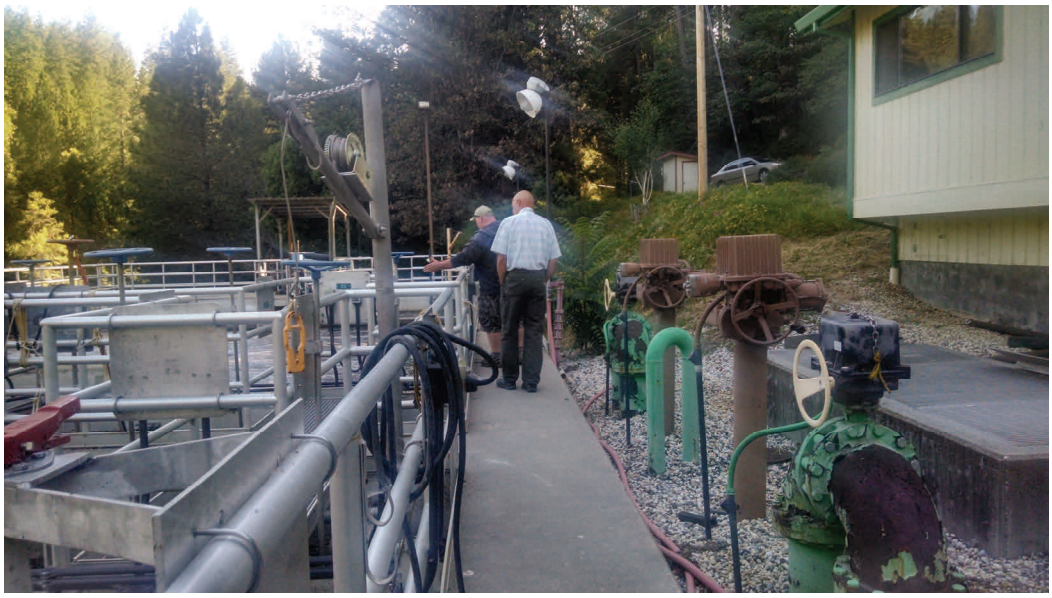


Wastewater Services Western Nevada County

Final

Second Round Municipal Service Review

Nevada Local Agency Formation Commission

April 23, 2015

Final Municipal Service Review

Wastewater Services - Western Nevada County

Prepared for:

Nevada LAFCo

950 Maidu Avenue

Nevada City, CA 95959

Prepared by:

April 23, 2015

Table of Contents

List of Figures

List of Tables

Chapter 1
EXECUTIVE SUMMARY

This Municipal Service Review (MSR) addresses major issues of service delivery and efficiency and includes an analysis and a written statement of conclusions, known as determinations, for each of the following factors:

- Growth and population projections for the affected area
- Disadvantaged unincorporated communities
- Present and planned capacity of public facilities
- Financial ability of the agency to provide services
- Opportunities for shared facilities
- Accountability for government service needs

- Any other matter relative to service delivery as required by Commission Policy

The specific determinations and the key facts that support each determination for each service provided are discussed in Chapters 4 through 8. The areas of analysis contain the essential operational and management aspects of each service provider and together constitute a review of the ability of the providers to meet the service demands of the residents within their boundaries. The services considered in this are primarily provided to residents and visitors by city government or special districts, collectively referred to as "agencies." Agencies are typically operated under the provisions of their "principal acts," and they govern the provision of one or more public services. Boundaries and spheres of influence are determined by their Local Agency Formation Commission (LAFCO).

This MSR addresses the four wastewater service providers in western Nevada County: the City of Grass Valley, the City of Nevada City, the Kingsbury Greens Community Services District (CSD), and the Nevada County Sanitation District No. 1 (which includes ten zones of service). In addition, this MSR also addresses other wastewater systems utilized in western Nevada County such as individual septic systems, cluster systems, and small centralized systems. While the Cities of Grass Valley and Nevada City also deliver services other than wastewater, this MSR is focused only on the provision of wastewater services.

Summary of Key Issues

Each chapter provides more detailed information on issues and challenges faced by individual agencies and zones. For the purposes of this Executive Summary, however, the most crucial wastewater problems facing Western Nevada County now or in the recent past are encapsulated below.

City of Grass Valley Mining Discharges

The City of Grass Valley's wastewater treatment has undergone challenges with regard to discharges from the Drew Tunnel (owned by Newmont USA). The City was, until very recently, operating under an extension of compliance schedule for meeting final effluent limitations until the Drew Tunnel discharge was rerouted to a privately owned and operated treatment facility. In September 2014, Newmont began operating an interim Green Sand/Multi-media water treatment system (GSWTS) to treat groundwater discharging from the Drew Tunnel mine portal. The treated water will no longer be piped to the City's WWTP but will be discharged directly to Wolf Creek. Backwash water from the GSWTS will be occasionally delivered to the City's WWTP for final treatment and discharge. Newmont will be coordinating with the City to construct a permanent facility in the near future.

Kingsbury Greens CSD Management and Administration

The Kingsbury Greens CSD has ongoing difficulties with recruiting members to the Board of Directors. The recruitment and maintenance of Board membership is time-consuming and costly, and this problem was described in LAFCO's 2004 MSR. Since then, the situation has become more difficult with the passage of time as residency within Kingsbury Greens shifts away from homeowner-occupied to renter-occupied. There are currently two vacant positions, which sometimes makes it a challenge to form a quorum, in case of an absence, for decision-making purposes (three of five Directors must be present to take votes on Board matters). Annexation to the Nevada County Sanitation District appears to be the most feasible and promising solution, and would achieve greater certainty of continued operations.

Sanitation District Zone 8– Cascade Shores Physical and Regulatory Challenges

On May 9, 2005, a landslide destroyed the Cascade Shores plant and displaced a sewage line, and the treatment facility was placed under RWQCB's Cleanup and Abatement Order R5-2005-0714. A high-density polyethylene sewage line now transports raw sewage down the face of a cliff, and erosion control has been established that diverts surface water from the hill and nets the cliffside to prevent further cliffside failure. There is also emergency storage to collect sewage at the top of the cliff in the event of another failure of the sewage line. Even with the re-construction of the sewage plant, the Sanitation District has indicated that meeting the regulatory requirements at Cascade Shores continues to be a problem. Shortly after the landslide damaged the plant and it was rebuilt, the discharge requirements changed. The plant was upgraded again, and again the discharge requirements changed. The District's current plan is to abandon the plant and build a community leach field, which discharges onto land and so does not carry the stringent requirements that discharge to surface water does. The District has negotiated to purchase 40 acres on which to build the leach field.

Sanitation District Zone 6 – Penn Valley Capacity

There is currently a development moratorium area in Penn Valley based on the lack of capacity in the treatment system. The Penn Valley WWTP has a design flow of 0.1256 MGD, while peak flow in the last year was 0.1915 MGD, in excess of the design flow. On days when the flow is higher than treatment capacity, wastewater does not receive treatment. The dam in the irrigation reservoir has a freeboard limit which has also historically been surpassed on occasion. Because capacity is compromised during extended periods of precipitation as rain increases the level of the storage basin, the plant is currently operating under an RWQCB Cease and Desist Order. However, the Sanitation District has been awarded a $5 million grant from the RWQCB to fund pipeline construction from Penn Valley to Lake Wildwood, during which the pipeline will also tie into Zone 12, Valley Oak Court. This aggregation of zones will facilitate the resolution of water quality and treatment issues at the Penn Valley WWTP.

Summary of Agencies

The following table provides a summary profile of each agency evaluated in this MSR.

