effort to expand upon and update the current 2010 WSER and will re-evaluate water infrastructure needs and cost estimates to account for General Plan and SOI boundary adjustments, zoning revisions, new growth projections, updated water demand information and completed CIPs to date. Some CPDs that were not included in the 2010 WSER are included in the current WMP effort.

C. Storm Drainage

Roughly one third of the City area does not have a positive storm drainage conveyance system and relies on the use of rockwells that attempt to percolate storm water runoff directly into the ground. The use of a rockwell storm drainage system is expensive because it is highly dependent on preventative maintenance in order to continually function properly. Though there are storm water quality benefits associated with the rockwells' capturing of "first flush" storm water from a surface water runoff perspective, there are also groundwater quality concerns regarding percolated storm water runoff via these rockwells. Also, standing water that is prevalent on the surface after storms resulting from the use of a marginally effective rockwell system can have a significant detrimental effect on roadway pavement life among other concerns. While a number of repairs and improvements have been made over the years, the overall system is still deficient in its ability to drain storm water runoff and minimize localized flooding in several areas of the City. Areas of the City not served by rockwells have positive storm drainage conveyance systems (underground pipes), with discharges to the Tuolumne River, Dry Creek, terminal retention basins, and detention basins which discharge to irrigation facilities owned and operated by the Modesto Irrigation District (MID) and Turlock Irrigation District (TID). Some of these City positive storm drainage systems function well, and others require upgrades and retrofits in order to achieve the desired level of service.

In general, the existing storm drainage systems in the older parts of town have design and operational capacity constraints and the overall system is deficient in many areas (due in part to a lack of adequate stable funding available to perform necessary maintenance, repairs and capital improvements). Having a current and comprehensive Storm Drainage Master Plan (SDMP) is a critical step in identifying the improvements and funds necessary to improve and maintain the infrastructure system to meet level of service standards. The draft 2008 SDMP has been referenced in the 2015 Urban Growth Policy Review to identify the backbone infrastructure necessary to serve future watersheds within the SOI area.

Areas outside the existing SOI such as the Kiernan-Carver North CPD and the Beckwith-Dakota CPD were not analyzed in the 2008 Draft Storm Drainage Master Plan (2008 SDMP) and as such, storm drainage facilities to serve these areas have not been determined at this time on a city master plan level. The City will initiate an update in 2015 to the current 2008 SDMP and this effort will re-analyze storm drainage issues and solutions and recommend associated CIPs for the City including those for some CPDs that were not addressed in the 2008 SDMP.

2015 Urban Growth Policy Review Update Infrastructure Considerations

The following information describes existing water, wastewater, and storm drainage infrastructure systems and the additional infrastructure needed for build out of the individual Comprehensive Planning Districts (CPDs). Updates to the Water, Wastewater and Storm Drainage Master Plans are either underway or expected to commence in 2015 and as such could revise the CIPs outlined in the current documents. However, it is important to note that these master plan updates are consistent with the proposed General Plan Amendment project that is underway.

Beckwith-Dakota CPD

Wastewater:

The Beckwith-Dakota CPD (approximately 1,040 acres) is outside the existing Sphere-of-Influence (SOI). Sewer infrastructure needs have not yet been determined, as this area was not included in the 2007 WWMP. However, the current WWMP effort includes this CPD in the SOI per the proposed GPA. This CPD, by virtue of location, would likely be served by extending a new sewer trunk from the existing West Sewer Trunk system. Capital improvements to extend sewer infrastructure to this area from the existing system infrastructure will be identified in the current WWMP effort. Available pipe capacity in the West Sewer Trunk system to serve this area above and beyond already planned demands for build-out of the current SOI and General Plan would be determined with the WWMP effort currently underway and if necessary, any additional CIPs required to serve this CPD.

Storm Drainage:

There is currently no storm drainage infrastructure in the Beckwith-Dakota CPD area, nor was this area master planned as part of the 2008 SDMP. This CPD area will be included in the upcoming Storm Drainage Master Plan consistent with the proposed GPA and essential infrastructure needs such as number and size of basins, amount and sizing of major conveyance pipes and discharge locations would be determined. This CPD would need to have its own storm drainage system to serve it. The existing City storm drainage systems are not available to be extended or expanded to serve this CPD. The existing MID Lateral 7 Canal traverses the Beckwith-Dakota CPD; however, available discharge opportunities to the MID Lateral 7 Canal would need to be determined for this CPD and permitted by MID.

Water:

The City currently does not provide water service to the Beckwith-Dakota CPD. This CPD would be considered for water service as future development planning occurs. The future water infrastructure needs to serve this CPD area have not been master planned at this time. The current WMP effort will include this CPD to determine water demand and supply needs, and infrastructure requirements to serve this area.

In general, extensions of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses would be necessary. Other facilities such as a storage tank, transmission mains, and/or expansion of other City water facilities including possible connections across SR99 would need to be determined through the current WMP effort and a Specific Plan FMP effort. Infrastructure phasing needs to serve this CPD would also depend on development phasing and demands of other CPDs.

College West CPD

Wastewater:

The College West CPD would be served by the West Sewer Trunk. Since the West Sewer Trunk crosses this CPD, the 2007 Wastewater Collection System Master Plan does not identify any sewer trunk extension necessary to serve the CPD. However, like other CPDs utilizing the West Sewer Trunk, downstream improvements of the West Trunk are identified as necessary for the build out of the City which includes the West Trunk collection system tributary area. Improvements necessary for West Sewer Trunk have been outlined in the 2007 WWMP.

Storm Drainage:

Currently, the College West CPD area mostly consists of agricultural land use and there is no positive drainage serving the area. The College West CPD has been studied in the 2008 SDMP as Sub- basin 1 of Watershed B. Storm water runoff from this area would be conveyed via an extension of a box culvert under Highway 99 to Detention Basin No. 8, from where flows would be pumped into MID Lateral No. 3.

