Image by Phil Gross

RURAL INFRASTRUCTURE INVESTMENT PLAN

FY 2021 - 2022

Not Reviewed or Approved by the Board of Supervisors

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TABLE OF CONTENTS

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Introduction

Purpose

The Rural Infrastructure Investment Plan assesses and categorizes infrastructure investments in the County's rural communities in support of the Board's Strategic Plan goals. According to the American Society of Civil Engineers, the United States "infrastructure gap," which refers to the amount of money required to meet our nation's infrastructure needs, is estimated to be above $2 trillion. This gap is even more exaggerated in rural areas, like Northern California, where funding is much more difficult to secure. Most state and federal infrastructure initiatives are focused on urban and suburban areas and do not adequately address the unique needs of rural communities. Deteriorating or inadequate infrastructure can impact the lives of our rural residents in many ways: jeopardizing or limiting employment opportunities, decreasing quality of life and public safety, and reducing economic competitiveness.

Infrastructure is generally defined[1] as "the system of public works of a country, state, or region including the resources (such as personnel, buildings, or equipment) that form the underlying foundation or basic framework to support an economy". Typically, infrastructure includes roads, railways, bridges, tunnels, water supply/distribution, sewer/wastewater, electrical grids, and telecommunications, including internet/broadband.

This report serves a repository for locally derived and supported infrastructure projects as the County explores new funding models and builds public/private/non-profit relationships to leverage investments and braid financial resources.

Though local funding may be currently inadequate to fully implement these rural infrastructure projects, opportunities exist to incrementally invest in projects, thereby positioning projects to be competitive when funding becomes available.

A local agency could develop a rough project cost estimate for an identified rural infrastructure need, for example, secure local funding for preliminary design and engineering or CEQA review, and then apply for a state or federal grant. Or, the local agency could combine multiple similar projects into a larger single project, increasing the number of beneficiaries and also the (now larger) project's overall funding competitiveness.

Methodology

To better understand the needs of rural communities within Yolo County, many sources of information were reviewed, researched, and analyzed, including:

[1] Merriam-Webster dictionary, 2021

- Municipal Service Reviews and special studies undertaken by the Yolo Local Agency Formation Commission (LAFCo)
- Community Action Plans (developed by rural community advisory committees)
- Community revitalization studies
- Special district engineer's reports in support of fee/assessment modifications
- Deficiencies documented by local/state regulatory agencies
- Results from 2020 Strategic Plan community engagement surveys and meetings
- Staff conversations with rural community advocates
- Robust outreach to local stakeholders (See Appendix E for engagement plan and stakeholder roster)

Infrastructure improvements and recommended projects are organized first by each rural community and then categorized by Strategic Plan goal. Many projects align with multiple Strategic Plan goals. In those cases, projects are categorized under the goal with which they are most closely related.

Executive Summary

Relationship to Yolo County Strategic Plan

This report, prepared for fiscal year 2020-21, is the second annual rural infrastructure investment report. These annual reports are a companion to the Yolo County Strategic Plan ("Strategic Plan"). The County's Strategic Plan is a multi-year plan that presents a meaningful vision of the future and long-term strategic goals, indicating where resources are to be concentrated to accomplish strategic outcomes. Following Board adoption of the Strategic Plan's goals and high-level objectives, departments develop operational plans in concert with the County Administrator to support the Strategic Plan goals, which are, in turn, aligned with the County budget. The adopted 2020 -2024 Strategic Plan goals are:

Thriving Residents

Social, economic and physical environments are created and supported which promote good health and protect vulnerable populations so that community members and future generation have the opportunity to learn and grow to their full potential.

Safe Communities

Safe communities are maintained through cross-system collaborations that focus on prevention, utilize evidence-based strategies for treatment and intervention, provide legal representation and ensure code enforcement of unsafe conditions.

Sustainable Environment

Efficient utilization of natural resources to provide recreational opportunities and ensure availability for generations to come, protect and improve water quality and quantity, lower greenhouse gas emissions, and maximize the use of renewable energy.

Flourishing Agriculture

Support a vibrant and resilient agricultural economy that concurrently preserves sufficient farmland to maintain regional food security in perpetuity.

Robust Economy

Promote a balanced economy that offers job opportunities and ample services for every resident as well as avenues for business growth and development.

Fiscal Year 2019-20 Accomplishments

Accomplishments and progress from the first year (FY 2019-20) Rural Infrastructure Investment Plan include:

Progress Report
2019 - 2021 Accomplishments

THRIVING RESIDENTS

Community	*Description*	*Cost*	*Status*
Capay Valley	New community center and comprehensive health clinic in the Valley region	$20 M	Est. completion date Spring 2022
Capay Valley	Installation of restroom facilities in Guinda	$65,000	In progress; funding from FY 19/20 Rural Community Investment Program (RCIP)
County-wide	Projects to be developed by Rural Health Coordinator	Funded	Ongoing
County-wide	Install/upgrade broadband at migrant hosing centers to facilitate distance learning	Funded	Madison Migrant Camp completed; Davis Migrant Camp in progress
Knights Landing	New community park with sports fields	$4.7M	Site plan completed, State Parks Prop 68 funding application submitted March 2021
Knights Landing	Promenade and trails along Sacramento River	TBD	Concept to be evaluated through Small Communities Flood Risk Reduction (SCFRR) grant
Yolo	Replace Yolo Branch Library	$4M	Funded through ACO/CIP

SAFE COMMUNITIES

Community	*Description*	*Cost*	*Status*
Capay Valley	Replace CR 40 bridge to improve emergency service access	$3.75M	Funding secured ($800,000 preconstruction; $2.2M for construction)
Capay Valley	Improve law enforcement response time via implementation of "resident deputy"	$200,000 / yr	Complete
Clarksburg	Installation of bollards on Poplar Street alley	$5,000	Complete; funded by FY 19/20 RCIP
County-wide	Create Capital Improvement Plans for fire districts, building on "Yolo County Fire Protection Districts" study from July 2019	Staff time	In progress
Esparto	Installation of street print, flashing pedestrian beacons, and other safety improvements along SR-16 in downtown Esparto	$50,000	Complete; funded by FY 19/20 RCIP
Madison	Complete preliminary design and engineer's opinion for replacement of community drinking water system	$50,000	Complete; funded by FY 19/20 RCIP
Knights Landing	Improve pedestrian safety near Sci-Tech Academy	$45,000	Traffic calming measures installed on Railroad Street
Knights Landing	Reduce localized flooding by constructing new detention basin	$1,000,000	Will be designed and permitted with SCFRR grant
Knights Landing	Levee repairs on Sacramento River	$9M	In progress through SCFRR grant
Knights Landing	Levee repairs on Knights Landing Ridge Cut	$2M	In progress through SCFRR grant
Knights Landing	Design and permitting of new cross levee to provide 100-year flood protection	TBD	In progress through SCFRR grant
Madison	154 KV generator for Madison CSD to power drinking water and wastewater systems during power outages	$90,000	Complete
Madison	Implement flood risk reduction projects to increase flood protection	$600,000 expended to date	CalOES funding secured, in progress

Yolo	Generator to power community drinking water system during power outages	$100,000	Funding secured
Esparto/Madison/Yolo	Obtain specialized off-road equipment to be able to respond to OHV emergencies in Cache Creek	$130,000	Complete

SUSTAINABLE ENVIRONMENT

Community	*Description*	*Cost*	*Status*
County-wide	Ensure sustainable water supply through responsible groundwater management	$1,000,000	In progress through Yolo GSA
Capay Valley	Development of small off-stream storage / detention to slow water down and allow for greater infiltration	$100,000	In progress through Flood Safe Yolo 2.0

FLOURISHING AGRICULTURE

Community	*Description*	*Cost*	*Status*
County-wide	Reduce regulatory hurdles for agricultural housing on agriculturally zoned properties	Est. $150,000 (staff time)	In progress, Zoning Code Update 2021
County-wide	Work with local community colleges to develop a farm apprenticeship and training program on local farms	Funded	Complete

ROBUST ECONOMY

Community	*Description*	*Cost*	*Status*
Clarksburg	Connect Clarksburg area to high-speed broadband	$1M	Contract awarded to ATT – in D&E phase
Clarksburg	Relocation of 1883 Clarksburg School House	$1M	Received $50,000 from RCIP in FY 19/20; Awarded $1M Prop 68 grant from Delta Conservancy
County-wide	Streamline County permitting processes	Staff time	In progress, Zoning Code Update 2021
County-wide	Reduce cost and burdens of FEMA regulations and flood insurance within agricultural zones	N/A	In progress through FloodSAFE Yolo 2.0 and Agricultural Floodplain Task Force

Health Equity

In conjunction with the 2020 Strategic Planning process, the Board of Supervisors adopted a new approach to policy development, "Health in All Policies." This new, collaborative approach will improve the health of all people by incorporating health, equity, and sustainability considerations into decision-making across sectors and policy areas.

Healthy People 2020 defines health equity as the "attainment of the highest level of health for all people." According to the Yolo County Health Council's 2019 annual report to the Board of Supervisors, poverty and geography play major roles in health outcomes. The 25 voting members which make up the Yolo Health Council include appointees by the Board of Supervisors; representatives of nine county health systems, including CommuniCare Health Systems, Kaiser Permanente, Sutter Davis Hospital and UC Davis; and members of county health advisory boards, including the Local Mental Health Board, First 5 Yolo, the Commission on Aging and Adult Services, and many others.

To further the desired outcome of health equity across Yolo County, the Board has recently approved place-based rural health investments. These investments include a $200,000 per fiscal year "Wellness and Prevention Fund" designed to support health equity projects in high priority areas (including rural communities), as well as a full-time health program coordinator who is responsible for identifying health needs and developing programs to address those needs in the County's unincorporated areas and rural communities.

Universal Themes

Throughout the information gathering process, several reoccurring themes were identified in nearly all of the rural communities: Road improvements, increased law enforcement presence, and access to high speed internet (broadband).

Road Improvements

Each rural community has strong opinions about investments in their local transportation infrastructure. Unfortunately, state and federal funding for road improvements dictates that roads are repaired/upgraded based on certain criteria, including public safety, and there are frequently road repair emergencies that take priority over all other projects.

One methodology for capturing each communities' desired improvements is to incorporate them into the rural community "area plan" for each unincorporated community. The Esparto Community Plan was adopted in 2019 and includes robust discussion and documentation of the communities' desired circulation and transportation improvements. An "area plan" can serve as

a formal, adopted, community driven planning document to guide future investments. Existing adopted community area plans can be found here.

Increased Law Enforcement Presence

Several rural communities have articulated a desire to reinstate a "resident deputy" program, which currently exists in the communities of Clarksburg and Yolo. Counties such as Calaveras and Colusa have formal resident deputy programs. Generally, a resident deputy program calls on deputies involved to patrol the communities where they live, routinely attend events, and visit schools in their assigned areas. Resident Deputies cover other areas during their routine patrol but focus their efforts in crime prevention by collaborating on community issues with residents, businesses, homeowners' associations, schools, and other local and state agencies. Resident deputies' duties also include overseeing some Neighborhood and Business Watch groups, as well as keeping department administration abreast of town halls and other events relevant to community building or crime prevention.

The Capay Valley was assigned a resident deputy during FY 2019-20. The communities of Clarksburg and Knights Landing have expressed interest in also hosting a resident deputy. It is estimated that each resident deputy would cost approximately $200,000 per deputy, per fiscal year.

High Speed Internet / Broadband

Broadband is a vital element of Yolo's economic sustainability that will keep rural community competitive, locally and globally. Where our road systems provide the infrastructure necessary to connect our communities physically, broadband provides the digital infrastructure necessary to connect our communities virtually to the rest of the world. As more of our everyday lives are lived online, broadband has become a fundamental need for our homes, businesses, and communities. Broadband reaches many facets of everyday life by improving the delivery of healthcare services, enriching the educational experiences of children and adults, aiding in the management and conservation of energy resources, assisting public safety personnel in the performance of their duties, and facilitating citizen interaction with our government agencies. Broadband is a driving force behind the competitiveness of our businesses, fostering innovation, productivity, and access to the global economy. Affordable, available access to broadband means the difference between thriving in the new economy and becoming obsolete.