Table ES-1. Summary Profile of Agencies in Nevada LAFCo Wastewater MSR

Agency	Population (per 2010 US Census)*	Size (acres)	Connected EDUs	Monthly User Fee per EDU
Grass Valley	12,860	3,466	approx. 9,500	$55**
Nevada City	3,068	1,397	1,380***	$47
Kingsbury Greens Community Services District	70****	8	45	$46
San District Zone 1 – Lake Wildwood	4,991	2,335	2,916	$83
San District Zone 2 – Lake of the Pines	3,917	2,258	2,090	$99
San District Zone 4 – North San Juan	179*	121	85	$65
San District Zone 5 – Gold Creek	103*	22.3	44	$20
San District Zone 6 – Penn Valley	783*	599	347	$83
San District Zone 7 – Mtn Lake Estates	94*	253	40	$47
San District Zone 8 – Cascade Shores	202*	66	86	$204
San District Zone 9 – Eden Ranch	64*	36	27	$96
San District Zone 11 – Higgins Village	0 (all commercial)	10.7	47.8	$140
San District Zone 12 – Valley Oak Court	12*	6	5	$167

* Population is provided by 2010 US Census numbers when possible. However, for Zones with one asterisk, US Census numbers were not available and population was estimated using an average of 2.35 people per household (per California Department of Finance statistics for Nevada County) multiplied by the number of EDUs.

** For the City of Grass Valley, the user fee is flow-based for commercial uses and allows up to 4,000 gallons per month of wastewater.

*** The City of Nevada City counts connections rather than EDUs, so this figure represents the total number of residential and commercial connections now being served.

****Population of Kingsbury Greens CSD was estimated by the Board of Directors members during a meeting with MSR report preparers on June 4, 2014.

Chapter 2
NEVADA LAFCO RESOLUTION OF APPROVAL

Resolution 15-03 of the
Local Agency Formation Commission
of
Nevada County, California

Approving a Municipal Service Review of Wastewater Services in Western Nevada County and Adopting Written Determinations Thereon

WHEREAS, California Government Code Section 56425 requires that a Local Agency Formation Commission ("LAFCo") adopt and periodically review Sphere of Influence Plans for all agencies in its jurisdiction; and,

WHEREAS, California Government Code Section 56430 requires that a LAFCo conduct a review of the municipal services provided by an agency prior to updating or adopting its Sphere of Influence Plan; and,

WHEREAS, the Sphere of Influence Plan is the primary planning tool for LAFCo and defines the probable physical boundaries and service area of a local agency as determined by LAFCo; and,

WHEREAS, on February 19, 2015, the Commission held a workshop on the preliminary draft of the Western County Wastewater MSR and directed staff to circulate the draft to the public and affected agencies for comment; and,

WHEREAS, at the time and in the manner provided by law, the Executive Officer gave notice of the date, time, and place of a public hearing by the Commission upon the Western County Wastewater Municipal Service Review, including approval of the report and adoption of the written determinations contained therein; and,

WHEREAS, the Commission hereby determines that the final draft of the Western County Wastewater Municipal Service Review and written determinations contained therein will provide information for updating the spheres of influence of the various districts and cities involved in the study (including the County Sanitation District, the Kingsbury Greens Community Services District, and the cities of Grass Valley and Nevada City) and are otherwise consistent with the purposes and responsibility of the Commission for planning the logical and orderly development and coordination of local governmental agencies so as to advantageously provide for the present and future needs of the county and its communities; and,

WHEREAS, in making this determination, the Commission has considered the documentation on file in this matter prepared by the consultant and submitted by other interested agencies and individuals; and,

WHEREAS, the Commission has heard all interested parties desiring to be heard and has considered the proposal and report by the Executive Officer and all other relevant evidence and information presented at said hearing;

NOW, THEREFORE, the Local Agency Formation Commission of Nevada County hereby resolves, orders and determines the following:

1) The Municipal Service Review of Wastewater Services in Western Nevada County, attached hereto as Exhibit A, is approved and the written determinations presented in the Executive Summary of the report are hereby adopted.

Resolution 15-03
Nevada LAFCo

2) The Commission finds that this project qualifies for a Categorical Exemption to the California Environmental Quality Act under Article 19, Class 6 (Section 15306) of the Guidelines for Implementation of CEQA, Information Collection (which does not result in disturbance of an environmental resource).
3) LAFCo staff is directed to utilize the approved MSR for updating the spheres of influence of each of the subject agencies, as provided for by the Commission's schedule for sphere updates.
4) LAFCo staff is further ordered to forward copies of the adopted Municipal Service Review to all appropriate agencies, including each subject service provider.

The foregoing resolution was duly passed by the Local Agency Formation Commission of Nevada County at a special meeting held on April 23, 2015, by the following roll call vote:

Ayes: Anderson, Flora, Grundel, Levine, Norsell, Wilcox, Weston

Noes: none

Absentions: none

Absent: Beason, Susman

Signed and approved by me after its passage this 23rd day of April, 2015.

Hank Weston, Chair
Nevada LAFCo

Attest:

SR Jones, Executive Officer

Chapter 3
INTRODUCTION

This Municipal Service Review (MSR) has been prepared to provide technical and governance information for wastewater providers within Western Nevada County. Four service providers, including the City of Nevada City, City of Grass Valley, Kingsbury Greens CSD, and the Nevada County Sanitation District are reviewed herein. The County Sanitation District has ten zones which are analyzed in detail in Chapter 8. These zones are Lake Wildwood, Lake of the Pines, North San Juan, Gold Creek, Penn Valley, Mountain Lake Estates, Cascade Shores, Eden Ranch, Higgins Village, and Valley Oak Court. See Figure 3-1 for a map of the cities and districts contained in this MSR.

In addition to the agencies listed above, Chapter 4 also includes a brief discussion of "Other Wastewater Systems" including:

- Individual Septic Systems
- Cluster Systems
- Small Centralized Systems

3.1 ROLE AND RESPONSIBILITY OF LAFCO

Local Agency Formation Commissions (LAFCo's) are independent agencies that were established by state legislation in 1963 in each county in California to oversee changes in local agency boundaries and organizational structures. It is LAFCo's responsibility to

- oversee the logical, efficient, and most appropriate formation of local cities and special districts,
- provide for the logical progression of agency boundaries and efficient expansion of municipal services,
- assure the efficient provision of municipal services, and
- discourage the premature conversion of agricultural and open space lands (Government Code [GC] §§ 56100, 56301, 56425, 56430, 56378).

The Cortese-Knox-Hertzberg (CKH) Local Government Reorganization Act of 2000 (CKH Act) requires each LAFCo to prepare a MSR for its cities and special districts. MSRs are required prior to and in conjunction with the update of a Sphere of Influence (SOI). This review is intended to provide Nevada LAFCo with the necessary and relevant information related to four wastewater service providers within the County (see above), specifically regarding the appropriateness of each service provider's existing and proposed boundaries and SOI.

About Nevada LAFCo

Although each LAFCo works to implement the CKH Act, there is flexibility in how these state regulations are implemented so as to allow adaptation to local needs. As a result, Nevada LAFCo has adopted policies, procedures and principles that guide its operations (adopted on April 28, 1994 and last updated on January 16, 2014). The policies and procedures can be found on Nevada LAFCo's website (www.mynevadacounty.com/nc/lafco).

This MSR is an information tool that can be used to facilitate cooperation among agency managers and LAFCo to achieve the efficient delivery of services. Describing existing efficiencies in service deliveries and suggesting new opportunities to improve efficiencies is a key objective of this MSR, consistent with LAFCo's purposes. Since this MSR will be published on LAFCo's website, it also contributes to LAFCo's principle relating to transparency of process and information. A public hearing was conducted by LAFCo on this MSR, thereby contributing to LAFCo's aim of encouraging an open and engaged process.