Water:

The City currently does not provide water service to this unincorporated CPD. This CPD area is currently agricultural and would be considered for water service as future development planning occurs. The future water infrastructure needs to serve the undeveloped portions of this CPD area have not been planned in detail at this time but in general would require the extension of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses. Future wells, tanks, and other water supply and distribution infrastructure as required and shown in the 2010 WSER to serve buildout of the city would be determined through the FMP/IFP process as necessary to serve the College West portion of the City's future buildout, which would be dependent upon specific land uses being planned and the timing of College West development with other CPD areas.

Fairview CPD

Wastewater:

The Fairview CPD comprises 370 acres and would be served by the Ustick Sewer Trunk (aka South Trunk). Based on a flow monitoring program for a draft master utilities plan completed November 2003, the existing flows use approximately 50% of the capacity of the 12" pipe. The study showed that approximately 100 acres of residential area could be developed in the Fairview CPD without exceeding the capacity of the existing 12" pipe. However, prior to this CPD being completely developed, the 12" pipe will become surcharged (flows exceed pipe capacity) and potential overflow problems could occur. Therefore, approximately 2,100 feet of 12" diameter pipe in Ustick Road from Imperial to Whitmore Avenue would need to be upsized to a 24" diameter (U-1 in the 2007 WWMP) to increase the capacity and to prevent future possible overflows due to future development within the Fairview and Whitmore/Carpenter CPD areas.

The 2007 Wastewater Master Plan also specifies new Ustick sub-trunks extending westward and the construction of a Whitmore/Carpenter CPD Sewer Lift Station. Details of sewer extension to serve the Fairview CPD have been outlined below:

- 1 1,445 feet of 24-inch diameter pipe in Whitmore Avenue running from Ustick Road to the proposed sewer lift station at Yuma Avenue.

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- 2 Due to the invert elevation of the existing 12-inch diameter trunk in Ustick Road and the relatively flat topography of Tributary Area 10, a new sewer lift station with a firm capacity of 3.1 mgd is needed to serve the two CPD areas. The proposed location of this sewer lift station is near the intersection of Whitmore Avenue and Yuma Avenue (LS No.62).
- 3 3,429 feet of 21-inch diameter pipe extending from the proposed sewer lift stations to Carpenter Road.

Storm Drainage:

The Fairview CPD area currently has storm drainage facilities in the northeast portion of the watershed that discharge to the Tuolumne River. The 2008 SDMP studied the Fairview CPD area as within Sub-basin 50 (northern portion) and Sub-basin 51 (southern portion). Sub-basin 50 of the Fairview CPD would consist of approximately 4,350 feet of storm drain pipe ranging from 42"–78" in diameter. Storm water runoff flows would be conveyed into Detention Basin No. 20, from which storm water would be pumped to the Tuolumne River via a proposed 30" diameter pipe. Sub-basin 51 of the Fairview CPD would consist of approximately 2,450 feet of pipe ranging from 30" to 42" in diameter. The storm water runoff flows would be conveyed into Detention Basin 21 and then would be pumped into the TID Lateral No. 1.

Water:

The City currently provides water service to the developed area of the Fairview CPD (aka Rancho Encantado subdivision). The unserved areas of this CPD (essentially undeveloped areas) would be considered for water service as future development planning occurs. The future water infrastructure needs to serve the undeveloped portions of the Fairview CPD area have been planned in some detail through the Specific Plan and FMP/IFP process for that CPD. In general, expected improvements for development would require the extension of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses. In the previous Fairview Specific Plan, Well 66 (recently brought into service), a second new well, and a second storage tank were determined as necessary to serve the buildout needs of this CPD.

Groundwater quality concerns in South Modesto present a challenge to new water supply for this CPD and therefore the 2010 WSER looked at alternatives to serve the build out demands for South Modesto. To mitigate groundwater quality issues in lieu of expensive treatment methods, Well 66 is currently operated at about half the original planned production capacity. The new WMP currently underway will re-evaluate and expand on the 2010 WSER for the City's existing and buildout needs including those for this CPD.

Hetch-Hetchy CPD

Wastewater:

Sewer service to the 960 acre Hetch-Hetchy CPD would be provided by the North Sewer Trunk Extension, which will consist of 30", 24", and 18" pipes in Bangs Avenue as defined in the 2007 WWMP. The North Trunk conveys wastewater to the West Trunk system which terminates at the Sutter Avenue Primary Treatment Facility (SAPTF).

Due to the described sewer routing, downstream improvements for the West Trunk are necessary before buildout of the West Trunk tributary system which includes the Hetch-Hetchy CPD area. Further details on the downstream improvements required for West Sewer Trunk have been outlined in the 2007 WWMP.

Since completion of the 2007 WWMP, CIP projects have been completed that have altered flow routings in the City's West Trunk. In addition, the City's proposed and alternative General Plan and SOI boundaries would also change assumptions made in the 2007 WWMP. These changes will be incorporated in the new WWMP effort.

Storm Drainage:

The 2008 SDMP studied the Hetch-Hetchy and Coffee/Claratina CPDs collectively. The Hetch-Hetchy Aqueduct divides the CPD diagonally, northeast to southwest. Sub-basins 92 and 93 are on the north side of the Aqueduct and Sub-basin 87 is on the south side. Sub-basins 92 and 93 would consist of approximately 12,100 LF of 30"-66" diameter pipes. These two sub-basins would contain runoff in their respective future detention basins (No. 14 and No. 15). Storm water runoff from future developments in these areas are planned to eventually discharge into MID Lateral No. 6. Sub-basin 87 would consist of approximately 8,500 LF of pipe with diameter ranging from 30" to 66". Storm water runoff from future development would be detained in proposed future Detention Basin No. 16, and then be routed into the future Detention Basin No. 15. Eventually, storm water from this sub-basin is planned to discharge into MID Lateral No. 6.