Yolo County LAFCo commissioned the "Yolo Broadband Strategic Plan" in 2015. The study can be found here. The Yolo Broadband Strategic Plan provides a roadmap to understand our local broadband environment and forge strategies that will ensure our communities are prepared to

thrive in the digital economy. In 2012, about 70% of Yolo households maintained some type of broadband connection, 6% lower than California's statewide average of 76%.

One broadband success story has been realized thus far: In FY 17/18 Yolo County partnered with WAVE Broadband to bring high speed internet to the unincorporated community of Knights Landing. The County, in partnership with Yolo LAFCo, convenes a "Broadband Committee" that is committed to implementing the Broadband Strategic Plan.

Current efforts include expanding broadband access into Clarksburg, Binning Tract, and North Davis Meadows. The Yolo County Library applied for grant funding from the California State Library in July 2020 to fund a one (1) gigabyte fiber connection to the Clarksburg Branch Library. As of June 2021, the state has awarded a contract to AT&T and the project is undergoing design and engineering.

In addition, the County has installed fiber to connect the decommissioned 180' tower at the landfill. Yolo County Housing is currently seeking funding (one time cost of $10,000, and approximately $20,000 per year thereafter) to use this connection to increase broadband capacity at the Davis Migrant Center.

Infrastructure Provided by Other Entities

Migrant Housing Centers

There are two migrant housing communities within Yolo County: the Davis/Dixon Migrant Center and the Madison Migrant Center. Both are owned and operated by the Yolo County Housing Authority, with financial assistance from the state and federal government. Several project suggestions for the migrant housing communities surfaced during the data gathering phase of this project. A short profile for each migrant housing community and a summary of recommended improvements are provided in Appendix A.

Community Services Districts (CSDs)

Small rural communities in unincorporated areas need basic services like water, wastewater management, security, fire protection, street lighting, vector control, and recreation. Since counties often consist of large and diverse geographical areas, it is difficult to provide tailored community services to any one community. Small rural communities usually do not have the tax base necessary to incorporate services into their own city. Consequently, the Community Services District Law (Gov. Code §61000-61850) was created to provide an alternate method of providing services in unincorporated areas. Community services districts are governed by residents who live with the serve area boundary through local elections. Community service

districts localize the costs and benefits of public services: CSDs let local residents get the services they desire at the price that they are willing to pay.

Yolo County currently has four (4) community services districts (CSDs):

- Cacheville Community Services District
- Esparto Community Services District
- Knights Landing Community Services District
- Madison Community Services District

While these CSDs are independent legal districts, they are subject to review by Yolo LAFCO. LAFCO has the authority to review and make determinations on the following:

(1) Growth and population projections for the affected area.
(2) Present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies.
(3) Financial ability of agencies to provide services.
(4) Status of, and opportunities for, shared facilities.
(5) Accountability for community service needs, including governmental structure and operational efficiencies.
(6) Any other matter related to effective or efficient service delivery, as required by commission policy.

Further, LAFCO has the power to approve or deny consolidation or reorganization of special districts, jurisdictional and service area boundaries, add or remove legal powers/services provided by districts, and conduct periodic Municipal Services Reviews to ensure adequate provision of services.

Appendix B to this report provides an overview of each CSD and a summary of recommended improvements. The improvements are further organized by 1) immediate improvements required for service delivery and 2) improvements anticipated to be needed by 2030 to allow for anticipated growth.

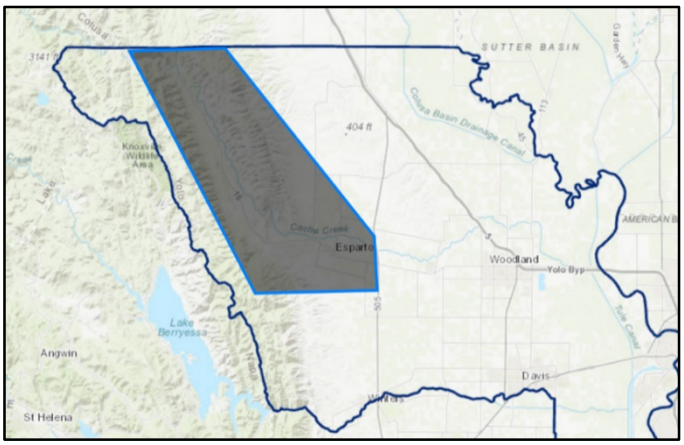
Rural Community Profiles and Needs Assessments

The remainder of this report consists of a rural community profile and community-based needs assessment for each of the following rural communities: Clarksburg, Dunnigan, Esparto, Knights Landing, Madison, and the town of Yolo. A separate profile and needs assessment were created for the Capay Valley Region (the rural communities of Brooks, Capay, Esparto, Guinda, and

Rumsey, as well as the surrounding areas). The town of Esparto is the County's largest rural community and, therefore, has its own community profile and needs assessment.

Capay Valley Regional Profile

The Capay Valley comprises approximately 200 square miles in the north western portion of Yolo County. Generally, the Capay Valley is the area of the valley floor west of I-505 to the County line. This area includes the communities of Rumsey, Brooks, Guinda, Capay, Esparto, and Madison. The region lies within the 5th Supervisorial District of the County.



Though inexact, the general demographic profile (below) is extracted from Census Tract 115 in the 2000 Census. The census-based demographics in the tables below include the rural communities of Madison and Esparto, which, for the purposes of this report, have their own rural community profiles (see pages 20 and 26).

Regional Demographics, 2000 Census

Capay Valley Region	
Total population	5,251
Median age (years)	35.2
Estimated MHI	
Brooks	$39,643
Capay	$69,702
Guinda	$64,904
Rumsey	N/A
Race	
White	64.4%
Latino	40.1%
American Indian	2.9%
African American	1.2%
Occupied Housing Units	1,471
Owner-occupied Units	73.2%

Capay Valley Communities Demographics

	Pop.	Poverty	Medi-Cal	CalFresh
Brooks	212	55%	12%	1%
Capay	255	-	10%	8%
Guinda	259	44%	24%	10%
Rumsey	55	-	45%	15%

Capay Valley Region Needs Assessment

THRIVING RESIDENTS

Subject	*Description*	*Cost*	*Status*
Community Identity	Guinda Town Hall improvements (grading, painting and repairs, septic work, and new overhang with ADA access)	$50,000	In progress
Health Equity	New community center and comprehensive health clinic in the Valley region	TBD	In progress

SAFE COMMUNITIES

Subject	*Description*	*Cost*	*Status*
Transportation	Additional roads into Capay Valley for adequate residential evacuation	New roads: $3M / mile	Concept
Transportation	Install Park & Ride lots at key locations for casino patrons	TBD	Concept
Water	Install a municipal well and hook ups for residents of Guinda and Rumsey	$3M	Concept
Public Safety	Provide Automated External Defibrillators (AEDs) at community buildings, such as community halls	$2,500 ea.	Concept
Public Safety	Create Capital Improvement Plans for fire districts, building on “Yolo County Fire Protection Districts” study from July 2019	TBD	In progress
Public Safety	Replace two speed notification signs on SR-16	$20,000	In progress

SUSTAINABLE ENVIRONMENT

Subject	*Description*	*Cost*	*Status*
Water	Ensure sustainable water supply through responsible groundwater management (*Note: this will be addressed in the Yolo Groundwater Sustainability Agency's "Groundwater Sustainability Plan", due in 2022*)	$1M	In progress through Yolo Groundwater Sustainability Agency (YGSA)
Water	Develop small off-stream storage to slow water down and allow for greater infiltration; streamline permitting or eliminate permit for small water storage projects of less than two acres	$100,000	In progress through FloodSafe Yolo 2.0

FLOURISHING AGRICULTURE

Subject	*Description*	*Cost*	*Status*
Housing	Reduce regulatory hurdles for agricultural housing on agriculturally zoned properties	Staff time	In progress, Zoning Code Update 2021
Housing	Keep migrant housing centers open year-round to ensure adequate labor supply (*Note: will require Federal advocacy efforts*)	TBD	Concept

ROBUST ECONOMY

Subject	*Description*	*Cost*	*Status*
Economy	Streamline County permitting processes	Staff time	In progress, Zoning Code Update 2021
Tourism	Installation of way-finding signage throughout the Capay Valley region	$60,000	Shovel Ready
Tourism	Install public restrooms in Guinda for rafters/hikers/cyclists	$200,000 – $500,000	Funding identified; in progress
Tourism	Develop bicycling and hiking trails throughout the region; expand access to state/federal lands in West; improve facilities at existing County parks; create more campgrounds	TBD	Concept

ROBUST ECONOMY

Subject	*Description*	*Cost*	*Status*
Broadband	Extend broadband service to Capay Valley	TBD	Concept
Utilities	Conduct assessment of necessary infrastructure and essential services needed to make Valley attractive to new businesses	$150,000	Concept
Utilities	Conduct Guinda wastewater treatment facility feasibility study; public utilities needed to attract commercial businesses	$70,000	Concept

Clarksburg Community Profile

The rural community of Clarksburg comprises about two (2) square miles and is located in the extreme southeastern corner of the County, on the west bank of the Sacramento River. Clarksburg lies within the primary zone of the Sacramento-San Joaquin Delta and is subject to regulation by the Delta Stewardship Council and the Delta Protection Commission. Clarksburg is within the 1st Supervisorial District.

Clarksburg is best known for its grapes and viticulture, though other crops grown include grass (seed and sod) and tomatoes.

Demographics, 2010 Census
Safety Net Data, Yolo County HHSA, June 2020

Clarksburg	
Total population	448
Median age (years)	48.7
Estimated MHI	$69,482
Race	
White	81.1%
Latino	26.1%
American Indian	0.5%
African American	0.5%
Occupied Housing Units	182
Owner-occupied Units	68.5%
Poverty	-
Medi-CAL	54%
CalFresh	1%

Clarksburg Needs Assessment

THRIVING RESIDENTS

Subject	*Description*	*Cost*	*Status*
Health	Establish bicycle routes to/through the community, possibly using old railroad right-of-way	$150,000*	Concept
Health Equity	New outdoor public recreational facility	$15M	Site Plan in progress

**Potential SACOG funding for transportation study*

SAFE COMMUNITIES

Subject	*Description*	*Cost*	*Status*
Transportation	• Realign and install safety improvements on Jefferson Blvd • Install additional guardrails on South River Road • Install crosswalks on Clarksburg Rd and School St • Improve street lighting, install fog lights, and widen key intersections	$100,000*	Concept
Transportation	Ensure trees and shrubs do not inhibit traffic visibility	$10,000 / yr	Concept
Public Safety	Improve law enforcement response time	TBD	Concept

**Potential SACOG funding for transportation study*

SUSTAINABLE ENVIRONMENT

Subject	*Description*	*Cost*	*Status*
Waste	Develop and implement strategies to reduce illegal dumping of refuse and animals	$100,000	Concept

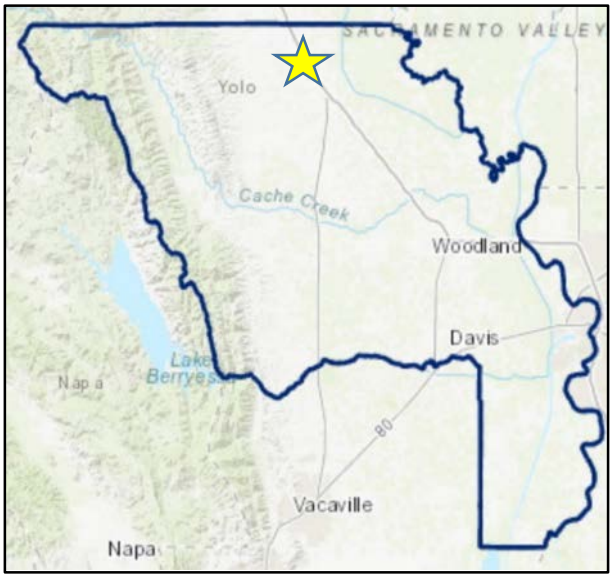
FLOURISHING AGRICULTURE

Subject	*Description*	*Cost*	*Status*
Housing	Reduce regulatory hurdles for agricultural housing on agriculturally zoned properties	Est. $150,000 (staff time)	In progress, Zoning Code Update 2021

ROBUST ECONOMY

Subject	*Description*	*Cost*	*Status*
Economy	Connect Clarksburg area to high-speed broadband	$1M	In progress, pending grant award from CA State Library
Tourism	Install public dock / marina on Sacramento River	$3.0M	Concept
Flood	Bring levees up to current Army Corps standards	$187M	Flood Risk Reduction study completed
Flood	Reduce cost and burdens of FEMA regulations and flood insurance within agricultural zones	N/A	In progress through Flood Safe Yolo 2.0

Dunnigan Community Profile



The rural community of Dunnigan is located in the northeastern portion of Yolo County, bisected by Interstate 5, just north of the interchange between Interstate 505 and I-5. The City of Woodland is located approximately 14 miles to the south, and the town of Arbuckle in Colusa County is located approximately 8 miles to the north. Dunnigan is located within Supervisorial District 5 of the County.