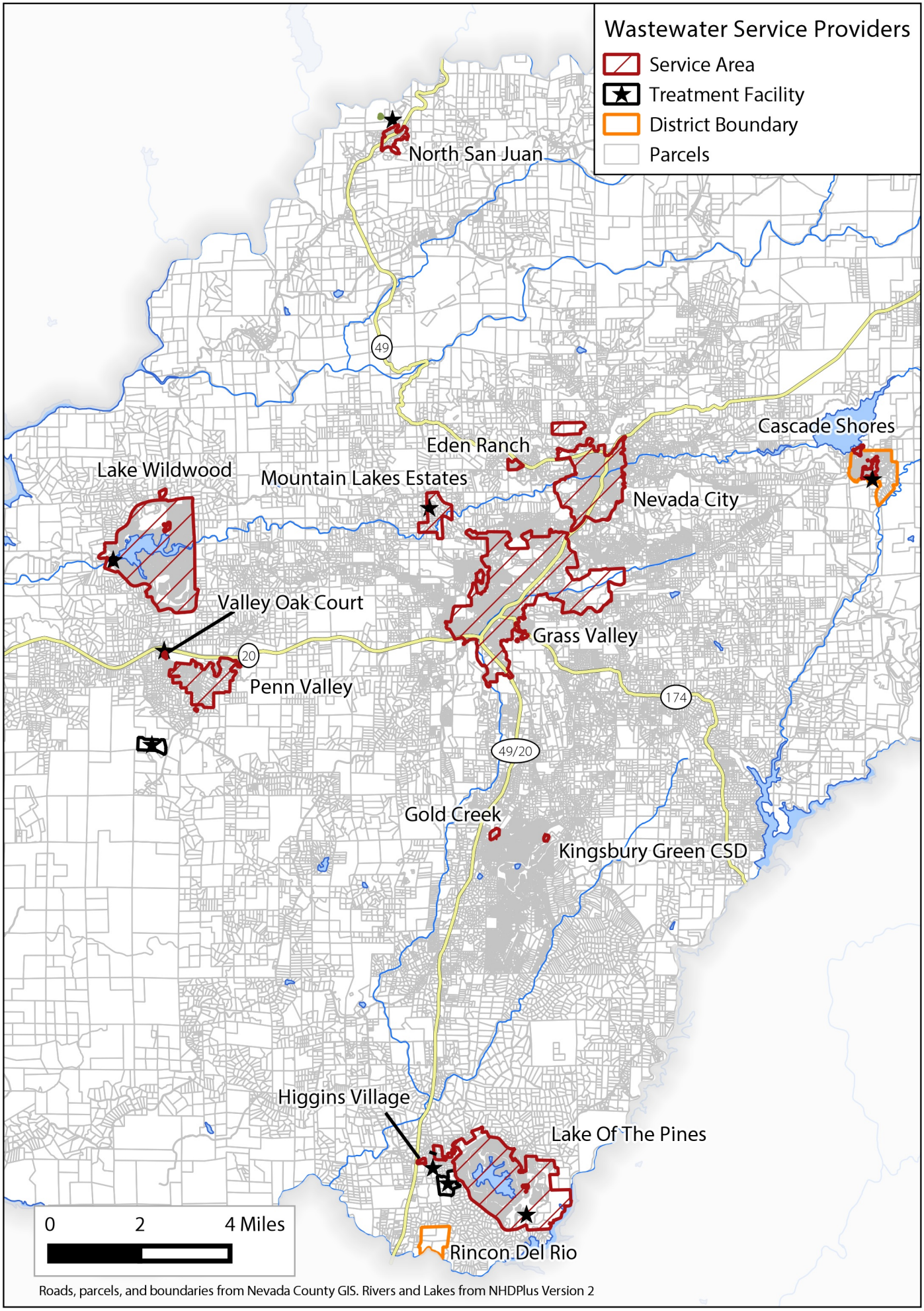


Figure 3-1

WASTEWATER SERVICE PROVIDERS

WESTERN NEVADA COUNTY

3.2 PURPOSE OF THE MUNICIPAL SERVICE REVIEW

MSRs are intended to provide LAFCo with a comprehensive analysis of services provided by each of the special districts and other service providers identified within this MSR and that fall under the legislative authority of the LAFCo. This review will provide Nevada LAFCo with the information and analysis necessary to evaluate existing boundaries and consider spheres of influence for these service providers. The MSR makes determinations in each of seven mandated areas of evaluation, providing the basis for LAFCo to review proposed changes to a service provider's boundaries or SOI.

An SOI is defined in GC § 56425 as "a plan for the probable physical boundary and service area of a local agency or municipality as determined by the Commission." LAFCo is required to adopt an SOI for each city and each agency in its jurisdiction. When reviewing and determining SOI's for these service providers, LAFCo will consider and make recommendations based on the following information:

- The present and planned land uses in the area
- The present and probable need for public services and facilities in the area
- The present capacity of public facilities and adequacy of public services that the agency provides
- The existence of any social or economic communities of interest in the area if LAFCo determines that they are relevant to the service provider
- The presence of disadvantaged unincorporated communities for those agencies that provide water, wastewater, or structural fire protection services

Ideally, an MSR will support not only LAFCo but will also provide the following benefits to the subject agencies:

- Provide a broad overview of agency operations including type and extent of services provided
- Serve as a prerequisite for a sphere of influence update (included herein)
- Evaluate governance options and financial information
- Demonstrate accountability and transparency to LAFCo and to the public
- Allow agencies to compare their operations and services with other similar agencies

This MSR is designed to provide technical and administrative information on each of the four service providers to Nevada LAFCo, so that LAFCo can make informed decisions based on the best available data for each service provider and area. Written determinations, as required by law, are presented in Chapter 9 *Conclusions* of this MSR for LAFCo's consideration. LAFCo is ultimately the decision maker on approval or disapproval of any determinations, policies, boundaries, and discretionary items.

Also included in this MSR is a discussion of other wastewater systems utilized in western Nevada County (Chapter 4 *Onsite Wastewater Systems*), such as individual septic systems, cluster systems, and small centralized systems. These systems represent a large number of systems in the area, including such developments as Alta Sierra (approximately 3,000 parcels).

3.3 METHODOLOGY AND APPROACH TO THIS MSR

In accordance with GC § 56430, LAFCo must prepare municipal service reviews prior to or in conjunction with the mandated five-year schedule for reviewing SOIs for the agencies within its jurisdiction. This MSR evaluates the structure and operation of each of the four wastewater service providers and

discusses possible areas for streamlining, improvement, and coordination. Key references and information sources for this study were gathered for each agency considered. The reference utilized in this study include published reports; review of agency files and databases (agendas, minutes, budgets, contracts, audits, etc.); master plans; capital improvement plans; engineering reports; EIRs; finance studies; general plans; and state and regional agency information (permits, reviews, communications, regulatory requirements, etc.). Additionally, the consulting team, in coordination with the LAFCo Executive Officer, sent each city and agency a Request for Information, and the agencies' responses to these requests were a key information source. Members of the consultant team also conducted site visits and personal interviews with each agency.

This MSR forms the basis for specific judgments, known as determinations, about each agency that LAFCo is required to make (GC § 5425, 56430). These determinations are described in the MSR Guidelines from the Office of Planning & Research (OPR) as set forth in the CKH Act, and they fall into seven categories, as listed below:

1. Growth and population projections for the affected area
2. Location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence
3. Present and planned capacity of public facilities and adequacy of public services including infrastructure needs or deficiencies
4. Financial ability of agency to provide services
5. Status of, and opportunities for, shared facilities
6. Accountability for community service needs, including government structure and operational efficiencies
7. Any other matter related to effective or efficient service delivery, as required by commission policy

An MSR must include an analysis of the issues and written determination(s) for each of the above determination categories. Within each sub-chapter that describes a specific service provider, there are sections corresponding to the seven determination categories required by the CKH Act. Each of these seven determination categories is described in the chapter for each city and agency. An explanation of these seven determination categories is provided below.

1. Growth and Population

Section 3.4 evaluates existing and projected population estimates for the incorporated and unincorporated region of Nevada County. The ability of each provider to accommodate growth and demand projections is considered in each chapter.

2. Location and Characteristics of any Disadvantaged Unincorporated Communities within or Contiguous to the Sphere of Influence

Senate Bill (SB) 244, which became effective in January 2012, requires LAFCo to consider the presence of any Disadvantaged Unincorporated Communities (DUCs) when preparing a MSR that addresses agencies that provide water, wastewater or structural fire protection services. A DUC is a geographic area characterized as having a median household income of 80 percent or less of the statewide median household income. Nevada LAFCo policy recognizes any of the DUCs that have been designated by the County of Nevada, the Cities of Grass Valley and Nevada City and the Town of Truckee. The County has identified five DUCs in the unincorporated portion of the County: Penn Valley, Rough and Ready, North

San Juan, Washington, and Soda Springs. Additionally, the City of Grass Valley has identified the Alta Hill area as a DUC. See Section 3.6 for additional details.

3. Capacity and Infrastructure

Discussed in the service provider chapter is the adequacy and quality of the services provided by the agency, including whether sufficient infrastructure and capital are in place (or planned for) to accommodate planned future growth and expansions.