Water:

With the exception of some existing developed areas along the east side of McHenry Avenue and a community church on Claratina Avenue, the City does not provide water service to the Hetch-Hetchy CPD. The City does have an agreement (North McHenry Corridor Area Tax Sharing Agreement) in place with Stanislaus County to serve development within the agreement area. The Agreement area spans both sides of McHenry Avenue, the east side being within the Hetch-Hetchy CPD. Water service for future development within this area falls under the provisions of the Agreement, which are not discussed here, and essentially state that the City will provide water service within the limits that available supply and distribution infrastructure can provide.

The remaining area of the CPD outside the Agreement area is undeveloped and not currently served with city water and would be considered for water service as future development planning occurs. The future water infrastructure needs to serve this CPD area have generally been planned in the 2010 WSER and would require the extension of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses. Future wells, tanks and other supply and distribution infrastructure as required and shown in the 2010 WSER to serve buildout of the City would be defined in more detail through the Specific Plan and FMP/IFP process as necessary to serve future development in the Hetch-Hetchy CPD.

Highway 132 CPD

Wastewater:

The 660-acre Highway 132 CPD would be served by the West Sewer Trunk. As described in the 2007 WWMP, the extension to serve the Highway 132 CPD would comprise of approximately 4,150 feet of 15" diameter pipe (W-4) in Kansas Avenue, from West of Carpenter Road to Mercy Avenue. In addition, a 15" diameter pipe (W-5) would be extended in California Avenue, from Ohio Avenue to Grimes Avenue. The Highway 132 CPD and Paradise/Carpenter CPD would also share approximately 2,400 feet of 15" diameter pipe extending from east of Ohio Avenue to Grimes Avenue (W-8). The new WWMP underway will re-evaluate this CPD based on proposed and alternative General Plan and SOI boundaries in regard to the recommended service needs and associated CIPs.

The existing developed residential County neighborhood located south of Elm Avenue and west of Carpenter Road is not currently served by the City sewer system. Future consideration of serving this developed area with sewer by the City would be addressed during the development of a specific plan for the Highway 132 CPD or as part of any future annexation of this area or through other established City policies for extending sewer service to existing developed areas. However, upgrading a septic system to a positive gravity system would result in additional and as yet undetermined costs for installing new piping system infrastructure and connection to the existing City sewer system.

Storm Drainage:

The Highway 132 CPD was generally studied in the 2008 SDMP, and therefore, detailed information regarding specific storm drainage infrastructure was not developed. The Highway 132 CPD contains Sub-basin 23 (per the 2008 SDMP), which will contain approximately 3,600 LF of 66" diameter pipe and roughly 2,200 LF of open channel extension. Storm water runoff flows would be detained in proposed Detention Basin No. 6 and then pumped into MID Lateral No. 4. Apart from Sub-basin 23, the Highway 132 CPD is also to share storm drainage infrastructure with the Paradise-Carpenter CPD in Sub-basin 25. A summary of sub-basin 25 has been provided in the Paradise-Carpenter CPD section.

Water:

The City currently does not provide water service to the Highway 132 CPD with the exception of the Elm West Neighborhood. The non-served areas if this CPD would be considered for water service as future development planning occurs. The future water infrastructure needs to serve the undeveloped portions of this CPD area have not been planned in detail at this time but in general would require the extension of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses. The 4 MG West Water Storage Tank serving City-wide storage needs for this area of the City is located off of Elm Avenue just west of Rosemore Avenue. Future wells and water supply / distribution infrastructure as required and shown in the 2010 WSER to serve build-out of the City would be further defined through the Specific Plan/FMP/IFP process as necessary to serve the undeveloped areas of the Highway 132 CPD.

Johansen and Empire North CPDs

Wastewater:

The 2007 WWMP does not propose any master planned sewer extensions to serve the Johansen and Empire North CPDs. These CPDs would be served by a sewer main extension from the 33" diameter Yosemite Blvd. sewer trunk at its current terminus at Claus Road to Frazine Road. A new sewer main northward in Frazine Road would also be required to serve the Empire North CPD. The required pipe sizes to serve this CPD are dependent upon various factors, including the buildout demands of the CPD and have not yet been determined. Pipe sizes and other infrastructure required to serve this CPD and would be further defined through the Specific Plan/FMP/IFP process.

Storm Drainage:

There is currently no storm drainage infrastructure in the Johansen and Empire North CPDs area. Based on the 2008 SDMP, these CPDs have two watershed areas consisting of a total of five sub-basins. The Johansen area (Watershed O) includes Sub-basins 30, 96, and 97 and the Empire North area (Watershed L) includes Sub-basins 94 and 95. Watersheds O and L are separated by the BNSF Railroad Tracks.

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Approximately 7,700 feet of 30"-66" trunk lines are proposed for Sub-basins 30 and 96 to route storm water runoff to a proposed Detention Basin 22 within the Johansen area. Storm water would then be pumped into the existing Encina Storm Drain pipe which has a discharge to Dry Creek. Sub-basin 97 would drain into proposed Detention Basin No. 11 via approximately 1,400 feet of 36"-48" diameter pipes and a proposed discharge to Dry Creek.

The 2008 SDMP does not specifically include proposed storm drainage facilities within Sub-basins 94 and 95. It is not certain at this time if the storm drainage improvements proposed for Sub-basin 7, which is the lower part of Watershed L and includes the community of Empire on the east side of the BNSF Tracks, is sized for storm water flows from Sub-basins 94 and 95. Due to the physical entities which separate the Empire North area Sub-basins 94 and 95 from the Johansen area, development of the Johansen-Empire North Specific Plan and Facility Master Plan would be required to determine the best method for locating and sizing storm drainage facilities for these two sub-basins.