The town has no public sewer or water systems, relying on groundwater wells, septic systems and small wastewater treatment facilities with ponds.

Demographics, 2010 Census
Safety Net data, Yolo County HHSA, June 2020

Dunnigan	
Total population	1,278
Median age (years)	41.7
Estimated MHI	$28,833
Race	
White	59 %
Latino	41.2 %
American Indian	1.3 %
African American	1.8 %
Occupied Housing Units	558
Owner-occupied Units	81 %
Poverty	19 %
Medi-CAL	47 %
CalFresh	12 %

Dunnigan Needs Assessment

THRIVING RESIDENTS

Subject	*Description*	*Cost*	*Status*
Health	Establish bicycle routes to/through the community, possibly by replacing culverts with underground drainage	$25,000*	Concept
Health Equity	Projects to be developed by Rural Health Coordinator	Funded	In progress

**Potential funding from SACOG for active transportation study*

SAFE COMMUNITIES

Subject	*Description*	*Cost*	*Status*
Transportation	Improve street lighting *(Note: could be folded into bike route study, above)*	TBD	Concept
Public Safety	Improve law enforcement response time	TBD	Concept

SUSTAINABLE ENVIRONMENT

Subject	*Description*	*Cost*	*Status*
Water	Reduce reliance on groundwater to ensure water supply reliability and address subsidence	GSP funded by $1M DWR grant	In progress through YGSA

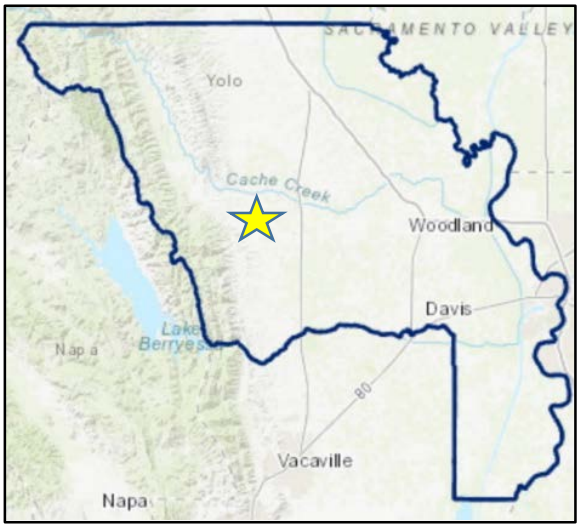
FLOURISHING AGRICULTURE

Subject	*Description*	*Cost*	*Status*
	Projects not yet identified		

ROBUST ECONOMY

Subject	*Description*	*Cost*	*Status*
	Projects not yet identified		

Esparto Community Profile



Esparto is the most populous rural community and is located in the central portion of Yolo County, bisected by Highway 16, roughly halfway between Woodland and the town of Brooks. Located within Supervisorial District 5, Esparto is considered the "gateway" to the Capay Valley region.

Public water and sewer are provided by the Esparto Community Services District.

Demographics, 2010 Census
Safety Net data, Yolo County HHSA, June 2020

Esparto	
Total population	3,783
Median age (years)	33
Estimated MHI	$69,343
Race	
White	60 %
Latino	44 %
American Indian	4.2 %
African American	1.4 %
Occupied Housing Units	1,055
Owner-occupied Units	71 %
Poverty	8 %
Medi-CAL	32 %
CalFresh	9 %

Esparto Needs Assessment

THRIVING RESIDENTS

Subject	Description	Cost	Status
Health Equity	Projects to be developed by Rural Health Coordinator	Funded	In progress
Health	Install playing field lights and shade structures at Tuli Mem Park	$200,000	Shovel ready
Education	Keep Esparto Library open full time and year round	$10,000 / yr	Concept
Community Identity	Construct a community center	$8M	Concept

SAFE COMMUNITIES

Subject	Description	Cost	Status
Transportation	Install multi-use path around/throughout town to link school routes and provide recreation Install sidewalks throughout the community Replace Yolo Ave and Fremont St bridges with ones that can withstand 100-year flood events	$50,000* for feasibility study	Concept

**Potential SACOG funding for active transportation study*

SUSTAINABLE ENVIRONMENT

Subject	Description	Cost	Status
Utilities	Long-term CIP needed for water and wastewater services	$80,000	Concept
Water	Upgrade WWTP to allow use of recycled water for irrigation; results in 20% reduction in potable water use	$6.6M	Shovel ready
Utilities	Install solar system at Tuli Mem Park	TBD	Concept
Waste	Expand hours of Esparto Transfer Station to reduce illegal dumping	$150,000 / yr, each addt'l day	Concept

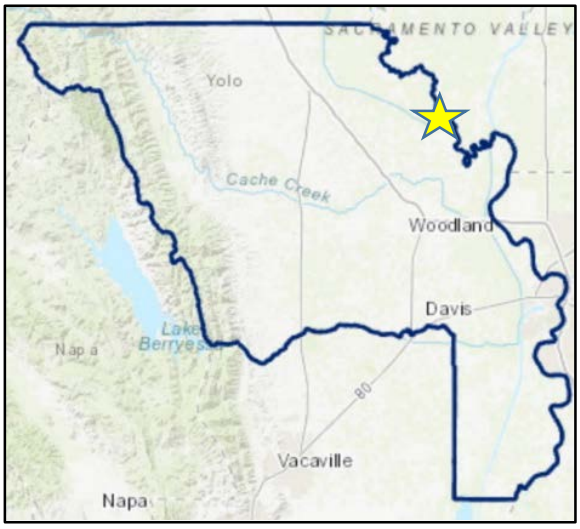
FLOURISHING AGRICULTURE

Subject	Description	Cost	Status
Housing	Adequate affordable housing needed to reduce competition between farm workers and casino employees	TBD	Concept

ROBUST ECONOMY

Subject	Description	Cost	Status
Broadband	Expand Library's Wi-Fi to cover businesses on the length of Yolo Ave	TBD	Concept

Knights Landing Community Profile



Knights Landing is located in the northeastern portion of Yolo County on the west bank of the Sacramento River and lies within Supervisorial District 5. Knights Landing is designated as a "disadvantaged community" and an "economically distressed area" by state and federal standards.

Public water and wastewater services are provided by the Knights Landing Community Services District.

Demographics, 2010 Census
Safety Net data, Yolo County HHSA, June 2020

Knights Landing	
Total population	869
Median age (years)	34
Estimated MHI	$38,068
Race	
White	56 %
Latino	42 %
American Indian	0.7 %
African American	0.4 %
Occupied Housing Units	343
Owner-occupied Units	66 %
Poverty	4 %
Medi-CAL	71 %
CalFresh	18 %

Knights Landing Needs Assessment

THRIVING RESIDENTS

Subject	*Description*	*Cost*	*Status*
Health Equity	Community park with sports fields	$4.7M	Conceptual design/site plan completed
Health Equity	Promenade and trails along Sacramento River	$250,000 per mile for dirt / $1M per mile for paved	In progress, will be evaluated as part of SCFRR grant
Health Equity	System-wide upgrades and repairs to community drinking water system	$2.6M	Concept

SAFE COMMUNITIES

Subject	*Description*	*Cost*	*Status*
Transportation	Improve pedestrian safety near Sci-Tech Academy	TBD	Concept on HW 113; speed humps installed on Rail Road St.
Transportation	Reduce localized flooding by constructing new drainage detention basin (Drainage study in progress)	TBD	Will be designed and permitted as part of SCFRR grant
Public Safety	Repairs to KL Fire Station	$40,000	Repairs identified, funding needed
Public Safety	Resident deputy for Knights Landing	$200,000 / yr	Concept
Public Safety	Levee repairs – Sac River	$12M	In progress, SCFRR grant
Public Safety	Levee repairs – Knights Landing Ridge Cut	$16M	In progress, SCFRR grant
Public Safety	New cross levee – provide 100-year flood protection	$33M	In progress, design and

			permitting through SCFRR grant

SUSTAINABLE ENVIRONMENT

Subject	*Description*	*Cost*	*Status*
Utilities	Long-term CIP needed for water and wastewater services	$80,000	Concept
Waste	Provide recycling and green waste services *(Note: Waste management services provided by Waste Management)*	TBD	Concept

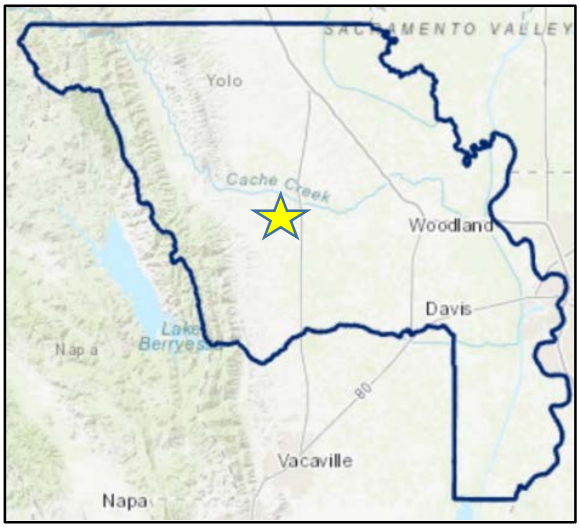
FLOURISHING AGRICULTURE

Subject	*Description*	*Cost*	*Status*
	Projects not yet identified		

ROBUST ECONOMY

Subject	*Description*	*Cost*	*Status*
Economy	100-year flood protection needed	$90M	In progress

Madison Community Profile



Madison is located in the central portion of Yolo County, just west of the intersection of I-505 and HWY 16 and lies within Supervisorial District 5. Madison is designated as a "disadvantaged community" and "Low/Moderate Income" area by some state standards.

Public water and wastewater services are provided by the Madison Community Services District. Madison lies within the 100-year flood zone and is subject to localized flooding during moderate precipitation events.

Demographics, 2010 Census
Safety Net Data, Yolo County HHSA, June 2020

Madison	
Total population	727
Median age (years)	28.6
Estimated MHI	$64,904
Race	
White	44.5 %
Latino	52 %
American Indian	0.6 %
African American	1.8 %
Occupied Housing Units	141
Owner-occupied Units	63 %
Poverty	3 %
Medi-CAL	35 %
CalFresh	10 %

Madison Needs Assessment

THRIVING RESIDENTS

Subject	*Description*	*Cost*	*Status*
Health Equity	Benches and shade structures at soccer fields	$30,000	Concept
Transportation	Relocate Yolo Bus shelter closer to migrant housing	$300,000	Concept
Health Equity	Projects to be developed by Rural Health Coordinator	Funded	In progress

SAFE COMMUNITIES

Subject	*Description*	*Cost*	*Status*
Public Safety	Replace fire station	$1.3M	Concept
Public Safety	Obtain specialized off-road equipment to be able to respond to OHV incidents in Cache Creek	$30,000	In progress, OHV grant funds avail. Jan 2021
Public Safety	22KW generator needed for emergency backup power for Madison Fire Dist.	$50,000	Concept
Public Safety	Implement flood risk reduction projects to divert flood waters from Madison *(Note: $348,000 awarded to County from CALOES in FY19/20 for purpose of flood project(s) design*)	TBD	Approx. $600,000,000 spent in FY 19/20 & 20/21 on Madison flood projects; addt'l projects under design

SUSTAINABLE ENVIRONMENT

Subject	*Description*	*Cost*	*Status*
Utilities	Repair/replace water system, add storage tank, meet fire flow requirements (Project cost: $6.6M; assume 10% cost share)	$660,000 (local cost share)	In progress, seeking funding
Utilities	Investigate odor from wastewater treatment ponds *(Note: Could refer to YSAQMD)*	TBD	N/A

FLOURISHING AGRICULTURE

Subject	*Description*	*Cost*	*Status*
Housing	Adequate (non-farm labor) affordable housing needed	TBD	Concept
Housing	Keep migrant housing open year round (*Note: Would require federal advocacy*)	TBD	Concept

ROBUST ECONOMY

Subject	*Description*	*Cost*	*Status*
Economy	100-year flood protection needed	$345,000	25-yr flood protection attained in FY 19/20; addt'l project designs under development with CalOES grant

Town of Yolo Community Profile

Yolo is located five miles north of Woodland along I-5 and lies within Supervisorial District 5. Cache Creek runs immediately south of the town. Yolo is considered a "Low/Moderate Income" area by some state standards.