4. Financing

This section (in each service provider chapter) provides an analysis of the financial structure and health of each service provider, including the consideration of rates and service operations, as well as other factors affecting the financial health and stability of each provider. Other factors considered include those that affect the financing of needed infrastructure improvements and compliance with existing requirements relative to financial reporting and management.

5. Shared Facilities

Opportunities for agencies to share facilities are described in the service provider chapters of this MSR. Practices and opportunities that may help to reduce or eliminate unnecessary costs are examined, along with cost avoidance measures that are already being utilized. Occurrences of facilities sharing are listed and assessed for more efficient delivery of services.

6. Government Structure and Local Accountability

Each service provider chapter contains a subsection entitled Accountability and Governance. This subsection addresses the adequacy and appropriateness of existing boundaries and SOIs, and evaluates the ability of each service provider to meet its demands under its existing government structure. Also included in this subsection is an evaluation of compliance by each provider with public meeting and records laws (Brown Act).

7. Other Matters Related to Effective or Efficient Service Delivery, as Required by LAFCo Policy

Other matters could relate to the potential future SOI determination and/or additional effort to review potential advantages or disadvantages of consolidation or reorganization. During the gathering of information for the service review, LAFCo may become aware of additional matters that will require some response or referral to another agency.

A summary of determinations regarding each of the above categories are provided in Chapter 9 *Conclusions* of this document and will be considered by Nevada LAFCo in assessing potential future changes to an SOI or other reorganization.

Staff from each of the evaluated agencies had an opportunity to review the Administrative Draft of this report. Their comments, clarifications, and corrections were incorporated into the public review draft. The Commission conducted a public hearing on February 19, 2015, at the beginning of the public review process that was duly noticed, where they considered this report. Staff and members of the board of directors from each agency were invited to the public hearing.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is contained in Public Resources Code § 21000, et seq. Under this law public agencies are required to evaluate the potential environmental effects of their actions. This MSR is exempt from CEQA under a Class 6 categorical exemption. CEQA Guidelines § 15306 states that "Class 6 consists of basic data collection, research, experimental management, and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource."

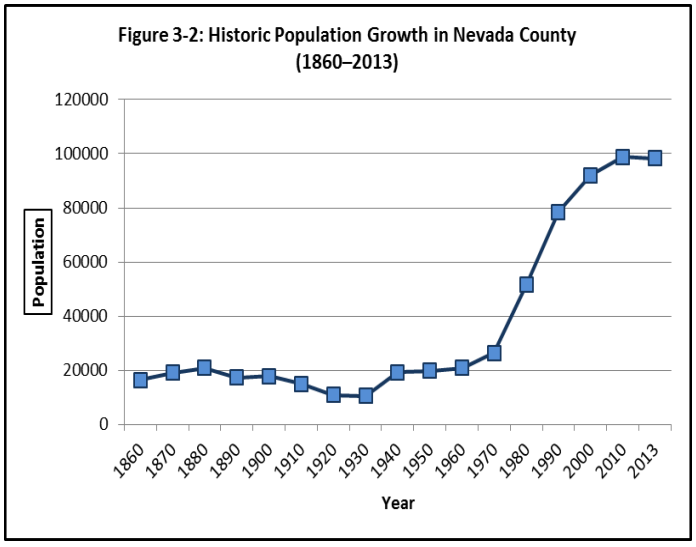
It should be noted that when LAFCo acts to establish or update a SOI for the agencies, an environmental document will need to be prepared to satisfy CEQA requirements. The lead agency for this future document would most likely be LAFCo.

3.4 GROWTH AND POPULATION – REGIONAL SETTING

LAFCo is required to make a determination in this MSR on growth and population. When planning for the provision of future services and infrastructure, local agencies should have ready access to accurate growth and population projections. The consultants preparing this MSR asked service providers to provide the current population and projected growth in five-year increments through 2030. The information provided by the service providers is summarized in each chapter of this MSR. The following paragraphs provide an overview of population and growth in the county as a whole. The intent is to provide contextual information which can be used to compare and consider data in subsequent chapters on individual agencies.

Population

In 2010 the U.S. Census estimated the total population of Nevada County was 98,764 persons. By 2013, the U.S. Census estimated that this population number declined by 0.01 percent to 98,200 persons. To be consistent, we will utilize demographic data from the year 2010 in this MSR. This decline in population between the years 2010 to 2012 is unusual for Nevada County, which over the years has seen a steady increase in population as shown in Figure 3-2.



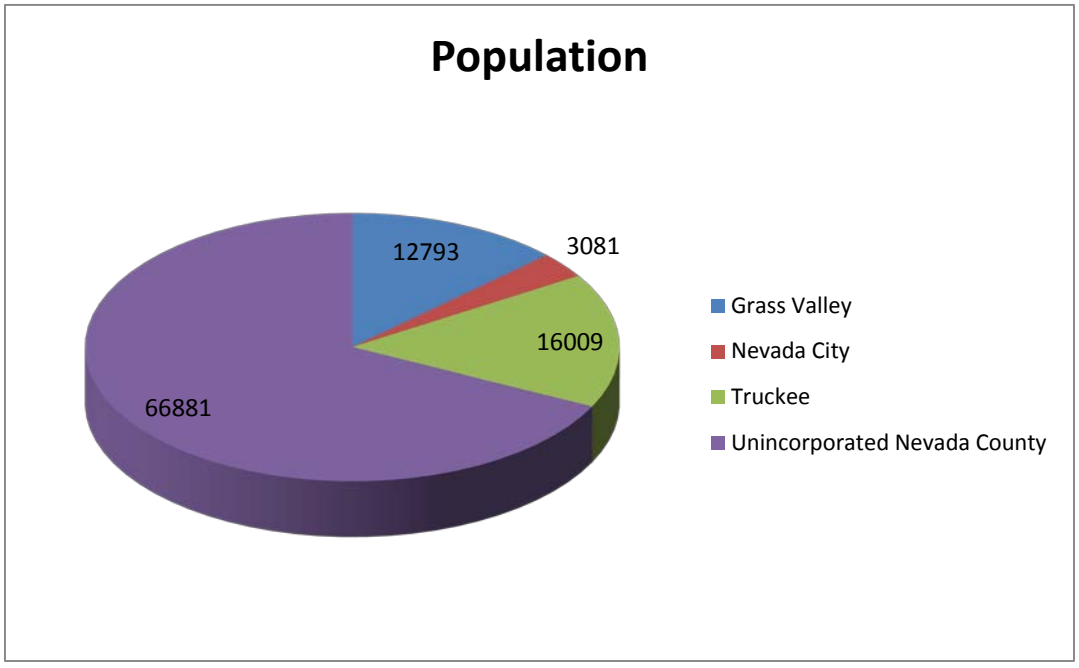
SOURCE: WIKIPEDIA, 2014 (HTTP://EN.WIKIPEDIA.ORG/WIKI/NEVADA_COUNTY, CALIFORNIA)

As shown in Figure 3-2, most people (68 percent) currently live in the unincorporated portion of the county. Of the three incorporated cities in the county, Grass Valley is the second largest city with 13 percent of the population. Nevada City has 3 percent of the population and Truckee, the largest city, has 16 percent of the population. No other incorporated cities are located within the county. The land area of Nevada County is approximately 974 square miles and the average number of persons per square mile is 101 (U.S. Census, 2010).

There were a total of 41,527 households in Nevada County in 2010, according to the U.S. Census. A majority (98.8 percent) of county residents live in a household, while 673 people, who represent approximately 0.7 percent of the population, live in an institution. Approximately 502 people (0.5 percent) do not live in either a household or an institution and may be temporarily or permanently homeless.

Of the 41,527 households, 6,741 of these consist of a husband and wife with children. Approximately 21,713 households consist of a husband and wife without children living at home. There are 3,622 female head-of-households with no husband in residence. There are 1,919 male head-of-households with no wife in residence. Single person households comprise 10,936 households. There are 14,273 non-family households. The average household size is 2.35 persons. The average family size is 2.80 persons.