Water:

The City currently provides water service to some developed areas within the Johansen-Empire North CPD, specifically the residential parcels north of the Tuolumne River, a mobile home park on Yosemite Blvd. east of Claus Road, and existing schools. The future water infrastructure needs to serve the undeveloped portions of this CPD area have not been planned in detail at this time but in general would require the extension of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific plan land uses. Future wells, tanks and other water supply and distribution infrastructure as required and shown in the 2010 WSER to serve build-out of the city would be determined as necessary to serve the Johansen-Empire North CPD through the Specific Plan/FMP/IFP process for this CPD.

Kiernan-Carver North CPD

Wastewater:

The area north of Kiernan Avenue (approximately 490 acres) is outside the current SOI, and was not included in the 2007 WWMP. This CPD is undeveloped except for some industrial / commercial area east of McHenry Avenue between the MID canal and Kiernan Avenue. The City does not serve sewer to this area.

The Kiernan-Carver North CPD, by virtue of location, would likely need to be served by extending new sewer trunks and/or subtrunks from the existing North Sewer Trunk or Dale Sewer Trunk, which both convey wastewater to the Primary Treatment Plant via the extensive West Sewer Trunk system. Capital improvements to extend sewer infrastructure to this area from the existing sewer system have not been specifically identified on a city master plan level at this time as to location, size, connection points, constraints, other infrastructure needs and cost. Previous preliminary information indicated the North Trunk would likely have sufficient pipe capacity above the planned buildout demands of the existing SOI to also serve this CPD; however, this will be re-evaluated in the current WWMP effort along with revised zoning and proposed and alternative General Plan and SOI boundaries. Available pipe capacity of the West Sewer Trunk system to serve this area above and beyond planned demands for build-out of the existing SOI would also be re-evaluated in the current WWMP effort.

Storm Drainage:

There is currently no City storm drainage infrastructure in the Kiernan-Carver North CPD and thus was not included in the 2008 SDMP. This CPD is expected to be evaluated in an update to the 2008 SDMP scheduled to be initiated in 2015 which, would identify master plan level pipes,

detention facilities, and discharge opportunities to serve future development of this area, including already developed areas. Future Specific Plan/FMP/IFP efforts for this CPD would further define specific infrastructure requirements depending of specifics of development needs.

Water:

The City currently does not provide water north of Kiernan Avenue (outside of Salida) nor was this area studied in the 2010 WSER and therefore, the water facilities required to serve this area have not been determined at this time. This area will be included in the current WMP effort to determine water demand and supply needs and infrastructure requirements for this CPD as part of the buildout of the City. In general, extensions of the City water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses would be expected in order to convey water to areas north of Kiernan Avenue. However, other potential facilities such as a tank, transmission mains, and/or expansion of other City water facilities would need to be determined through the current WMP effort.

Kiernan/Carver CPD

Wastewater:

The Kiernan/Carver CPD would be served by the existing North Sewer and Dale Sewer Trunks. While a majority of the Kiernan-Carver CPD is within the City of Modesto SOI, the northwestern portion west of the Kaiser Facility and north of the MID Lateral No. 6 is outside the current SOI. Information regarding the sewer infrastructure for the Kiernan-Carver CPD outside the SOI is discussed in this section since it was included in the 2007 WWMP study area. The North Trunk currently consists of 39" and 30" pipes in Bangs Avenue and terminating at Carver Road. A 30" diameter extension of the North Trunk to Tully Road would likely be required as the CPD develops.

The western area of the Kiernan/Carver CPD (west of the Kaiser Facility) would be served by the extension of Dale Avenue / Healthcare Way Trunk (Dale Road and Healthcare Way), which would consist of 12" to 24" pipes. Approximately 2,700 feet of the Dale Trunk (30" and 27") has already been installed for the portion of Kiernan Carver CPD that lies within the SOI. The 27" Healthcare Way pipe has also been constructed to the western City limits. This area west of Kaiser will require further sewer line extensions and construction of a future Chapman Road Sewer Lift Station to be fully served.

Storm Drainage:

There are currently no storm drainage utilities within the undeveloped areas of the Kiernan/Carver CPD Watershed. The Kiernan/Carver CPD was studied in the 2008 SDMP under sub-basins 54, 55, 56, 102 and 103 of which only sub-basins 56, 102 and 103 have any existing or proposed storm drainage infrastructure.

Sub-basin 103 is mostly developed with commercial uses and has a positive storm drainage system in place, which discharges to the MID Lateral No. 6 from the Northpointe storm basin. Future development within sub-basin 103 would require, as currently envisioned, an increase in size (expand capacity) of the Northpointe storm water basin in order to be served. The developed portion of sub-basin 102 (Kaiser Complex) has a storm drainage system, however, the remaining undeveloped portions north of the Kaiser Complex will required additional, possibly privately owned and maintained, facilities to serve that area.

The SDMP identifies sub-basin 56 as needing approximately 11,400 LF of 30"-78" pipe to convey storm water runoff into proposed Detention Basin No. 18. A proposed new pump lift station will then discharge storm water into the MID Lateral No. 6. Sub-basins 55 and 54 are part of the

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Kiernan Business Park East and South Specific Plans, respectively. These two sub-basin areas are proposed to have separate storm drainage storage basins and will share a discharge lift facility to the MID Lateral No. 6.

Water:

The City currently provides water service to the incorporated developed areas within the Kiernan/Carver CPD. The incorporated yet undeveloped area east of Dale Rd and north of Bangs Ave, which is part of the Kiernan Business Park East Specific Plan, is currently not served. This area was included in the 2010 WSER and will also be re-evaluated in the current WMP effort.

The remaining unincorporated areas of the Kiernan/Carver CPD are not served with City water and would be considered for water service as future development planning occurs. The future water infrastructure needs to serve the undeveloped portions of this CPD area have not been planned beyond the master plan level at this time but in general would require the extension of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses. Future wells, tanks and other water supply and distribution infrastructure as required and shown in the 2010 WSER to serve build-out of the city would be determined through the Specific Plan/FMP/IFP process as necessary to serve the Kiernan/Carver CPD, which would be dependent upon specifics of the land uses being planned and the timing of Kiernan/Carver development with the other CPD areas.