Public water is provided by the Cacheville Community Services District.

Demographics, 2010 Census
Safety Net Data, Yolo County HHSA, July 2020

Town of Yolo	
Total population	452
Median age (years)	36
Estimated MHI	$61,563
Race	
White	62 %
Latino	34 %
American Indian	0 %
African American	2 %
Occupied Housing Units	165
Owner-occupied Units	48 %
Poverty	9 %
Medi-CAL	232
CalFresh	77

Town of Yolo Needs Assessment

THRIVING RESIDENTS

Subject	*Description*	*Cost*	*Status*
Health Equity	Basketball court and associated small park infrastructure	$20,000	Concept
Utilities	Infrastructure assessment & CIP for Cacheville CSD	$60,000	Concept
Education	Replace Yolo Branch Library	$4M	In progress; funded through ACO

SAFE COMMUNITIES

Subject	*Description*	*Cost*	*Status*
Public Safety	Replace well and provide adequate water storage and treatment for community drinking water supply	$1.5M	Concept
Public Safety	Implement flood risk reduction projects to reduce flood risk to Yolo	$15M	Flood Risk Reduction study completed in 2019

SUSTAINABLE ENVIRONMENT

Subject	*Description*	*Cost*	*Status*
	Projects not yet identified		

FLOURISHING AGRICULTURE

Subject	*Description*	*Cost*	*Status*
	Projects not yet identified		

ROBUST ECONOMY

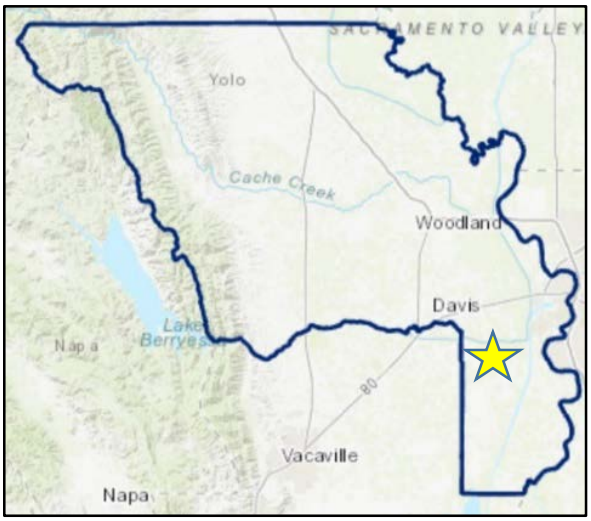
Subject	*Description*	*Cost*	*Status*
	Projects not yet identified		

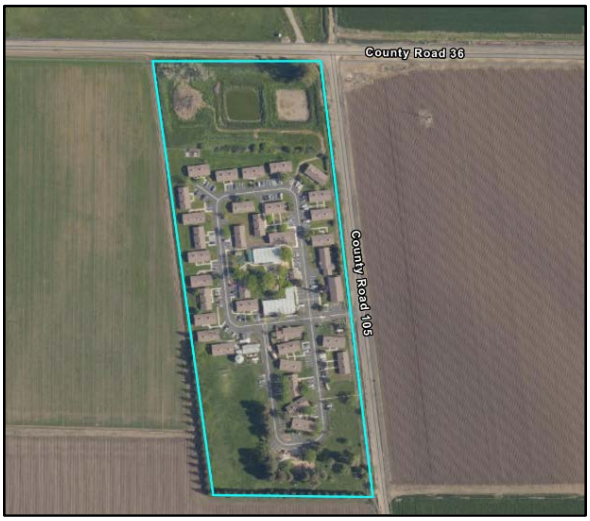
Appendix A – Migrant Housing Community Needs

There are two migrant housing communities within Yolo County: The Davis/Dixon Migrant Center and the Madison Migrant Center. Both are owned and operated by the Yolo County Housing Authority, with financial assistance from the state and federal government. Several project suggestions for the migrant housing communities surfaced during the data gathering phase of this project. A short profile for each migrant housing community is provided below. Migrant housing project suggestions are compiled on the following pages.

Davis Migrant Center

31150 County Road 105, Dixon

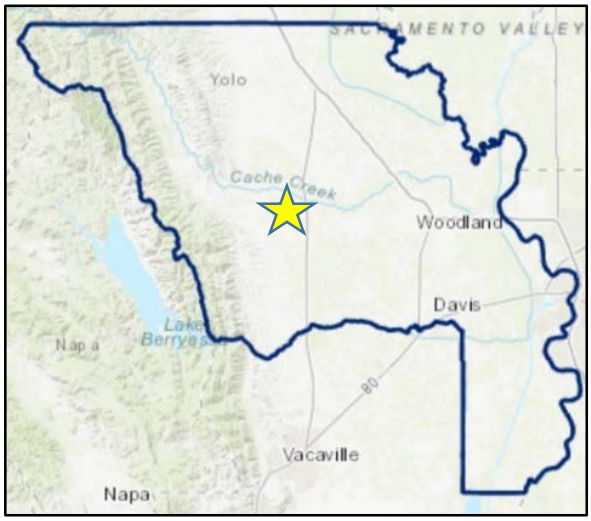




9 Two Bedroom Units, 44 Three Bedroom Units, 11 Four Bedroom Units

Madison Migrant Center

28285 HWY 16, Madison



14 Two Bedroom Units, 61 Three Bedroom Units, 13 Four Bedroom Units

Davis Migrant Center Needs Assessment

THRIVING RESIDENTS

Subject	*Description*	*Cost*	*Status*
Health Equity	Install gym/recreation space with exercise bikes and weight machines	TBD	Concept
Education	Provide computer(s), printer(s), and Wi-Fi at the migrant center	$50,000	Concept

SAFE COMMUNITIES

Subject	*Description*	*Cost*	*Status*
Transportation	Install bus stop at the migrant center	$350,000	Concept
Infrastructure	Create hotline for migrant center residents to report crime, housing issues, transportation help, connection to services	TBD	Concept
Infrastructure	Upgrades to existing radio tower at County Landfill to increase broadband capacity at Davis Migrant Camp	$10,000 onetime; $20,000/yr ongoing	Concept

SUSTAINABLE ENVIRONMENT

Subject	*Description*	*Cost*	*Status*
	Projects not yet identified		

FLOURISHING AGRICULTURE

Subject	*Description*	*Cost*	*Status*
	Projects not yet identified		

ROBUST ECONOMY

Subject	*Description*	*Cost*	*Status*
	Projects not yet identified		

Madison Migrant Center Needs Assessment

THRIVING RESIDENTS

Subject	*Description*	*Cost*	*Status*
Health Equity	Install gym/recreation space with exercise bikes and weight machines	TBD	Concept
Health Equity	Freezers are undersized for number of residents per unit. Residents cannot take advantage of bulk purchases or large batch cooking of healthy meals.	$500 per unit	Concept
Education	Provide computer(s), printer(s), and Wi-Fi at the migrant center	TBD	Concept

SAFE COMMUNITIES

Subject	*Description*	*Cost*	*Status*
Transportation	Install bus stop at the migrant center, it is dangerous for residents to walk along HWY 16	$350,000	Concept
Infrastructure	Create hotline for migrant center residents to report crime, housing issues, transportation help, connection to services	TBD	Concept

SUSTAINABLE ENVIRONMENT

Subject	*Description*	*Cost*	*Status*
Transportation	Residents must travel to Esparto for laundry machine change. Installation of change machine or reloadable "credit" card would reduce VMTs	$4,000-10,000	Concept

FLOURISHING AGRICULTURE

Subject	*Description*	*Cost*	*Status*
Housing	Address labor shortages/affordable housing shortage by keeping the Madison Migrant Center open year round	TBD	Concept

ROBUST ECONOMY

Subject	*Description*	*Cost*	
	Projects not yet identified		

Appendix B – Community Services District Needs

Small rural communities in unincorporated areas need basic services like water, wastewater management, security, fire protection, street lighting, vector control, and recreation. Since counties often consist of large and diverse geographical areas, it is difficult to provide tailored community services to any one community. Small rural communities usually do not have the tax base to necessary to incorporate services into their own city. Consequently, the Community Services District Law (Gov. Code §61000-61850) was created to provide an alternate method of providing services in unincorporated areas. Community services districts are governed by residents who live with the serve area boundary through local elections. Community service districts localize the costs and benefits of public services: CSDs let local residents get the services they desire at the price that they are willing to pay.

Yolo County currently has four (4) community services districts (CSDs):

- Cacheville Community Services District
- Esparto Community Services District
- Knights Landing Community Services District
- Madison Community Services District

While these CSDs are independent legal districts, they are subject to review by Yolo LAFCo. LAFCo has the authority to review and make determinations on the following:

(1) Growth and population projections for the affected area.
(2) Present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies.
(3) Financial ability of agencies to provide services.
(4) Status of, and opportunities for, shared facilities.
(5) Accountability for community service needs, including governmental structure and operational efficiencies.
(6) Any other matter related to effective or efficient service delivery, as required by commission policy.

Further, LAFCo has the power to approve or deny consolidation or reorganization of special districts, as well as jurisdictional and service area boundaries, add or remove legal powers/services provided by districts, and conduct periodic Municipal Services Reviews to ensure adequate provision of services.

This appendix provides an overview of each community services district within Yolo County and a summary of known deferred maintenance and/or recommended improvements. The improvements are further organized by 1) immediate improvements required for service delivery and 2) improvements anticipated to be needed by 2030 to allow for anticipated growth. A summary of estimated near and long-term costs is provided on the following page.

Estimated Community Services District Infrastructure Improvement Costs*

Cacheville Community Services District	
Total Recommended Near-Term Improvements	$ 1,300,000
Total Recommended Long-Term Improvements	$ 5,500,000

Esparto Community Services District	
Total Recommended Near-Term Improvements	$12,550,000
Total Recommended Long-Term Improvements	$15,130,000

Knights Landing Community Services District	
Total Recommended Near-Term Improvements	$ 7,805,000
Total Recommended Long-Term Improvements	$ 10,210,000

Madison Community Services District	
Total Recommended Near-Term Improvements	$ 7,310,000
Total Recommended Long-Term Improvements	$ 17,250,000

**Additional detail and information pertaining to recommended improvements for each CSD is found in the following pages of this Appendix.*

Cacheville Community Services District

PO Box 268, Yolo, CA 95697 **www.*cacheville.specialdistrict.org***

The Cacheville Community Services District (CSD) is located four miles north of the City of Woodland and provides domestic water and street lighting services to the town of Yolo, which is approximately 89 acres in size. The town of Yolo is located along County Road 99W and the Union Pacific Railroad, south of County Road 17 and Washington Street, west of Cache Creek and County Road 98, and north of County Road 97B and Interstate 5.

The Cacheville CSD was formed on September 8, 1970 and was originally given the ability to provide water and wastewater services to the town of Yolo. The District never utilized its power to provide wastewater services, however, as the community uses private septic tanks for wastewater disposal in the area. The District added street lighting services in 1978 and acts as a pass-through agency with Pacific Gas and Electric Company (PG&E) for street lighting. Currently, the District provides street lighting services as well as domestic water supply for 165 housing units (US Census, 2010).