Figure 3-3: Distribution of Population in Cities and Unincorporated Nevada County

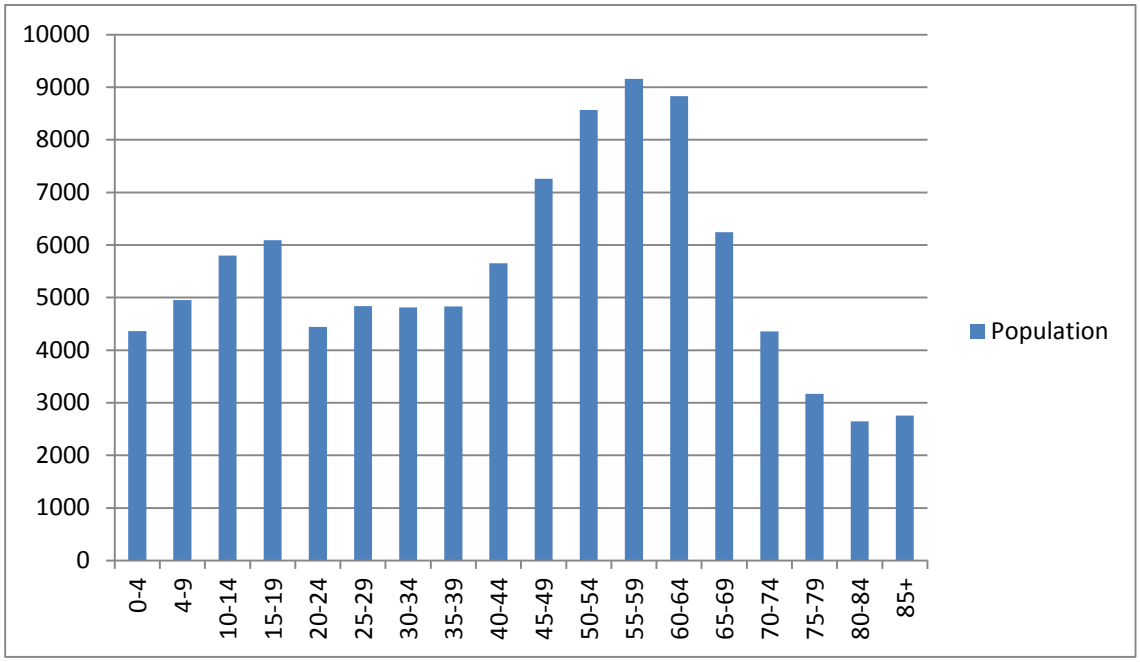


SOURCE: U.S. CENSUS, 2010

A majority (72 percent) of the households are owner-occupied. Approximately 28 percent are renter-occupied. In 2010 the homeowner vacancy rate was approximately 2.6 percent.

The average age of people in Nevada County is 47.6 years. In Figure 3-4 shown below, ages of the population were compiled by decade and the age classes are fairly evenly distributed. The largest age class consists of approximately 9,150 people aged 55 to 59. The age class with the fewest people is those aged 85 and over, with 2,759 people.

Figure 3-4: Distribution of Age Class in Nevada County



SOURCE: U.S. CENSUS, 2010

Within the population of Nevada County, the predominant race is white at 91 percent. Native Americans and Native Alaskans comprise one percent of the County population. African Americans, Native Hawaiians, and Asians comprise one percent of the population. Approximately three percent of the population identifies their race as "other". Additionally, three percent of the population identifies themselves as a combination of two or more races. A summary of Nevada County's racial diversity is shown in Table 3-1 below.

Table 3-1: Diversity of Races in Nevada County

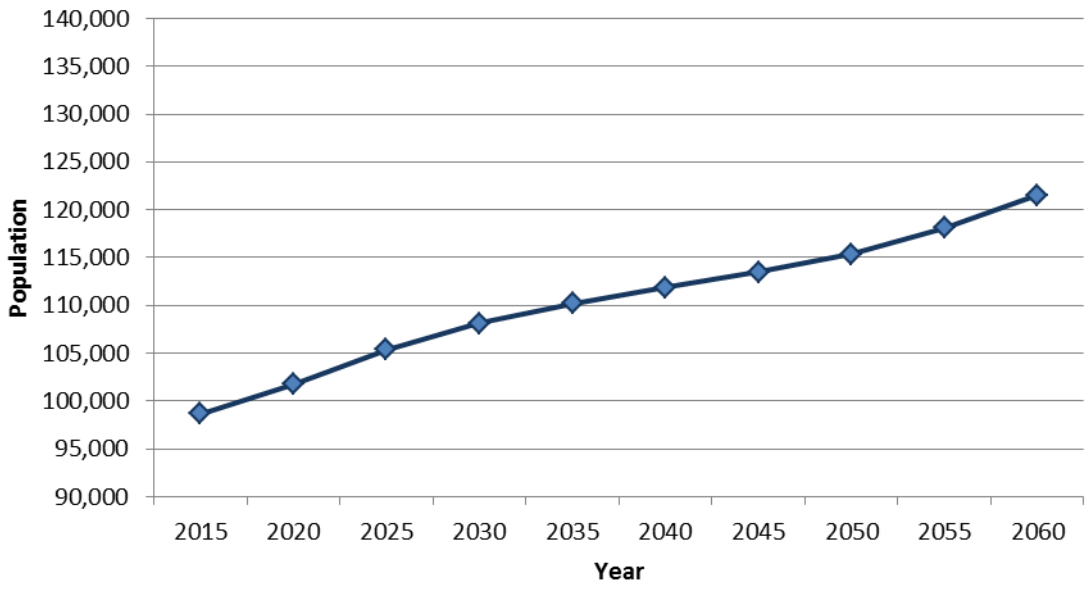
Race	Population	Percent of Population
White	90,233	91
American Indian and Alaska Native	1,044	1
Black or African American	389	2
Asian	1,187	
Hawaiian & Pacific Islander	110	
Other Race	2,678	3
Combo Two + Races	3,123	3
Total Population in Nevada County	98,764	100

SOURCE: U.S. CENSUS, 2010

Growth

In the future, Nevada County is expected to grow in population at a compound annual rate of 0.46 percent. Projections for the County's population predict 101,767 persons by 2020 and 121,517 persons by 2060 (Figure 3-5).[1] The population patterns within the county are similar to other rural counties in that most of the population resides in the unincorporated area, a trend that may or may not continue into the future, depending on alternative land uses and development patterns. Regardless, Nevada County's rate of growth is significantly lower than the state as a whole, which is anticipated to have a compound annual growth rate of 0.63 percent through the year 2060.[2]

Figure 3-5: Projected Population Estimates for Nevada County



SOURCE: DEMOGRAPHIC RESEARCH UNIT, CALIFORNIA DEPARTMENT OF FINANCE, DECEMBER 2014.

Areas of growth in Nevada County that have the potential to impact existing or create new public wastewater systems include Bear River Plaza[3] near Lake of the Pines, Rincon del Rio one mile south of Lake of the Pines, Higgins Marketplace near Higgins Village, and the City of Grass Valley's four special development areas (SDAs): North Star, Kenny Ranch, Loma Rica Ranch and Southhill Village. Existing developed community areas that hold further development potential include Lake Wildwood, Lake of the Pines, and Dark Horse. As part of the Housing Element Update, Nevada County is also planning to

[1] Projections Prepared by Demographic Research Unit, California Department of Finance, December 2014.
[2] Ibid.
[3] The Bear River Plaza Project was approved allowing 40,000 square feet of commercial, and 28 high-density residential units off of Combie Road via BOS Resolution 08 -403 and Ordinance 2273 (see www.mynevadacounty.com/nc/bos/). However, this project has not been annexed into the County Sanitation District, LOP Zone 2.

rezone several areas to higher density. Rezoned lots will then have a denser development potential and more anticipated EDUs.