Kiernan-McHenry CPD

Wastewater:

The 470-acre Kiernan/McHenry CPD would be served by the North Sewer Trunk Extension. The 30" and 24" diameter sewer pipes are planned to be extended from the current terminus in Bangs Avenue at Carver Road east to McHenry Avenue (the eastern limit of this CPD). Some existing developed industrial and commercial areas east of the old railroad tracks have an existing sewer collection system consisting of "dry pipes," which are expected to be connected to the future North Sewer Trunk Extension when it is extended to McHenry Avenue.

As previously stated for the Hetch-Hetchy CPD, the North Sewer Trunk flows are routed into the West Trunk and downstream into the SAPTF. Downstream improvements for the West Trunk are necessary for build out of the West Trunk tributary area which includes this CPD. Further details on the downstream improvements required for West Sewer Trunk have been outlined in the 2007 WWMP.

Storm Drainage:

There is currently no storm drainage infrastructure in the Kiernan-McHenry CPD west of the old railroad tracks. East of the old railroad tracks, some developed commercial and industrial areas have existing positive storm water conveyance and storage facilities owned and operated by Stanislaus County. The Kiernan-McHenry CPD in the 2008 SDMP is identified as sub-basin 90, which has been proposed to attenuate runoff flows into future Detention Basin No. 17. From this proposed basin, flows are planned to be discharged into MID Lateral No. 6. Total proposed backbone storm drainage infrastructure in the Kiernan- McHenry CPD will consist of approximately 6,800 LF of 42"-72" diameter pipes.

Water:

The City currently provides water service to some existing developed commercial/industrial areas in the eastern half of this CPD. Some of the commercial/industrial area is served by private wells. The City-served area essentially includes most of the developed portion of the North McHenry

Corridor Tax Sharing Agreement Area. The Agreement area spans both sides of McHenry Avenue, the west side being within the Kiernan-McHenry CPD. Water service for future development within this area falls under the provisions of the Agreement, which are not discussed here, and essentially state that the City will provide water service within the limits that available supply and distribution infrastructure can provide.

The remaining area of the CPD outside the Agreement area is considered undeveloped and not currently served with city water and would be considered for water service as future development planning occurs. The future water infrastructure needs to serve the undeveloped portions of this CPD area have not been planned in detail at this time but in general would require the extension of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses. Future wells, tanks and other supply and distribution infrastructure as required and shown in the 2010 WSER to serve build-out of the city would be determined through the Specific Plan/FMP/IFP process as necessary to serve the Kiernan/McHenry CPD, which would be dependent upon specifics of the land uses being planned.

Paradise-Carpenter CPD

Wastewater:

The 810-acre Paradise-Carpenter CPD would be served by the West Sewer Trunk via four proposed sub-trunks. The existing County rural developments within this CPD (west of Carpenter Road) are not served by the City of Modesto sewer system. Details from the 2007 WWMP regarding the sewer extensions to the Paradise-Carpenter CPD have been summarized below:

- 1 2,643 feet of 15" pipe running west in California Avenue from Ohio Avenue to Grimes Avenue (W-6).

- 2 2,190 feet of 15" pipe in Vineyard Haven running north from Paradise Road to its terminus (W-7).

- 3 2,395 feet of 15" diameter pipe in California Avenue running from east of Ohio Avenue to Grimes Avenue (W-8). This cost will be shared with Highway 132 CPD. Therefore, only half the extension cost will be included in the sewer cost total for Paradise/ Carpenter CPD.

- 4 2,395 feet of 15" diameter pipe in Lynn Avenue running from Dunning Lane to Beverly Drive (W-9).

Storm Drainage:

There is currently no storm drainage infrastructure in the Paradise-Carpenter CPD area. The 2008 SDMP studied the Paradise-Carpenter CPD as Sub-basin 25, which would drain to proposed Detention Basin No. 19. Runoff flows would eventually be routed to MID Lateral No. 5. The storm drainage infrastructure would consist of approximately 13,600 LF of 42"-78" diameter pipes and a lift station for discharge into the MID Lateral No. 5. It should be noted that a portion of this infrastructure capacity would also be shared with the Highway 132 CPD.

The southern area of the Paradise-Carpenter CPD, near the Tuolumne River area will also be served by approximately 5,200 LF of 30"-48" diameter pipes and approximately 4,100 LF of parallel 78" diameter pipes. Drainage flows would then be discharged into Dry Creek via a 9 cfs lift station.

Water:

The City currently provides water service to most but not all of the developed parcels within the Paradise-Carpenter CPD. The non-served areas if this CPD would be considered for water service as future development planning occurs. The future water infrastructure needs to serve the undeveloped portions of this CPD area have not been planned in detail at this time but in general would require the extension of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses. Future wells, tanks and other water supply and distribution infrastructure as required and shown in the 2010 WSER to serve build-out of the city would be determined through the Specific Plan/FMP/IFP process as necessary to serve the undeveloped areas of the Paradise-Carpenter CPD, which would be dependent upon specifics of the land uses being planned. Current infrastructure needs required to adequately serve the existing customers within this CPD are more clearly defined in the 2010 WSER.

Roselle/Claribel CPD

Wastewater:

In 2001, 480 acres of the 1,620-acre Roselle/Claribel CPD received a positive Measure "M" vote for annexation into the City. This CPD would be served by the Sonoma and Lakewood Sewer Trunks from which flows are pumped into the River Trunk through the Scenic Sewer Lift Station. From the River Trunk flows are conveyed through the Beard Industrial Park area and across the Beard Brook siphon crossing to the SAPTF.