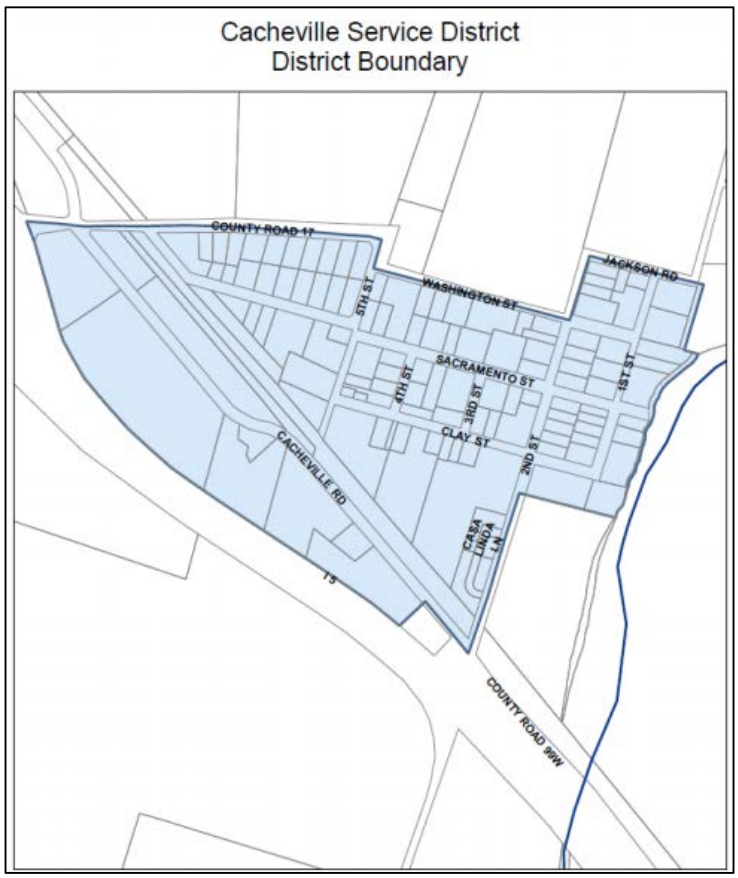
Service area
89 acres
452 population (2010)
165 housing units
13 commercial units

Services provided
Water, street lighting
**all connections are metered*

District Staff
Clerk, part-time
Water Distribution Operator, part time

Municipal Service Review
July 2014
October 2006

Special Studies
2011 Final Facility Master Plan, Yolo County



Near-Term Improvements to Existing System

The water system was constructed in the 1970s and consists primarily of 4-inch diameter and 6-inch diameter pipes, many of which are undersized. Existing non-residential fire flows do not meet current requirements and the pipes are in need of expansion to provide adequate pressures for fire flows. The calculated current average day use based on standard demand rates and known land uses is 122 gpm.

There are two wells that are a part of the system (see Figure 1, page 35) – Washington Street Well (Well 1) and Sacramento Street Well (Well 2). Well 2 serves as a backup well. Well 1 has a reported capacity of 1,000 gpm. Well 2 capacity is reported at 100 gpm. Well 1 is equipped with a 100 hp pump and is connected to two 5,000-gallon hydropneumatic tanks. Both Well 1 and Well 2 receive chlorination treatment at the well head. Cacheville CSD staff indicate that the water system performs satisfactorily under current domestic water demands, but additional facilities would be required to handle all but a nominal amount of additional development. Back-up power is not available at the wells.

The combined pumping capacity from the wells (1000 gpm) is not adequate to meet either residential or commercial fire flow requirements (1,500 gpm residential and 2,500 commercial, respectively).

In summary, the current system has the ability to meet the existing domestic supply needs of the community but does not appear to have the ability to meet fire flow requirements without improvements. Additionally, upsizing the pumps would not resolve the fire flow deficiencies: inadequate pipeline diameter sizing throughout water distribution system constrains the delivery of these flows. The existing developed area would benefit from the upsize or replacement of some pipes and a storage tank, possibly in combination with a booster pump for fire flow and increased system reliability in the event wells are out of service.

Recommended Improvements	
Water Main Upsizing	Est. Cost: $ 1,000,000
Upsize Water Pump and Provide Backup Power	Est. Cost: $ 300,000
Total Recommended Near-Term Improvements	**$ 1,300,000**

Figure 1. Proposed Water System Configuration – 2030 Buildout

LEGEND

- EXISTING SYSTEM WATER MAIN
- PROPOSED WATER MAIN TO SERVE 2030 BUILDOUT & PROVIDE BACKBONE LOOP
- EXISTING WELL
- PROPOSED WELL
- PROPOSED STORAGE TANK

Long-Term Improvements to Existing System

A significant increase in the size of Cacheville is envisioned by the 2030 General Plan. The land use areas and their percentage of the total 2030 build-out area are summarized in Table 1 to provide an understanding of the scope of the 2030 growth compared to the existing CSD area. It should be noted that the areas designated as developed and served may not necessarily be fully developed and/or could be redeveloped in such a way that water demands could increase. From Table 1, the areas projected for future development make up a significant fraction of the currently served area, which indicates that facility upgrades will be needed to meet water demand needs associated with the projected growth.

Table. 1 Existing and Future Development Acreages

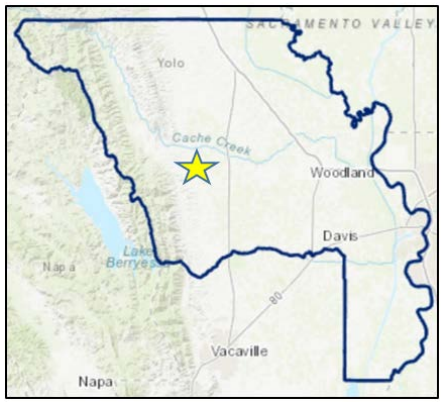
Development Category	Acreage	Percent of 2030 Build-out
Developed and Served	78 acres	61.9 %
Future Development	48 acres	38.1 %
Total	126 acres	100 %

The 2030 growth area build-out envisioned in the General Plan expands the developed area of Cacheville from 78 acres to approximately 126 acres (an increase in service area of approximately 62%). This increase will require upsizing some of the existing water mains and the addition of system looping to increase the reliability of the current water distribution and supply system. Average day demand for the existing condition based on land use is calculated as 118 gpm and is expected to increase to 266 gpm under 2030 build-out conditions – an increase by a factor of about 2.3. The water system that would be required to serve the build-out area will depend on phasing, actual land use, and actual land use patterns, but the following recommendations include the major elements that will be required.

Recommended Improvements	
Upgrade to 12” Transmission Main	Est. Cost: $ 1,500,000
New Backup Well (>500 gpm)	Est. Cost: $ 750,000
New Primary Well (>1,500 gpm)	Est. Cost: $ 1,750,000
New Water Storage Tank (0.4 MG)	Est. Cost: $ 1,500,000
Total Recommended Long-Term Improvements	**$ 5,500,000**

Esparto Community Services District

26490 Woodland Ave, Esparto, CA 95627 **www.*ecsd-ca.org***



The Esparto Community Services District was founded in 1969, replacing the Esparto Sanitary District, and is authorized to provide water, wastewater, and street lighting services to the approximately 3,108 residents of the unincorporated community of Esparto (US Census Bureau, 2010).

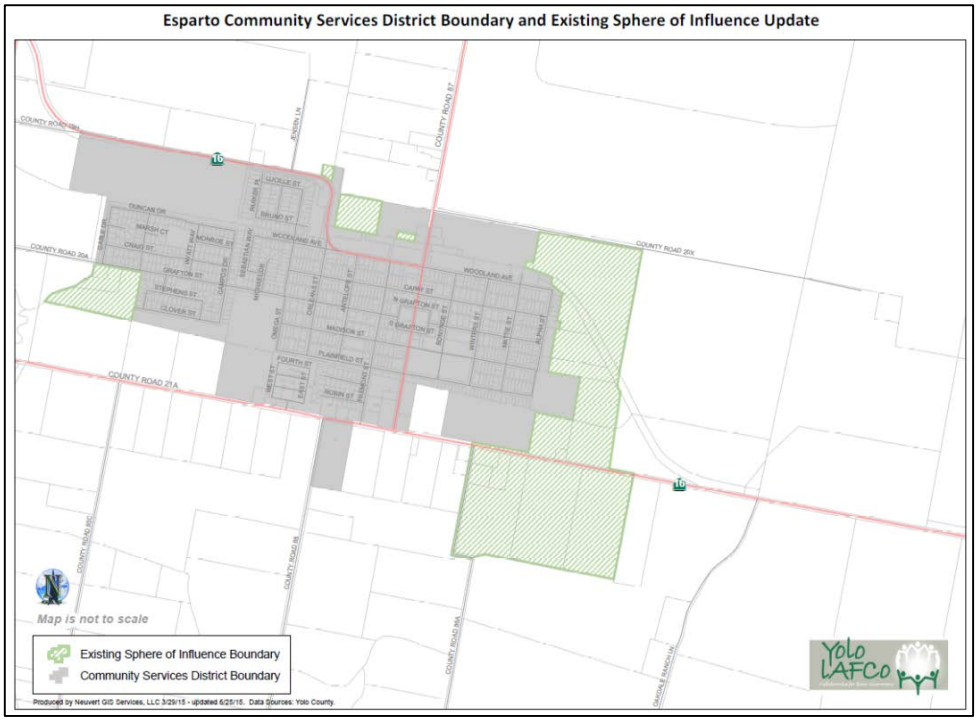
The Esparto CSD is located on Highway 16 between the communities of Madison and Capay. See the map below for greater detail.

Service area
531 acres
3,108 residents (2010)
1,025 water connections
1,107 sewer connections

Services provided
Water, wastewater, street lighting, parks and recreation
**Connections are not metered*

District Staff
General Manager
Fiscal Officer
4 water/sewer staff
1 parks maint. staff
Total: 7 FTEs

Municipal Service Review
July 2015



Special Studies
2011 Final Facility Master Plan, Wood Rogers (Yolo County)
2003 Esparto CSD Facilities Update Plan, Psomas, (Esparto CSD)

Near-Term Improvements to Existing System

Water Supply and Distribution

The Esparto CSD owns, operates and maintains the water system servicing the community of Esparto, which serves a total of 1,025 water connections. According to the District's Facility Master Plan (2011), the system's infrastructure includes:

- Five (5) wells- Well 1A, Well 5, Well 5B and Well 6
  (Well 5B depth is 1,200 ft; all other wells have depth of 400 feet)
- Emergency well- The Well 4 is not currently in use due to adequacy issues, but still connected to the system for emergency use
- 500,000-gallon storage tank
- Booster pump station
- Two (2) hydropneumatic tanks- connected to the distribution system in order to maintain system pressure and reliability

In total, the four in-service wells have a capacity of 2,100 gpm. Water from the wells is treated with chlorine for disinfection before entering the distribution system. Individual water service connections are not metered, but when a service is repaired or replaced a meter box is installed with a spacer to allow for future placement of a water meter.

The primary concern of the CSD with the existing system at this time is improving the flow capacity in older sections of the town by either upsizing or additional water main looping.

Wastewater Collection and Treatment

The existing wastewater collection system consists primarily of vitrified clay pipe with diameters ranging from 4-inch through 12-inch. The collection system flows by gravity to a treatment pond system on the easterly side of Esparto. A pump station is located at the headworks to the treatment ponds and is pumped into ponds by a submersible pump lift station equipped with two 500 gpm submersible Chicago pumps. Operators indicate that the collection system has both maintenance and repair problems at various locations around town, including:

- Inverted siphon passing under Lamb Valley Slough
- Sewer trunk on Omega Street located between the cross streets of Grafton Street and Capay Street
- Inadequate capacities in three sewer trunks flowing west to east between Madison Street and Woodland Avenue
- Infiltration of groundwater into sewer lines and inflow of surface water into the treatment ponds

The CSD owns 90 acres of land, which are intended to be used for treatment ponds or other treatment and disposal facilities. However, the actual useable property is approximately 75-acres, containing 10 ponds totaling 42.7 acres. A portion of the 90 acres is impaired by the South Fork

Willow Slough, Lamb Valley Slough, and Oakdale Ranch Lane, which reduces the usable property to approximately 75 acres. This property currently contains 10 ponds totaling approximately 42.7 acres. Wastewater drains by gravity to a pump station located at the headworks to the treatment ponds and is pumped into the ponds by means of a submersible pump lift station equipped with two 500 gpm submersible Chicago pumps. The existing 42.7 acres of ponds are divided by Oakdale Ranch Lane, which progresses in a northerly direction from Highway 16. The existing system is configured with Ponds 1-6 totaling 12.7-acres on the west side of Oakdale Ranch Lane and four ponds totaling a measured 30-acres to the east of the Lane. Ponds 1 and 2 are treatment ponds, and the remaining ponds are disposal ponds. Currently, the remainder of the CSD property is used as an emergency overflow area. Levees around the ponds provide a barrier between the ponds and the adjacent Lamb Valley Slough and South Fork Willow Slough.