The County Sanitation District has plans to construct a pipeline between the Penn Valley and Wildwood zones, so that wastewater from Penn Valley and the Valley Oak Court development will be treated at the Wildwood wastewater treatment plant. At that time, the District would merge the Penn Valley zone and the Valley Oak Court zone with the Lake Wildwood zone. The District also has plans to merge the Higgins Village zone into the Lake of the Pines zone at some point in the future, although plans have not been made as of this writing. Rincon del Rio, an approved development with several hundred potential EDUs in the south county area, has been annexed into the Sanitation District and will be connected to the Lake of the Pines treatment plant. The Rincon del Rio project will pay for additional capacity to be built into the plant if and when it is developed. Other projects that have recently been annexed to the County Sanitation District include Wildwood Ridge, with 388 units in Lake Wildwood (annexed into Zone 1, Lake Wildwood), and Penn Valley Oaks, which includes 51 units and 10,000 square feet of commercial uses on Penn Valley Drive (annexed into Zone 6, Penn Valley). As of January 2015, construction on the Penn Valley Oaks project has not yet started; although planning permits have been approved.

The City of Grass Valley's SDAs are located outside the city limits proper but within the City's SOI, and have been identified in both the City's and the County's General Plans as areas for targeted growth. The SDAs include North Star, Kenny Ranch, Southhill Village and Loma Rica Ranch. Three of the four SDAs are currently inactive. The Loma Rica Ranch area was annexed to the City in 2012 and some development has been approved, but not yet constructed, on the site. The Southhill Village SDA has been proposed for annexation and an EIR has recently been prepared. The proposed annexation consists of 120 acres directly adjacent to the City's southern boundary. The project, known as Southern Sphere of Influence Planning and Annexation, also includes General Plan amendments and pre-zoning of a total of 416 acres within and surrounding the area proposed for annexation. No specific development proposal is currently associated with the SDA/annexation application and many of the parcels within the annexation area are undeveloped or underdeveloped. General Plan designations planned for the area include a mix of residential, commercial and manufacturing land uses.[4] A wastewater service feasibility study was prepared for the project and determined that with the extension of infrastructure, the City's wastewater facilities are adequate to serve the project.[5]

The City's current WWTP capacity has between 4,000 and 4,800 EDUs available based on average annual flows, and has sufficient capacity to serve the city's population. Additionally, once the discharges received from the Drew Tunnel are diverted to Newmont USA's own treatment facility, the City's WWTP capacity will increase to approximately 9,000 EDUs.

Local Planning Policies

Local planning policies and zoning affect the rate and amount of potential future development and population growth. Each of the three land use agencies updated their Housing Element in 2014. They also updated their Land-Use Elements to identify DUCs as required by state law (SB 614). A general summary of key planning and policy documents is provided below.

[4] PMC, Southern Sphere of Influence Planning and Annexation Project Draft EIR, 2013; 2.0-1.

[5] SCO Planning & Engineering, Inc., Wastewater Feasibility Analysis – La Barr Meadows Road & Taylorville Road, (September 2012).

Nevada County General Plan: The Nevada County General Plan is the long-term policy guide for the physical, economic and environmental future of the County. It is comprised of goals, objectives, policies, and implementation measures, which are based upon assessments of current and future needs and available resources. The Nevada County General Plan was adopted in 1996 and amended in 2008 (Safety Element) and 2010 (Circulation/Housing Element). The 2014-2019 Housing Element was adopted on June 24, 2014. In addition, the Planning Department has prepared updates to the Safety and Noise Elements, which are currently in the process of public review.

City of Grass Valley General Plan: The City of Grass Valley 2020 General Plan was updated in November 2009; although a few Elements have been more recently updated. The City's General Plan includes the 2,521 acres that make up the City boundaries and an additional 7,373 acres of surrounding unincorporated lands that make up the Planning Area. The Housing Element was September 23, 2014. The City is in the beginning phases of updating its Sewer System Management Plan.

City of Nevada City General Plan: The Nevada City General Plan was adopted in 1986. The Land Use Element was updated in 2009 and the SOI updated in 2008. The 2014-2019 Housing Element was adopted in January 2014.

3.5 PUBLIC PARTICIPATION

LAFCo conducted a public hearing on the Preliminary Draft MSR on February 19, 2015. Comments from the public were solicited; however no comments from the public were received. The Commission held a second public meeting on the MSR on April 23, 2015.

After this MSR is finalized, it will be published on the Commission's website (www.mynevadacounty.com/nc/lafco), thereby making the information contained herein available to anyone with access to an internet connection. A copy of this MSR may also be viewed during posted office hours at LAFCo's office located at 950 Maidu Avenue, Nevada City, CA 95959. In addition to this MSR, LAFCo's office maintains files for each service provider and copies of many of the planning documents and studies that were utilized in the development of this MSR. These materials are also available to the public for review.

3.6 DISADVANTAGED UNINCORPORATED COMMUNITIES

Overview of Regulations and Policies for Disadvantaged Unincorporated Communities

SB 244, which became effective in January 2012, requires LAFCo to consider the presence of any DUCs when preparing a MSR that addresses agencies that provide water, wastewater or structural fire protection services. By definition, a DUC consists of at least 10 dwelling units in a fringe, island, or legacy community with a median household income of 80 percent or less of the statewide median household income (MHI). This state legislation is intended to ensure that the needs of these unincorporated communities are met when considering service extensions and/or annexations, in particular, water, wastewater, drainage and structural fire protection services.

The Wolk Bill created several definitions, in both LAFCo and planning law, including[6]:

1. "Community" is an inhabited area within a city or county that is comprised of no less than 10 dwellings adjacent to or in close proximity to one another;
2. "Unincorporated fringe community" is any inhabited and unincorporated territory that is within a city's SOI;
3. "Unincorporated island community" is any inhabited and unincorporated territory that is surrounded or substantially surrounded by one or more cities or by one or more cities and a county boundary or the Pacific Ocean;
4. "Unincorporated legacy community" as a geographically isolated community that is inhabited and has existed for at least 50 years; and
5. "Disadvantaged unincorporated community" is inhabited territory of 12 or more registered voters that constitutes all or a portion of a community with an annual MHI that is less than 80 percent of the statewide annual MHI.

The California Department of Water Resources (DWR) has developed a mapping tool to easily determine the location of disadvantaged communities (DACs)[7]. DACs are slightly different from DUCs. DACs are identified using the definition provided in DWR's Proposition 84 and 1E IRWM Guidelines, dated August, 2010). The maps and geographic information system files are derived from the US Census Bureau's American Community Survey and are compiled for the five-year period 2006-2010. DWR has included, in the maps a calculated field which indicates the DAC status for different census geographies (Place [8], Tract, and Block Group). Since both DACs and DUCs are determined using a threshold MHI of less than $48,706 (80 percent of the Statewide MHI), the DWR mapping tool is helpful to LAFCo and other agencies. Within western Nevada County, the communities of North San Juan, Penn Valley, Rough and Ready, and Washington are recognized by the Department of Water Resources as DACs. Nevada County and Nevada LAFCo also recognize these areas as DUCs. Additionally, the City of Grass Valley has identified the Alta Hill neighborhood as an unincorporated fringe community within their SOI, as defined by SB 244.

To address DUCs at the local level, the Wolk legislation requires cities and counties to review and update the land use elements of their general plans to map and analyze the service needs of DUCs within or adjacent to their SOIs. Nevada County, Nevada City, and the City of Grass Valley each updated the land use element of their general plans in 2014, in accordance with the Wolk legislation.

LAFCo DUC Policies

With the implementation of SB 244 in 2012, the CKH Act now requires municipal service reviews to include written determinations with respect to the location and characteristics of any DUC within or contiguous to a City's SOI, and the present and planned capacity of public facilities, adequacy of public services, including water, sewer, and structural fire protection, within these DUCs.

[6] State of California, Senate Bill 244 (Wolk Bill) (October 7, 2011).

[7] Details available on Department of Water Resources IRWM Grant Program, Disadvantaged Communities (DAC) Mapping Tool. www.water.ca.gov/irwm/grants/resourceslinks.cfm.

[8] The U.S. Census Bureau identifies "census designated place" as the statistical counterpart of a city in that it is a named place with a concentration of residents, housing, and commercial activity, but is located in a county's unincorporated territory.

Nevada LAFCo's policies include defining characteristics of DUCs, recognizing any that have been so identified by the County or a city, as set forth in Section II (P) (3) of the Commission's Policies:

Definition of Disadvantaged Unincorporated Community: A developed area that has been identified as a DUC by LAFCo, the County or applicable city, or one that meets all the following standards:

- Substantially developed with primarily residential uses;
- Contains at least 25 parcels in close proximity to each other that do not exceed 1.5 acres in size;
- Does not have reliable public water, sewer or structural fire protection service available
- Contains at least 12 registered voters; and
- Has a median household income level of 80 percent or less than the statewide median household income.