Currently, the Sonoma Sewer Trunk is stubbed and plugged at the intersection of Wood Sorrel Drive and Sylvan Avenue. The extension of this sewer trunk to serve approximately the western 950 acres of the Roselle-Claribel CPD, which includes the 480-acre annexed Tivoli Specific Plan Area, would consist of the following alignments:

- 1 1,400 feet of 14" diameter force main from existing terminus of the Sonoma Trunk to the proposed Sylvan Avenue Sewer Lift Station at Aria Way;
- 2 1,500 feet of 27" diameter pipe from the proposed Sylvan Avenue Sewer Lift Station north to proposed Bridgewood Way;
- 3 2,800 feet of 24" diameter pipe from proposed Bridgewood Way to the northern boundary of Tivoli Specific Plan Area;
- 4 2,400 feet of 18" diameter pipe to serve the roughly 470-acre area north of the Tivoli Specific Plan;
- 5 A new sewer lift station at the intersection of Sylvan Avenue-Aria Way.

Preliminary CIP review for the Sylvan Sewer Lift Station and associated force main to the existing Sonoma Trunk is currently underway. More detailed information on the required sewer system improvements for the Tivoli area are provided in the Final Tivoli Specific Plan, Facility Master Plan and Infrastructure Finance Plan (May 2008).

The eastern side of the Roselle/Claribel CPD (east of Roselle Avenue) would be served by an extension of the Lakewood Sewer Trunk. The Lakewood Sewer Trunk is currently stubbed and plugged at the intersection of Sylvan Avenue and Litt Road. Details regarding the extension of this sewer trunk have been outlined below:

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- 1 4,000 feet of 21" diameter pipe extending from the current Sylvan Avenue stub to roughly just south of Plainview Road;
- 2 4,400 feet of 18" diameter pipe extending from just south of Plainview Road to the terminus in the Roselle-Claribel CPD.

A new downstream Beard Brook Sewer Siphon consisting of approximately 1,800 feet of 48" pipe is expected to be required to reliably serve the build-out sewer demands of the Roselle/Claribel CPD and other future build-out demands of upstream growth. The Beard Brook Siphon CIP is under review at this time and expected to be completed before buildout of the Roselle/Claribel CPD.

Storm Drainage:

There is no existing positive storm drainage infrastructure within the Roselle/Claribel CPD area. The two small existing developed residential areas along Jeffery Drive and Lydia Lane are currently served by rockwells. The Roselle/Claribel CPD would consist of Watershed 98, also known as Tivoli Specific Plan Area, and Watershed 88 (the remainder of the Roselle/Claribel CPD).

Per the 2008 SDMP, Watershed 88, which contains nearly 75% of the Roselle/Claribel CPD area, would be routed to a future Detention Basin No. 12 through approximately 28,400 feet of 24"-72" diameter pipe. Watershed 88 would be proposed to discharge to the MID Lateral No. 6. As the remainder of the Roselle/Claribel CPD is planned through the Specific Plan/FMP/IFP process, a more refined storm drainage system would be planned to serve the development of this area.

Storm water runoff flows from development within the Tivoli Specific Plan Area (Watershed 98) would be conveyed through a combination of secondary storm water basins and one primary storm water basin with a discharge to the MID Lateral No. 6 via a new lift station and force main. The Tivoli Specific Plan Area Facility Master Plan and Infrastructure Finance Plan details the required infrastructure and costs required to serve sub-basin 98.

Water:

The City currently provides water service to some developed areas within the Roselle- Claribel CPD, specifically the residential parcels along Jeffrey Drive, and Lydia Lane and some commercial parcels along Sylvan Avenue and Oakdale Road. These are all within the larger Tivoli Specific Plan area, which has an adopted FMP/IFP and is in the City limits. Infrastructure requirements to serve water to the future Tivoli Specific Plan area developments are detailed in the Tivoli FMP/IFP and generally consist of two new water wells, extension of the city's water grid system of 12" and 16" water mains and smaller distribution pipes.

The unincorporated areas of the Roselle/Claribel CPD (outside the Tivoli SP area) are not served with city water and would be considered for water service as future development planning occurs. The future water infrastructure needs to serve the undeveloped portions of this CPD area have not been planned in detail at this time but in general would require the extension of the city water grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses. Future wells, tanks and other water supply and distribution infrastructure as required and shown in the 2010 WSER to serve build-out of the city would be determined as necessary to serve the Roselle-Claribel CPD through the FMP/IFP process for this CPD and would be dependent upon specifics of the land uses being planned.

Whitmore-Carpenter CPD

Wastewater:

The 690-acre Whitmore/Carpenter CPD would be served by the Ustick Sewer Trunk (aka South Trunk). Approximately 2,100 feet of 12" diameter pipe in Ustick Road from Imperial to Whitmore Avenue would need to be upsized to 24" diameter to increase capacity and prevent future possible overflows due to future development in the Fairview CPD and Whitmore-Carpenter CPD areas. Therefore, this replacement might be required before the Whitmore-Carpenter CPD can begin to develop if the Fairview CPD develops first. Furthermore, a subtrunk has to be extended westward that would serve the Fairview and the Whitmore-Carpenter CPDs. The 2007 WWMP has specified that approximately 5,700 feet of 18" diameter pipe would need to be extended from Carpenter Road to the terminus within the Whitmore-Carpenter CPD.

The existing developed Stanislaus County area (Riverdale Park Tract) along Hatch Road in the northern portion of the Whitmore-Carpenter CPD is currently not served by the City of Modesto sewer system. Sewer for this area consists of individual septic tank systems. Any future consideration of serving this developed area with sewer by the City of Modesto would need to be addressed during the development of a specific plan for the Whitmore-Carpenter CPD or as part of any future annexation of this area or through the City's policy for extending sewer service to existing County areas. However, upgrading a septic system to a positive gravity system would result in additional and as yet undetermined costs for installing new piping system infrastructure and connection to the existing City Sewer System.

Storm Drainage:

The Whitmore-Carpenter CPD area encompasses Watershed G, Sub-basin 27 of the 2008 SDMP. The current land use for this area is mainly agricultural with a small residential development (Riverdale Park Tract) in the northern portion adjacent to the Tuolumne River. There are no City storm water conveyance or disposal facilities currently serving this watershed.