There are no improvements needed in the near-term for the wastewater treatment system, however, the Esparto CSD is pursuing a wastewater recycling project that would allow the CSD to use treated wastewater to irrigate the park/open space lands it is responsible for maintaining, resulting in a 20% reduction in use of groundwater. This wastewater recycling project is shovel ready and is estimated to cost $6.6M.

Recommended Improvements

Water System Improvements

Water Main Upsizing	Est. Cost: $ 5,600,000
Total Recommended Near-Term Water Improvements	**$ 5,600,000**

Wastewater System Improvements

8-inch Sewer Trunk Diversion	Est. Cost: $ 220,000
Sewer Lift Station and Force Main	Est. Cost: $ 130,000
Wastewater Recycling project	Est. Cost: $ 6,600,000
Total Recommended Near-Term Wastewater Improvements	**$ 6,950,000**
Cumulative Recommended Near-Term Improvements	**$ 12,550,000**

Long-Term Improvements to Existing System

Future Water Supply and Distribution – 2030 Expected Growth

The 2030 growth area build-out envisioned in the General Plan expands the developed area of Esparto from 235 acres to approximately 614 acres (an increase in service area of approximately 2.6 times). This increase will require increases in the size and reliability of some portions of the current water distribution and supply system. The current average daily demand is 651 gpm and is expected to increase to 1,500 gpm under 2020 build-out conditions. Current fire flow requirements are expected to increase from 2,500 gpm to 3,500 gpm.

Table 2. Water System – Current vs. Expected Demand

Requirement	Current	2030 Build-out
Average Daily Demand	651 gpm	1,500 gpm
Max. Fire Flow	2,500 gpm	3,500 gpm

Future Wastewater Collection and Treatment – 2030 Expected Growth

Similar to the water system, the growth area for 2030 build-out will require a sizable expansion of Esparto's wastewater collection and treatment system. The peak sewer flow generation is expected to increase from the existing condition flow, estimated at 1.87 MGD, to a projected 2030 build-out flow of 4.58 MGD – an increase by a factor of approximately 2.4.

Recommended improvements to the wastewater collection and treatment system to accommodate the growth projected by the County's 2030 General Plan are provided below.

Recommended Long-Term Improvements

Water System Improvements

Transmission Main Loop	Est. Cost: $ 2,630,000
New Water Supply Well(s)	Est. Cost: $ 1,200,000
Additional Water Storage	Est. Cost: $ 2,600,000
Total Recommended Long-Term Water Improvements	**$ 6,430,000**

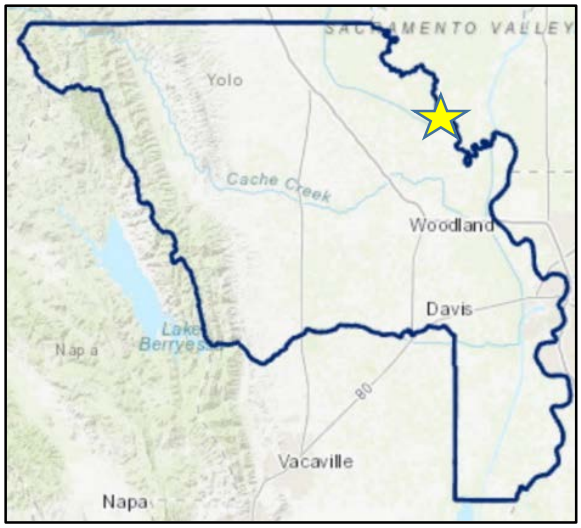
Wastewater System Improvements

Gravity Collector System (New Development)	Est. Cost: $ 2,500,000
Upsize of existing 12" Trunk Line & Relief Sewer Line	Est. Cost: $ 1,000,000

New Lift Station at Pond Outfall	Est. Cost: $ 900,000
Upsize Collector Sewers	Est. Cost: $ 1,750,000
Land Acquisition (80-acres for new ponds)	Est. Cost: $ 800,000
New Storage Pond(s)	Est. Cost: $ 650,000
New Aeration Pond(s)	Est. Cost: $ 500,000
Construct Effluent Irrigation System	Est. Cost: $ 600,000
Total Recommended Long-Term Wastewater Improvements	**$ 8,700,000**
Cumulative Recommended Long-Term Improvements	**$15,130,000**

Knights Landing Community Services District

PO Box 548, Knights Landing, CA 95645 ***www.klcsd.specialdistrict.org***



The Knights Landing Community Services District (CSD) was established in May 1968 to provide water, wastewater treatment, street lighting, and parks and recreation services to the community of Knights Landing. The CSD received LAFCo approval to add storm drainage services to its list of powers in 2007. Effective July 2020, the Knights Landing CSD Board approved an agreement with the Madison CSD for Madison CSD staff to provide general operations and management services.

The community of Knights Landing is located on State Highway 113 adjacent to the Sacramento River. The current boundaries for the Knights Landing CSD roughly correspond to the perimeter of the developed areas in the community of Knights landing, with the addition of a few agricultural parcels immediately adjacent to the community.

Service area
220 acres
995 residents (2010)
380 housing units
287 connections

Services provided
Water, wastewater, street lighting, parks and recreation, storm water
**Connections are not metered*

District Staff
Madison CSD staff (contract)
Part-time bookkeeper
Total: 2.0 FTE's

Municipal Service Review
December 2014

Special Studies
2011 Final Facility Master Plan, Wood Rogers (Yolo County)

Knights Landing Community Services District Boundary and Sphere of Influence

Near-Term Improvements to Existing System

Water Supply and Distribution

The Knights Landing CSD owns, operates and maintains the water distribution system serving the town of Knights Landing. The water system was constructed in the 1970s and consists primarily of 6" diameter pipes, many of which are undersized. Existing non-residential fire flows do not meet current requirements, and the pipes are in need of expansion to provide adequate pressures for fire flows. Average daily water demand is roughly 200 gpm, with a peak demand of 695 gpm. The community water supply is drawn from three (3) active wells.

Well	Capacity (gpm)	Constructed	Depth (ft)	Status
Well 3 (Railroad St.)	500	1971	332'	Active
Well 4 (Ridge Cut)	1,000	1981	342'	Active
Well 5 (Third St.)	1,500	1999	402'	Active

The combined pumping capacity of the three (3) active wells should allow the system to meet fire flow requirements (1,500 gpm residential and 2,500 gpm commercial). However, the 4-inch and 6-inch diameter piping throughout the system constrains the delivery of flows, and the pipes are in need of expansion to provide adequate pressure for fire flows. In summary, the District's water system has the capacity to meet the community's existing water supply needs but cannot meet fire flow requirements without improvements. The addition of above ground water storage is needed to ensure adequate water capacity and pressure. Above ground storage is estimated to cost $500,000.

Well 3 is recommended for replacement because of its age and recent problems with water quality; typically wells experiencing these issues experience further degradation over time. Well 3 is also losing thousands of gallons of water per month due to leaks. Replacement valves and tank repairs to stem the leaks are estimated to cost $5,000-10,000. The CSD reports that Well 3 occasionally pumps sand. It is recommended that the well apparatus be removed and the well be cleaned and inspected. This maintenance will cost approximately $25,000. The system proposed for 2030 assumes a production rate of 3,000 gpm from the existing wells. Subsequently, the new well is proposed to have a capacity of 1000 gpm to address future demand as well as the replacement of existing Well 3. The CSD reports that Well 5 occasionally has water quality issues with metals.

Upsizing exiting water mains would serve to improve fire flow capacities within the distribution system and benefit the future development areas by providing additional transmission capacity through the existing area. A study to determine upsizing requirements was not part of this analysis. Water distribution system modeling is recommended to confirm the appropriate upsizing using fire flows appropriate to the existing and planned land use, as well as to plan for service to future growth areas. The approximate total length of existing 4-inch/6-inch diameter lines is about 20,985 lineal feet. All public water systems are required to meter their water deliveries by 2025. Knights Landing CSD does not have meters installed. The estimated cost for metering is $500,000.

Wastewater Collection and Treatment

Wastewater from the collection system drains by gravity to the wastewater treatment facility located on 51.5-acres of property, southeast of town. The treatment facility is adjacent to the Knights Landing Ridge Cut, which is located on a 473-acre parcel of land under Williamson Act contract. The treatment facility consists of 10 facultative ponds plus a "spreading area" that serves as an emergency holding area to accommodate excess hydraulic flows during years of heavy flooding.

The facultative ponds were originally constructed in 1977 and have reached their current configuration in stages over the years. The latest modification was completed in 2008; improvements included the addition of two ponds to the then-current eight pond system to increase the treatment system capacity to 0.112 mgd. The lift station at the treatment pond headworks consists of a sump structure and two submersible-style pumps which transfer water into the treatment ponds through a common 6-inch diameter pipeline. The lift station pumps incoming wastewater from an elevation of 13.19 feet at the sump intake into the facultative ponds, which operate at a design water surface elevation of 28.3-feet.

Pond sludge removal should occur approximately once every 10-15 years. The last documented sludge removal occurred in 2005 in pond 8.

The current wastewater treatment system has the ability to meet the current need with some minor upgrades. The wastewater distribution system needs replacement and a new forced main to the ponds. The system also needs new pumps and a solids separator. The estimated cost for these improvements is $1,720,000. The CSD has applied for a infrastructure planning grant ($160,000) from the State Water Resources Control Board for the planning, design, and engineering of these improvements. There is no local match required for this funding source.

The wastewater treatment system is sized to accommodate current development. To increase system reliability, an emergency alarm system is recommended at the lift station to alert the operator if the lift station pumps fail.

Recommended Improvements

Water System Improvements

Water Main Upsizing	Est. Cost: $ 3,550,000
New well	Est. Cost: $ 1,500,000
Maintenance of Well 3	Est. Cost: $ 35,000

Addition of above ground storage tank	Est. Cost: $ 500,000
Installation of water meters	Est. Cost: $ 500,000
Total Recommended Near-Term Water Improvements	**$ 6,085,000**

Wastewater System Improvements

New Lift Station at Outfall to Ponds	Est. Cost: $ 650,000
Parallel Collector Sewer	Est. Cost: $ 570,000
Installation of Solids Separator	Est. Cost: $ 500,000
Total Recommended Near-Term Wastewater Improvements	**$ 1,720,000**
Cumulative Recommended Near-Term Improvements	**$ 7,805,000**