Nevada LAFCo has also established a process for residents or property owners to request that LAFCo designate their community as a DUC. To date, this process has not been utilized.

SB 244 may limit a city's ability to annex territory because it prohibits LAFCos from approving an annexation of territory greater than 10 acres (or as determined by LAFCo policy) where a DUC is contiguous unless an application to annex the DUC is also filed. There are exceptions where LAFCo can show there is no support in the DUC for annexation.

Nevada County DUC Requirements

Government Code Section 65302.10 requires that on or before the adoption of its housing element, each city or county review and update its land use element to address the infrastructure needs of unincorporated disadvantaged communities. Counties must identify Legacy Communities, which are defined as geographically isolated communities that have been in existence for over 50 years, and where the MHI is 80 percent or less than the statewide MHI. Nevada County used the following criteria to identify Legacy Communities:

1. Geographically isolated communities in the unincorporated areas that have been in existence for over 50 years;
2. 12 or more registered voters are within the community area;
3. No less than 10 dwellings together in close proximity;
4. The MHI in the community area is 80 percent or less than the statewide MHI;
5. The community is recognized as a 2010 CDP;
6. The community is recognized by the DWR as a disadvantaged community;
7. The community is recognized in the Nevada County GP as a Rural Place or a Village Center and/or is associated with an existing Area Plan; and
8. The community is within ½ mile of a commercial zone (C1 or C2).

Based on the above criteria, the county has identified the following communities as DUCs (Legacy Communities) within its updated Land Use Element[9]:

- North San Juan
- Penn Valley

[9] County of Nevada, *General Plan Land Use Element* (adopted January 28, 2014).

- Rough and Ready
- Soda Springs
- Town of Washington

Of the four service providers analyzed in this MSR, two providers serve unincorporated communities: Kingsbury Greens CSD and the Nevada County Sanitation District.

Kingsbury Greens CSD

Neither the Department of Water Resources nor the County of Nevada has identified Kingsbury Greens as a DUC. See Chapter 7 for further discussion.

Nevada County Sanitation District No. 1

Two areas within the Nevada County Sanitation District No. 1 have been identified by the Nevada LAFCo, County of Nevada, and the Department of Water Resources as DUCs: Penn Valley and North San Juan. See Chapter 8 for further discussion.

City Disadvantaged Community Requirements

SB 244 also required cities to update their land use elements as part of the next revision to their Housing Elements, including an analysis of the water, wastewater, storm water, and structural fire protection services in the area along with financing options to help encourage investment in the area should it be needed. As part of this effort, the bill required cities to identify and address any disadvantaged communities within their sphere of influence (SOI). Disadvantaged communities are defined as a "fringe communities" or areas within the cities' SOI that meets the state defined income for DUCs, which is a MHI of 80 percent or less than the statewide median. The cities based their analysis of fringe communities on income levels from the U.S. Census, 2008-2012 American Community Survey.

City of Grass Valley

Grass Valley has identified the Alta Hill area as a "Fringe Community." Alta Hill is an unincorporated neighborhood located northwest of the City, near Dee Mautino Park. Almost all of the homes in this fringe community rely on private septic systems. The City of Grass Valley provides public wastewater collection and treatment to less than 10 of the homes in the area. Grass Valley has sufficient wastewater treatment capacity to provide sewer service to this fringe community if there is a need to do so in the future. Furthermore, the City's Sewer System Management Plan includes a plan to serve this area in the future.[10] See Chapter 5 for further discussion.

City of Nevada City

In consultation with Nevada County LAFCO, Nevada City was unable to find any DUCs within the unincorporated areas of its Sphere of Influence. See Chapter 6 for further discussion.

[10] City of Grass Valley, *Sewer System Management Plan* (Revised September 2012).

3.7 REGULATIONS FOR WASTEWATER SYSTEMS

Both state and federal regulatory authority exists for the control of water quality in surface waters of California. Under the Clean Water Act (CWA), the Environmental Protection Agency (EPA) regulates municipal and industrial effluent discharges to navigable waters through the issuance of National Pollutant Discharge Elimination System (NPDES) permits. The basic approach used in both state and federal processes is 1) to designate beneficial uses to be protected, 2) to set water quality objectives that are protective of the most sensitive uses, and 3) to control municipal, industrial, and other sources to meet these objectives.

Federal Wastewater Treatment Regulations

Clean Water Act

The Clean Water Act (33 U.S.C. § 1251 et seq.) is the federal law that governs and authorizes water quality control activities by the EPA. Pursuant to federal law, the EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (40 CFR). The CWA regulates water pollution through two different and supplementary approaches:

- Water quality and technology-based standards; and
- Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States.

The two approaches to regulating water pollution are implemented through the use of discharge permits, which contain mass or concentration-based effluent limits for the pollutants in the permittee's wastewater. These approaches are applied to pollutant dischargers through the implementation of the national wastewater discharge permitting program set up under the CWA. The CWA established national goals to eliminate pollutant discharges to navigable waters and to assure that all navigable waters would be fishable and swimmable.

National Pollutant Discharge Elimination System (NPDES)

The NPDES permit system was established under section 402 of the CWA to regulate municipal and industrial discharges to surface waters of the United States. The discharge of wastewater to surface waters is prohibited unless an NPDES permit has been issued which allows that discharge. Each NPDES permit contains limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge. Under the NPDES program, dischargers are required to monitor and provide reports on compliance with their permit limits. These reports, formally titled Discharge Monitoring Reports (DMRs), are submitted to the appropriate regulatory agency, and they describe water quality data and analysis. The regulatory agency or any interested citizen can review this data to determine whether or not the discharger has complied with its NPDES permit requirements, and, if appropriate, pursue action to enforce compliance. Nevada City's WWTP operates under Order No. R5-2012-0033 (NPDES Permit No. CA0079901). The County Sanitation District's Lake Wildwood Treatment operates under NPDES Permit Order No. R5-2009-0005. Lake of the Pines WWTP operates under WDR Order R5-2009-0031 (NPDES Permit No. CA0081612). The City of Grass Valley WWTP operates under Order No. R5-2009-0067 and NPDES Permit No. CA0079898.

Enforcement of NPDES guidelines and permits in western Nevada County falls within jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB) and is subject to review by the EPA

Regional Administrator (EPA Region IX, San Francisco Office). In addition, the RWQCB regulates activities involving discharges to land or groundwater from diffused sources. A Report of Waste Discharge must be filed with the CVRWQCB to obtain a Waste Discharge Requirement (WDR) for these types of non-surface water discharge.

Congress amended the CWA in 1987 to include non-point source pollutants. Non-point source pollutants are often chemicals from lawns or gardens, automobile residues, urban runoff, or household cleaning agents or compounds. Non-point source pollution can also include runoff from agricultural uses. Most non-point source pollutants enter the wastewater stream and the water supply in large quantities and sudden surges, largely due to storm events. Although the EPA has established NPDES requirements for storm water, control of this type of pollution has proven to be difficult and will require costly upgrades in existing wastewater treatment plants.

As of June 2014, the SWRCB has indicated that it is working on the Six-Year Plan (2014-2020) with Regional Water Quality Control Boards and U.S. Environmental Protection Agency. These new regulations may further affect the wastewater agencies in western Nevada County, especially those with high storm water infiltration rates.[11]

Section 303(d) Impaired Waters List and TMDLs

Under Section 303(d) of the CWA, states are required to develop lists of water bodies which will not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). The Upper Yuba has six water bodies (Deer Creek [Yuba County], Humbug Creek, Kanaka Creek, Englebright Lake, Little Deer Creek, and Scotts Flat Reservoir) listed as impaired due to mercury, arsenic, copper, zinc, sediment/siltation, and/or pH.[12] According to the recent Cosumnes American Bear Yuba (CABY) Integrated Regional Water Management Plan (IRWMP), "the heavy metal pollution legacy (primarily mercury) is the most high-profile water quality contaminant in the region which poses significant risks to aquatic organisms and ecosystem health."[13] Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the cumulative load that the water body can receive and still be in compliance with water quality objectives. These limitations are then placed in the discharger's NPDES permit as water quality-based effluent limitations.