Storm water runoff from the Whitmore-Carpenter CPD would be routed to proposed Detention Basin No. 3 via approximately 10,300 feet of 24"-72" diameter pipes. This includes approximately 450 feet of 24" diameter force main that would convey storm water from Detention Basin No. 3 and then to a discharge point at the Tuolumne River.

Water:

The City currently does not provide water service to the Whitmore-Carpenter CPD area with the exception of a single emergency metered connection to the Riverdale Park Tract. The Riverdale community consists of approximately 170 Stanislaus County residential developed lots located in an area west of Carpenter Road, south of the Tuolumne River and north of Hatch Road. The Riverdale water system has a functional well and distribution system, which is owned and operated by the Riverdale Community Services District. On occasion, the Riverdale water system has needed supplemental water supply by the City of Modesto through the emergency connection to maintain water pressures for the community due to power outages and other intermittent water distribution disruptions to their groundwater well. Serving the Riverdale community with Modesto-supplied water on a permanent basis, prior to developing a Specific Plan for the Whitmore-Carpenter CPD, has been studied preliminarily from a hydraulic analysis standpoint and a number of system improvements have been identified as necessary to do so reliably, but there has been no discussion by either jurisdiction or the with Stanislaus County to consider further direction at this time.

The future water infrastructure needs to serve the undeveloped portions of this CPD area have not been planned in detail at this time but in general would require the extension of the city water

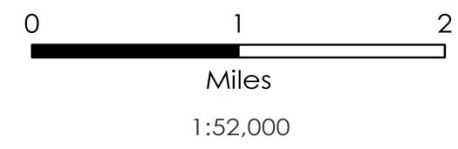
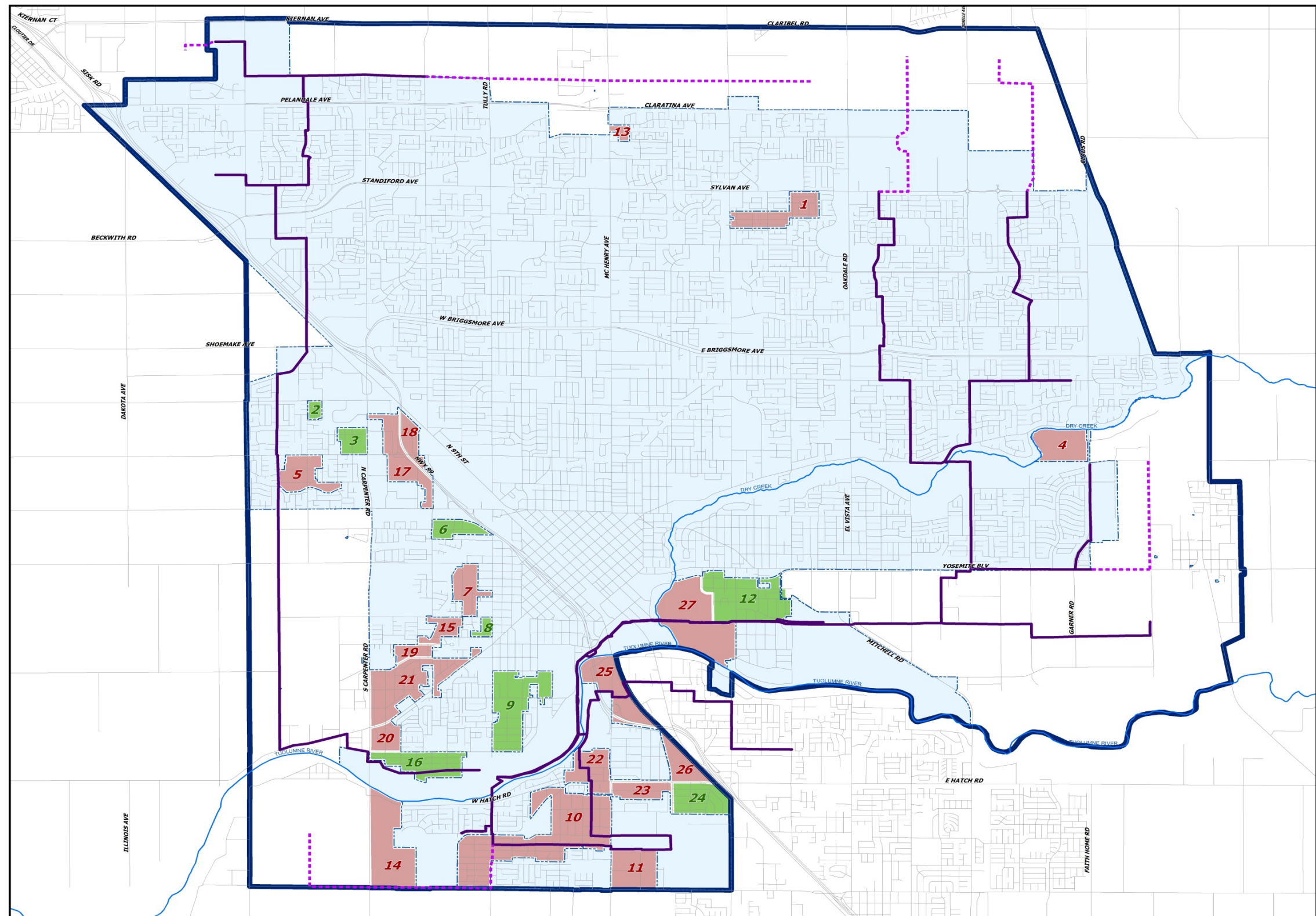
APPENDIX A

grid system consisting of 12" and 16" water mains and the necessary smaller distribution pipes as determined by future street alignments and specific land uses. Future wells, tanks and other water supply and distribution infrastructure as required and shown in the 2010 WSER to serve build-out of the city would be determined through the Specific Plan/FMP/IFP process as necessary to serve the undeveloped areas of the Whitmore-Carpenter CPD, which would be dependent upon specifics of the land uses being planned.