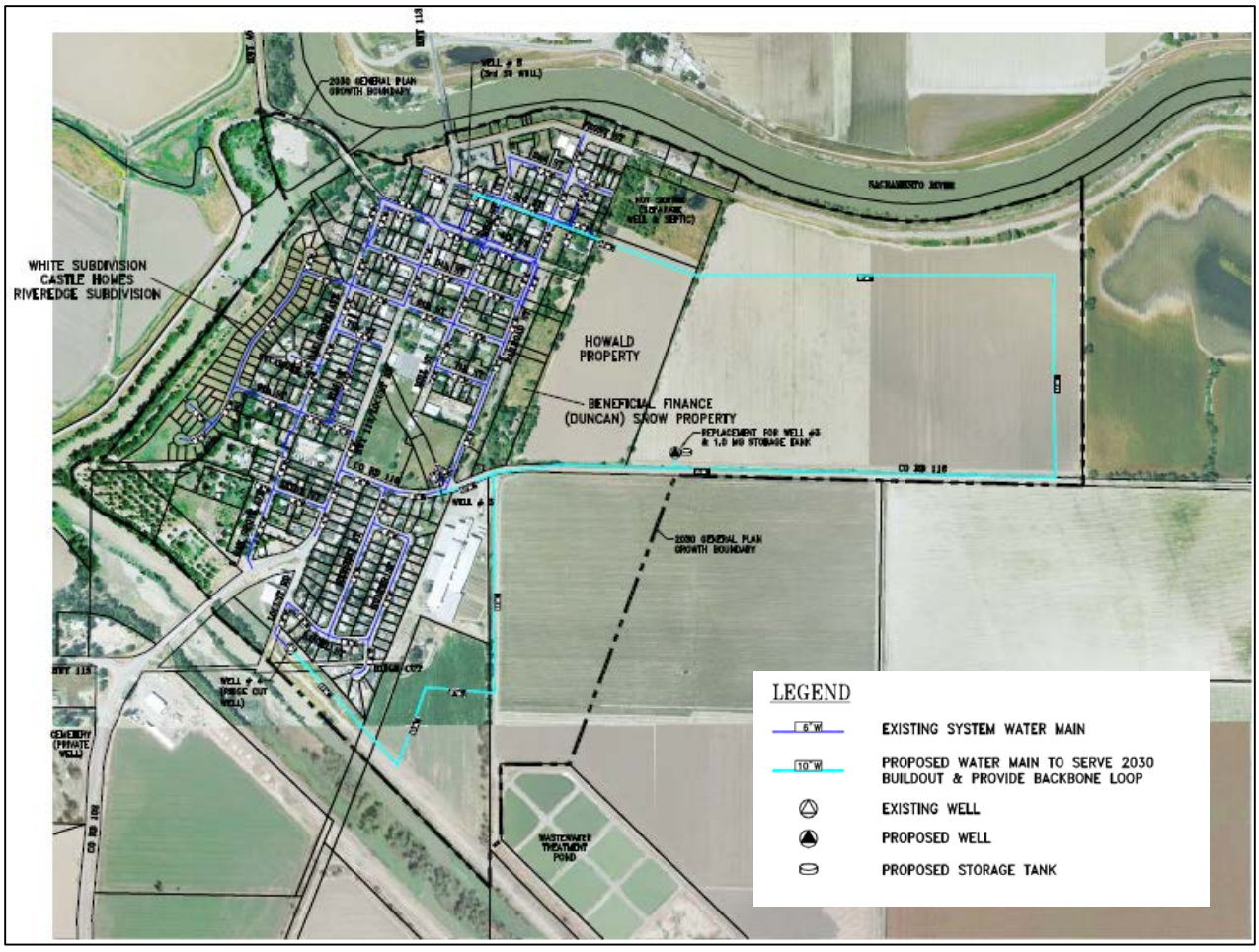
Long-Term Improvements to Existing System

Future Water Supply and Distribution – 2030 Expected Growth

The 2030 growth area build-out envisioned in the General Plan expands the developed area of Knights Landing from 151 acres to approximately 407 acres (an increase in service area of approximately 2.7 times). This increase will require a significant increase in the size and reliability of the current water distribution and supply system.

Average day demand for the existing condition based on land use is calculated as 203.9 gpm and is expected to increase to 976.7 gpm under 2030 build-out conditions – an increase by a factor of almost five. The 2030 system presented assumes a fire flow requirement of 2,500 gpm. Figure 2, below, is a conceptual future build-out schematic prepared by Wood Rodgers in 2012.

Figure 2. Water Distribution System – 2030 Buildout



It is recommended that additional water mains which loop through the future growth areas and connect to the existing distribution system be provided for water circulation to all areas and allow fire flow to come from wells throughout the community with a minimal head loss. The loops shown in Figure 2, above, represent about 11,000 feet in new distribution trunks and would be constructed in phases. Detailed modeling of the entire pipe network would be needed to confirm the size of the pipe needed, but 10-inch and 12-inch diameter lines have been assumed for the purposes of previous study.

An additional well will be required to provide water supply for the future growth area. The 2030 system includes a new well assumed to both serve the future growth area and to replace Well 3. The new well is shown in the Specific Plan Area adjacent to the proposed storage tank (refer to Figure 2, above). The location of the well is approximate and will depend on phasing but should be located centrally to future development areas and be linked to the proposed transmission main loop.

Future Wastewater Collection and Treatment – 2030 Expected Growth

Similar to the water system, the growth area for 2030 build-out will require a significant expansion of Knights Landing's wastewater collection and treatment system. Based on the proposed General Plan land uses, the peak sewer flow generation is expected to increase from the existing condition flow, estimated at 0.704 MGD, to a projected 2030 build-out flow of 1.94 MGD – an approximate 3-fold increase. The collection system required to serve the build-out area will depend on development phasing, land use type, and land use patterns.

Recommended Long-Term Improvements

Water System Improvements

Transmission Main Loop	Est. Cost: $ 2,800,000
New Water Supply Well(s)	Est. Cost: $ 1,040,000
Additional Water Storage	Est. Cost: $ 2,600,000
Total Recommended Long-Term Water Improvements	**$ 6,440,000**

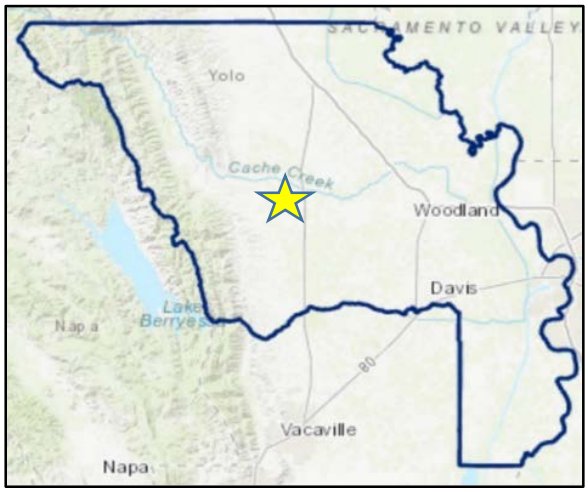
Wastewater System Improvements

Gravity Collector System (New Development)	Est. Cost: $ 1,680,000
Upsize/replace 12" Trunk Line	Est. Cost: $ 510,000
Treatment Pond Headworks Improvements	Est. Cost: $ 390,000

New Lift Station at Outfall to Ponds	Est. Cost: $ 650,000
Parallel Collector Sewer	Est. Cost: $ 570,000
Total Recommended Long-Term Wastewater Improvements	**$ 3,770,000**
Cumulative Recommended Long-Term Improvements	**$10,210,000**

Madison Community Services District

28963 Main Street, Madison, CA 95653 ***www.madisoncsd.org***



The Madison Community Services District was formed in 1966 to provide water, wastewater, street lighting, and parks and recreation services to the approximately 503 residents living in the unincorporated community of Madison (US Census, 2010). Additionally, an agreement between the Madison CSD and Yolo County Housing Authority (YCH) was established in 1968 authorizing the District to provide wastewater treatment and domestic water supply services to the Madison Migrant Center operated YCH. The Migrant Center is located at the District's eastern boundary, and houses about 300 people during the growing season from April through November each year. Effective July 2020, the Knights Landing CSD Board approved an agreement with the Madison CSD for Madison CSD staff to provide general operations and management services.

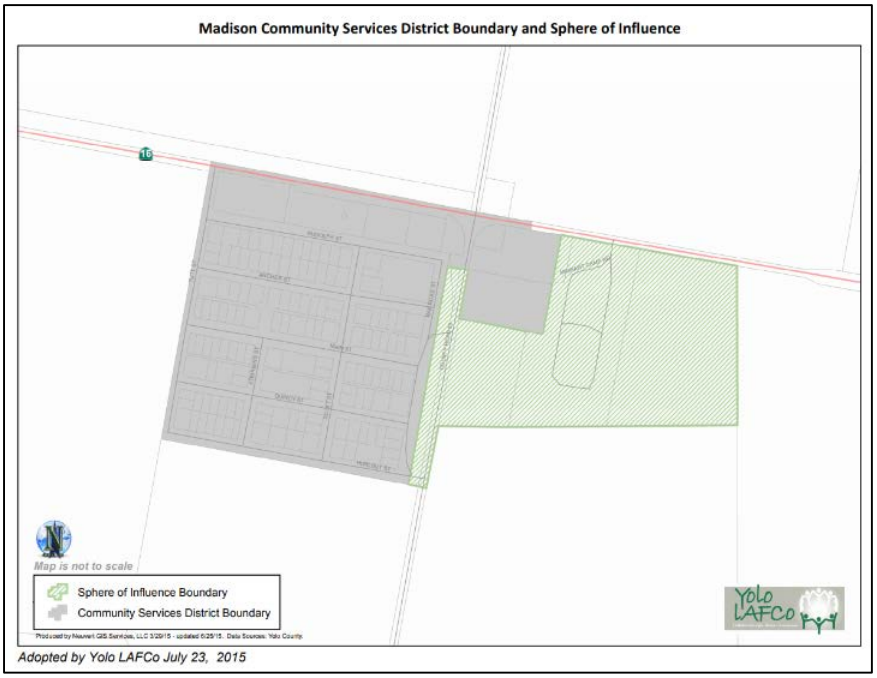
The Madison CSD is governed by a five-member Board of Directors. The District, which is staffed by a General Manager and a system operator, contracts with Esparto CSD for finance and administration services. The Madison CSD serves approximately 60 acres bounded by Highway 16 on the north and Interstate 505 on the east. The Madison Migrant Center is located outside the District boundaries but within the current SOI.

Service area
60 acres
503 residents (2010)
239 housing units
248 connections

Services provided
Water, wastewater, street lighting, and parks and recreation
**Water not metered*

District Staff
Full-time manager
Full-time operator
Total: 2 FTE's

Municipal Service Review
December 2015



Special Studies
2011 Final Facility Master Plan, Wood Rogers (Yolo County)
Madison CSD Water Improvement Preliminary Engineering Report (Yolo County, 2018)

Near-Term Improvements to Existing System

Water Supply and Distribution

According to the Madison CSD Facility Master Plan (2011), the CSD's domestic water supply and distribution system was constructed in the 1960's and consists primarily of 6-inch diameter pipes made of transite. The system has three wells (Park Wells 1, 2, and 3). Park Well 3 is the primary well with a production rate of 500 gallons per minute (gpm). Park Well 1 is used as the back-up well, with a production rate of 450 gpm. Park Well 2 is considered an emergency backup well due to sand infiltration problems and is only capable of approximately 110 gpm.

Table 3. Existing Well Data

Well Name	Date Drilled	Capacity (gallons per minute)	Status
Park Well 1	Unk (1960's ?)	450 gpm	Not in use Requires submersible pump
Park Well 2	2007	110 gpm	Current backup well
Park Well 3	2010	650 gpm	Main Well

The 2011 Facility Master Plan reports that the Madison CSD water system's transite pipe distribution network is prone to water main breaks and leaks, with approximately four to six major breaks per year. The system is also unable to meet state mandated fire flow requirements, as discussed previously. The system requires several near-term improvements to address these issues, including replacement of the transite water main pipes, upsizing of the existing water mains from 6-inch to 12-inch, and the addition of a 0.25 MG storage tank. The District also hopes to add water meters to all connections in order to more accurately charge for water usage.

Madison CSD charges a flat rate of $36 per month (2020) for residential water use, resulting in water system revenues of approximately $217,000 per year. Its current rate structure is not sufficient to fund near-term infrastructure improvements. The 2018 Preliminary Engineering Report (Coleman Engineering, 2018) recommends that the CSD set aside approximately $25,500 per year in a new "Asset Reserve" account. Table 4, below, describes the assets that their anticipated replacement schedule.

Table 4. Asset Replacement Reserve Fund Recommendations

Description	Replacement Cost	Type of Reserve	Annual Reserve Requirement
Well 1 Pump and Motor	$60,000	15 years	$4,000
Disinfection System	$15,000	10 years	$1,500
High Flow Pumps	$150,000	20 years	$7,500
Low Flow Pumps	$100,000	20 years	$5,000
Emergency Generator	$150,000	20 years	$7,500
		Total =	**$25,500**

The District has analyzed the need to raise its rates but has concerns that even a modest increase will have a significant impact on the small ratepayer base. The median income in Madison community is $40,221, which is only 70% of the statewide median of $57,708, qualifying the community to apply for funding as a "Disadvantaged Community" as the median income is less than 80% of the state median. (Coleman, 2018)

Wastewater Collection and Treatment

The existing wastewater collection system consists of 6-inch and 8-inch vitrified clay pipe that was constructed in the 1960's. The collection system flows by gravity to a treatment pond system on the easterly side of Madison. Operators indicate that the collection system has very few repair or maintenance requirements. However, from a downstream stream wastewater treatment standpoint, infiltration of ground water and inflow of stormwater into the collection system is a concern and a burden on the treatment system. The CSD's wastewater permit requires that the treatment pond system have adequate capacity to hold stormwater from a 100-year storm event, plus two (2) feet of freeboard.