Figure B-1
Unincorporated County Islands

- LEGEND
- Affirmative Sewer Advisory Vote Received
 - No Sewer Advisory Vote
 - Existing Sewer Trunks
 - Future Sewer Trunks
 - Streets
 - Modesto Incorporated Area
 - Modesto Sphere of Influence



UGR-15-001 EXH 2014 Figure B County Island Map DRAFT 1-12-15.mxd

Estimate for County Island Improvements										Appendix B - Table B-1	
Updated Cost:	December 2014										
SF ENR CCI =	10,919.84										
2015 URBAN GROWTH POLICY REVIEW											
COUNTY ISLAND IMPROVEMENTS - SUMMARY SPREADHSEET											
Area	Storm Collection	Sanitary Sewer	Water Line	Curb & Gutter	Sidewalk	Streetlights	Signs & Striping	AC Overlay	Manholes	Total Budget (25% cont., 25% eng.)	Area (ac)
1	\$239	\$1,878,500	\$0	\$0	\$1,352,400	\$330,000	\$6,762	\$1,192,593	\$196,800	\$7,745,772	89.4
2	\$544,950	\$643,500	\$0	\$28,800	\$283,500	\$134,400	\$2,100	\$370,370	\$72,000	\$3,249,407	13.3
3	\$996,480	\$833,300	\$442,800	\$302,400	\$408,240	\$168,000	\$2,692	\$474,815	\$91,200	\$5,812,386	38.4
4	Single Family Residence-No developme										83.1
5	\$1,681,560	\$1,118,000	\$1,488,000	\$658,080	\$1,041,600	\$310,800	\$5,208	\$918,519	\$110,400	\$11,456,510	77.4
6	\$591,660	\$789,100	\$0	\$245,520	\$446,880	\$226,800	\$2,600	\$458,519	\$86,400	\$4,449,185	42.4
7	\$762,930	\$865,800	\$0	\$428,400	\$310,968	\$218,400	\$3,406	\$600,741	\$91,200	\$5,127,883	61.7
8	\$249,120	\$273,000	\$201,600	\$33,120	\$88,200	\$75,600	\$882	\$155,556	\$38,400	\$1,742,934	13.7
9	\$2,335,500	\$2,588,300	\$0	\$1,348,920	\$1,590,540	\$571,200	\$9,156	\$1,614,815	\$259,200	\$16,121,298	153.9
10	\$3,145,140	Complete	\$0	\$3,862,080	\$4,329,360	\$1,444,800	\$23,810	\$4,199,259	\$0	\$26,569,452	354.6
11	\$3,596,800	\$130,000	\$0	\$300,960	\$351,120	\$78,000	\$1,850	\$309,630	\$14,400	\$7,473,062	112.4
12	\$3,176,280	\$8,000,000	\$0	\$1,892,520	\$2,226,420	\$739,200	\$11,941	\$2,105,926	\$360,000	\$21,720,916	387.4
13	Mobile Home Park										12.7
14	Fairview SP Area										171.9
15	\$482,670	\$158,600	\$0	\$266,400	\$336,000	\$184,800	\$2,066	\$364,444	\$19,200	\$2,834,658	37.7
16	\$1,728,270	Complete	\$0	\$1,056,600	\$1,278,900	\$428,400	\$7,203	\$1,270,370	\$201,600	\$9,330,224	96.8
17	\$1,961,820	\$1,008,800	\$384,000	\$508,320	\$685,860	\$369,600	\$4,885	\$861,481	\$110,400	\$9,211,197	106.0
18	\$1,432,440	\$643,500	\$972,000	\$248,400	\$756,000	\$226,800	\$4,158	\$733,333	\$72,000	\$7,950,986	71.7
19	\$217,980	\$557,900	\$0	\$129,240	\$111,720	\$84,000	\$1,117	\$197,037	\$62,400	\$2,127,178	29.1
20	\$996,480	\$1,384,500	\$0	\$516,000	\$791,700	\$268,800	\$4,473	\$788,889	\$153,600	\$7,663,190	42.7
21	\$2,210,940	\$4,862,000	\$0	\$2,561,400	\$2,942,100	\$1,033,200	\$16,632	\$2,962,963	\$499,200	\$26,700,680	173.7
22	\$747,360	\$691,600	\$162,000	\$579,600	\$639,240	\$218,400	\$3,196	\$563,704	\$76,800	\$5,752,969	81.3
23	\$716,220	\$923,000	\$300,000	\$250,200	\$308,700	\$184,800	\$2,604	\$459,259	\$96,000	\$5,063,724	51.3
24	\$0	Construction	\$1,606,800	\$768,240	\$973,980	\$344,400	\$5,624	\$991,852	\$187,200	\$10,571,556	86.1
25	\$3,328,000	\$873,600	\$603,000	\$517,320	\$603,540	\$193,200	\$3,203	\$532,222	\$86,400	\$10,532,007	104.0
26	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	47.6
27	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	200.0
Totals	\$30,903,000	\$28,223,000	\$6,160,000	\$16,503,000	\$21,857,000	\$7,834,000	\$126,000	\$22,126,000	\$2,885,000	\$209,207,000	2,740

NOTE: Table B-1 revised 3/3/15 to reflect the redefined County Island #26 (boundary modified due to annexation of the Shackelford neighborhood), and new Island #27 (previously part of Island #12, which now has sewer infrastructure installed). Island #26 is home to existing Industrial land uses such as junk yards, other outdoor storage and warehousing, and annexation would be preceded by some level of infrastructure improvements. The scope / scale of those infrastructure improvements, and associated costs, will be determined at that time. Infrastructure generally exists at Island #27, which is the location of Gallo Winery.