The Madison CSD is served with a facultative pond-type wastewater treatment facility. Facultative ponds are designed with an aerobic layer in the top few feet of the liquid surface, an anaerobic layer in the bottom few feet, and a facultative region between that is partly aerobic and partly anaerobic. Aeration is accomplished without the need for deep mixing by mechanical means. The upper aerobic zone of the pond serves to minimize odor resulting from off-gases produced from the lower anaerobic zones. There are no effluent requirements since the ponds do not discharge into receiving waters. Sludge levels are evaluated annually for determination of removal needs. The CSD plans to implement a semi-annual sludge cleaning program once it secures the necessary equipment (estimated at $60,000).

Recommended Near-Term Improvements

Water System Improvements

Implement Water System Replacement project	$ 6,600,000
Total Recommended Near-Term Water Improvements	**$ 6,600,000**

Wastewater System Improvements

Upsize Existing Trunk System	$ 150,000
Sludge Removal Maintenance Equipment	$ 60,000
Solid Waste Removal Auger System	$ 500,000
Total Recommended Near-Term Wastewater Improvements	**$ 710,000**
Cumulative Recommended Near-Term Improvements	**$ 7,310,000**

Long-Term Improvements to Existing System

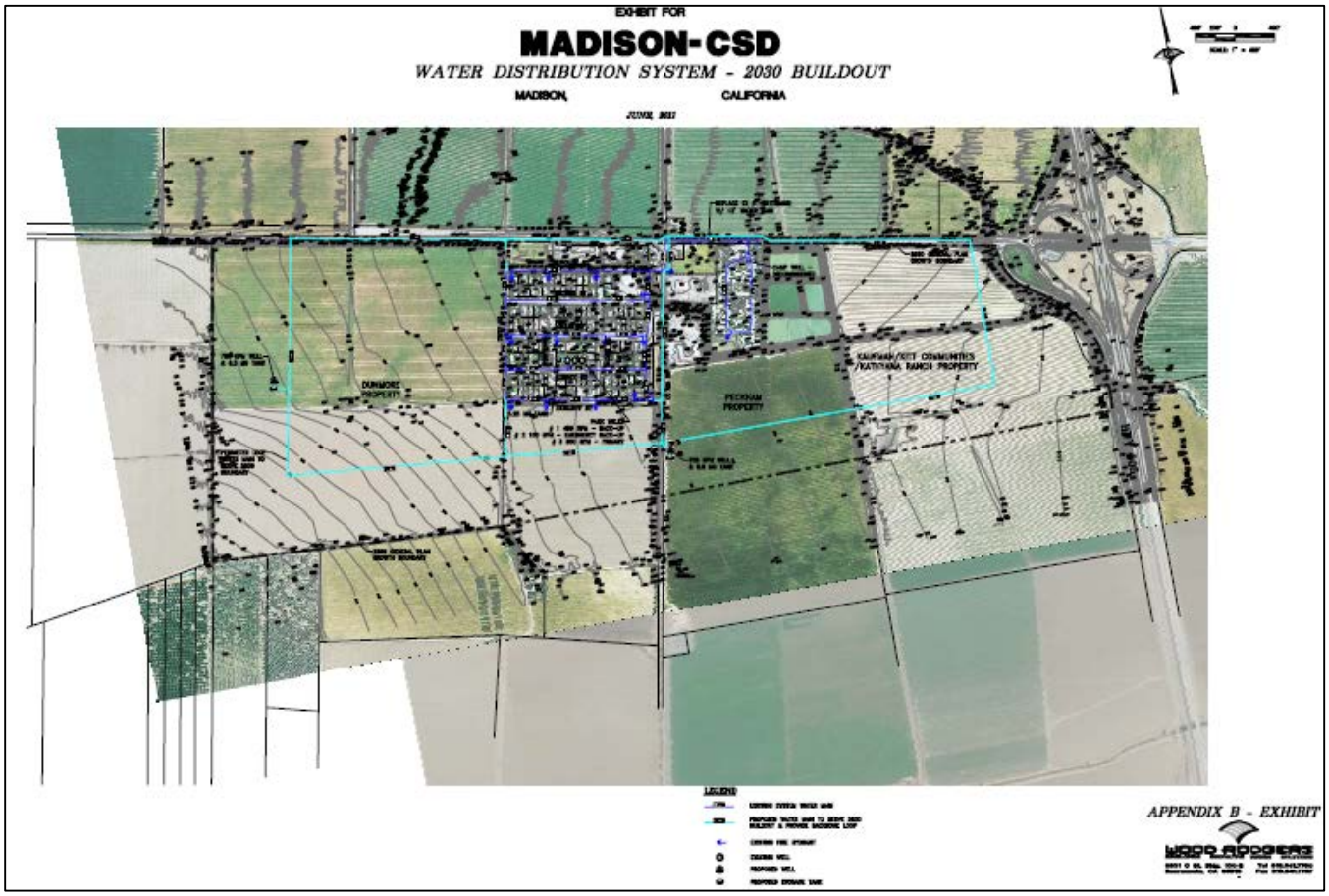
Future Water Supply and Distribution – 2030 Expected Growth

The 2030 growth area build-out envisioned in the General Plan expands the developed area of Madison from 94 acres to approximately 500 acres (an increase in service area of approximately 4.3 times). This increase will require a significant increase in the size and reliability of the current water distribution and supply system. Average day demand for the existing condition based on land use is calculated as 173 gpm and is expected to increase to 1,210 gpm under 2030 build-out conditions. The 2012 Wood Rogers Facility Master Plan recommends the following future improvements:

- Additional 12-inch water main loop through the community with cross connection at CR 89
- Two (2) additional community water wells (750 gpm each)
- Replacement of existing Well 1 (new 1,100 gmp well)
- New 0.25M gallon water storage tank for adequate fire flow pressure
- Two (2) new 0.5M gallon storage tanks (one at each new well)

The following schematic shows the existing and proposed 2030 water system build-out.

Figure 3. Existing and Proposed 2030 Madison CSD Water System

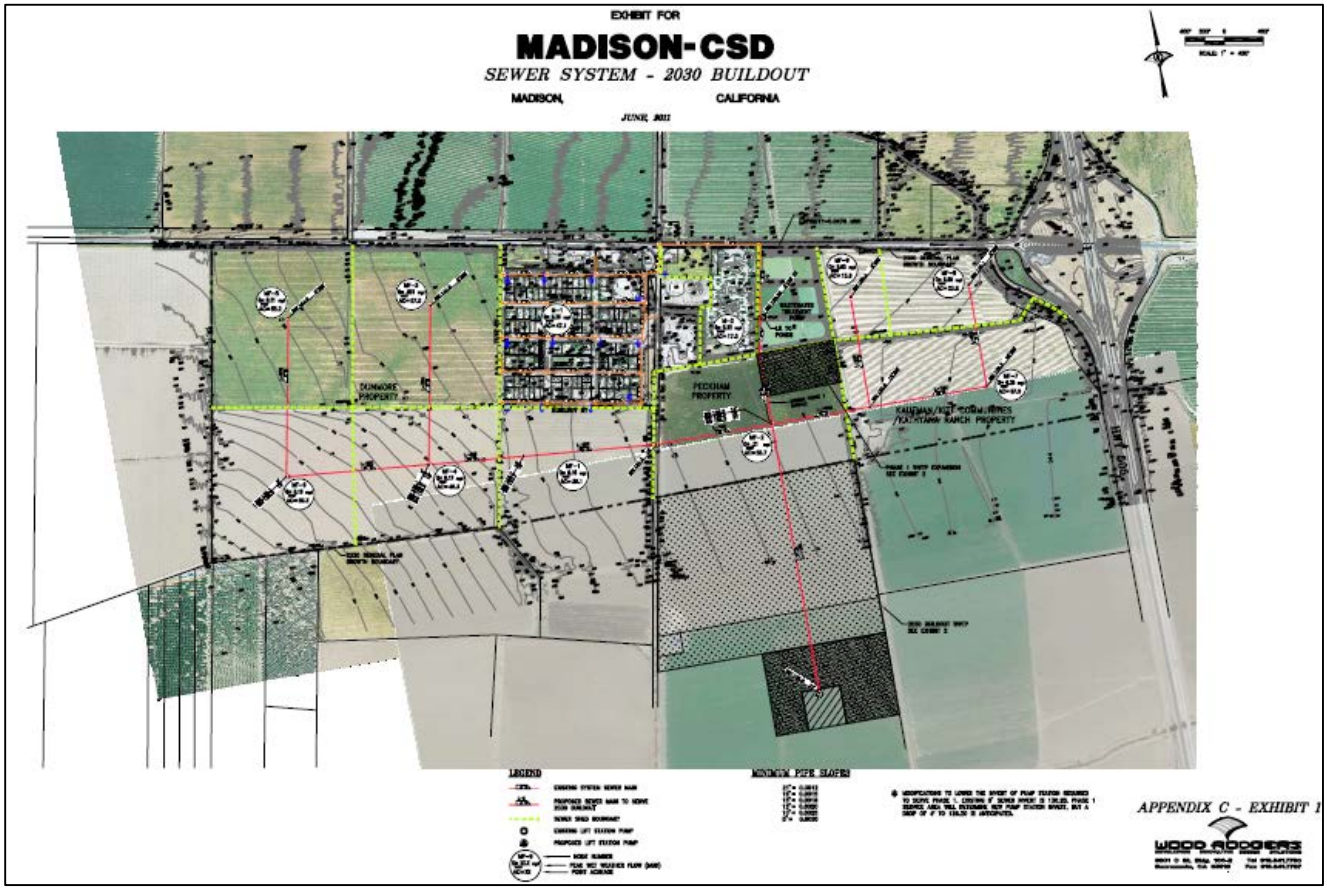


Future Wastewater Collection and Treatment – 2030 Expected Growth

Similar to the water system, the growth area for 2030 build-out will require a significant expansion of Madison's wastewater collection and treatment system. Based on the proposed General Plan land uses, the peak sewer flow generation is expected to increase from the existing condition flow, estimated at 0.50 MGD, to a projected 2030 build-out flow of 3.69 MGD – an approximate 7-fold increase. The collection system required to serve future build-out areas is depicted in the Figure 4, below. The treatment capacity for Madison must be increased from the existing inflow capacity of 70,000 gpd to an inflow capacity of 474,000 gpd to meet projected 2030 build-out development needs. The 2012 Wood Rodgers Facilities Master Plan recommends the following future improvements:

- New gravity collector trunks system-wide
- New parallel collector sewers (~2,500 linear feet)
- Replace facultative ponds with new aerated pond area (~25 acres total)
- Create new irrigated crop treatment area (~90 acres) to spread treated wastewater

Figure 4. Existing and Proposed 2030 Madison CSD Build-out



Recommended Long-Term Improvements

Water System Improvements

Transmission Main Loop	Est. Cost: $ 4,160,000
New Water Supply Well(s)	Est. Cost: $ 1,560,000
Replacement of Well 1	Est. Cost: $ 1,140,000
Water Storage for Fire Flow (0.25MG tank)	Est. Cost: $ 1,300,000
Water Storage for Demand (two 0.5MG tanks)	Est. Cost: $ 1,300,000
Total Recommended Long-Term Water Improvements	**$ 9,460,000**

Wastewater System Improvements

Land Acquisition (~115 acres)	Est. Cost: $ 730,000
New Aerated Treatment Pond (~50 acre-feet capacity)	Est. Cost: $ 510,000
New Facultative Pond (~180 acre-feet capacity)	Est. Cost: $ 1,720,000
New Crop Treatment System (90 acres)	Est. Cost: $ 640,000
New Gravity Collector Trunks	Est. Cost: $ 3,620,000
New Parallel Collector Sewers	Est. Cost: $ 570,000
Total Recommended Long-Term Wastewater Improvements	**$ 7,790,000**
Cumulative Recommended Long-Term Improvements	**$17,250,000**

Appendix C - Master Project List (by goal area)

Appendix D - Master Project List (by rural community)