National Toxics Rule

The EPA established the National Toxics Rules (NTR) to create numeric criteria for priority toxic pollutants for California and 13 other states and territories that were not in complete compliance with the CWA. For California, the NTR established water quality standards for protection of aquatic life and/or human health for 36 pollutants for which water quality criteria exist, but which were not covered under California's statewide water quality regulations.

[11] State Water Resources Control Board. Nonpoint Source Pollution (NPS) Control Program. www.waterboards.ca.gov/water_issues/programs/nps.

[12] State Water Resources Control Board. 2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report).

[13] CABY IRWMP, Update 2013. Chapter 6: Water Quality, p 6-6.

California Toxics Rule

The Clean Water Act (33 U.S.C. § 1251 et seq.) is the federal law that governs and authorizes water quality control activities by the EPA. Pursuant to federal law, the EPA has the NTR. There are 126 constituents listed in the California Toxics Rule (CTR) criteria, which include the previously issued NTR criteria for California.

Some of the key elements of the CTR include:

- Amended numeric standards for 30 toxic pollutants and added new criteria for 8 toxic pollutants to protect aquatic life and human health uses for water bodies.
- Dissolved-based standards for most trace metals and endorsement of the use of translator mechanisms for determination of local metals objectives.
- Provisions for compliance schedules to provide time for permittees to meet the new toxics standards.
- Provisions for mixing zones when calculating toxic constituent effluent limitations.
- Use of interim effluent limits to provide time for dischargers to take actions to meet final limits.

The EPA recently promulgated numeric water quality criteria for priority toxic pollutants and other water quality standards for waters in the State of California pursuant to section 303(c)(2)(B) of the CWA if those pollutants could be reasonably expected to interfere with the designated uses of states' waters. Although California had adopted numeric criteria for priority toxic pollutants in 1992, the courts ordered California to rescind these water quality control plans in 1994 and the new water quality criteria rule, known as the California Toxics Rule (CTR), temporarily replaced the standards adopted in 1991. The CTR established:

- Ambient aquatic life criteria for 23 priority toxics;
- Ambient human health criteria for 57 priority toxics; and
- Compliance schedule provision.

Under the CTR various regional water quality control boards will issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met. Currently each basin plan, as prepared by the regional water quality control board, contains a water quality criterion that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This has been contested by local jurisdictions all over California since it is expected to add significantly to the cost of wastewater treatment.

EPA contends that since California is implementing EPA's current regulations, the CTR will not impose any incremental costs and that the water quality criterion does not directly create economic impacts. EPA staff notes that California has some discretion to develop mechanisms that could result in more flexibility for local areas (e.g., site-specific criteria, phased TMDL program).

However, EPA also estimated the potential costs and benefits of this final rule. The annual costs throughout the state ranged from $33.5 million to $61 million. Total annual benefits were estimated in the range of $6.9 to $74.7 million and included categories such as avoided cancer risk, recreational angling, and passive use benefits. EPA did not try to estimate the annual cost in benefit for water-related uses, land-based recreation, or human health improvements. EPA concluded that the total financial benefits underestimate the full benefits of the new criteria. Many local agencies strongly

disagree with the EPA cost/benefit conclusions because they feel the cost estimates for implementation are low.

For Nevada County, the Central Valley RWQCB does not require a separate and specific CTR permit. The wastewater agencies that discharge to surface waters were required to complete a number (depending on whether discharger is major or minor, municipal or industrial) of rounds of sampling under the CTR. Recently written permits include effluent limitations based on the results of the CTR samples; future permits will identify specific pollutants and limits based on current testing.

California Wastewater Treatment Regulations

The California Water Code is the principal state regulation governing the use of water resources within the State of California. This law controls, among other issues, water quality protection and management, and management of water-oriented agencies. Division 7 of the California Water Code, commonly referred to as the Porter-Cologne Act, is the principal mechanism for regulation of water quality and pollution issues within California. This act established a regulatory program to protect the water quality and beneficial uses of all state waters. The Porter-Cologne Act also established the State Water Resources Control Board and California Regional Water Quality Control Boards (RWQCB) as principal state agencies responsible for water quality control. The SWRCB has divided California into nine regions with Nevada County located in the Central Valley RWQCB.

The Porter-Cologne Act grants the SWRCB and regional offices broad powers to protect water quality and is the primary vehicle for implementation of California's responsibilities under the federal CWA. These broad powers include the authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of hazardous materials and other pollutants. The Porter-Cologne Act also includes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil/petroleum product.

The Central Valley RWQCB, as with all other regional boards, must formulate and adopt a water quality plan for its region which must conform to the Porter-Cologne Act. The Porter-Cologne Act also provides that a regional office, such as the Central Valley RWQCB, may include within its regional plan water discharge prohibitions applicable to local conditions, areas, and types of waste. The regional offices are also authorized to enforce discharge limitations, take actions to prevent violations, and conduct investigations about the quality of any of the waters of the state. Civil and criminal penalties are applicable to persons who violate the requirements of the Porter-Cologne Act or SWRCB/RWQCB orders.

The Porter-Cologne Act also requires local governments to notify their regional office of the filing of tentative subdivision maps of six (6) or more family units unless the development discharges waste into a community sewer system. It also requires that any person discharging or proposing to discharge waste, even individual septic systems for single-family residences, to file a report with the regional offices. For more than 20 years, the Central Valley RWQCB has waived the filing of those reports for individual septic systems in Nevada County since the County's Department of Environmental Health (EH) had adopted substantially similar policies and ordinances regulating waste discharge. However, local jurisdictions in Nevada County are still required to notify the Central Valley RWQCB of development with six units or more.

Other state agencies with jurisdiction or involvement in water quality regulation in California include the Department of Public Health (DPH) for drinking water regulations and water reclamation criteria, the

Department of Pesticide Regulation, the Department of Fish and Game, and the Office of Environmental Health and Hazard Assessment.

Local Wastewater Regulations

The Cities of Grass Valley and Nevada City have policies and procedures consistent with the Central Valley RWQCB recommendation for connection to a public wastewater system in urbanized areas. Specifically, both cities generally require areas receiving sewer service to be annexed to the city.

Since Nevada County has adopted ordinances compatible with the Central Valley RWQCB "Guidelines," the County EH Department approves wastewater disposal systems for subdivisions of less than 100 lots. However, even for subdivisions of less than 100 lots, enough information must be forwarded to the RWQCB, along with specified reports and permits, for the RWQCB to assess the consistency of the development with State regulations. It should be noted that Central Valley RWQCB can also regulate, and may require their approval of systems for subdivisions of less than 100 lots.

Wastewater Solids Regulations

Solids generated at a wastewater treatment facility comprise screenings, grit, primary or raw sludge (PS) and secondary or waste activated sludge (WAS). The screenings and grit are typically dewatered and disposed in a landfill. Sludge generated by a wastewater treatment facility is defined as biosolids once beneficial use criteria, as determined by compliance with EPA regulations, have been achieved through stabilization processes. Stabilization processes are described as those that help reduce pathogens and reduce vector attraction.

Several federal, state, and local regulations are in place that influence whether biosolids from municipal wastewater treatment plants can be reused or disposed of. Increased concerns and debate over biosolids disposal and its associated environmental impacts have led to more stringent revisions and amendments for many of these regulations. Continuing changes in regulations affecting biosolids management make a flexible management program essential.

Federal, state, and local agencies are responsible for regulating biosolids beneficial reuse/disposal. The authority of each agency varies based on the beneficial reuse/disposal methods employed. However, overall guidelines are established by the EPA. These guidelines are in turn implemented by state and local governments. Many state and local agencies in California have developed additional rules, guidelines, and criteria for biosolids management.

In order to implement the long-term biosolids permitting program, required by the Water Quality Act of 1987, the EPA initiated two rule makings. The first rulemaking established requirements and procedures for including biosolids management in NPDES permits, procedures for granting state biosolids management programs primacy over federal programs, or for federal programs to implement biosolids permits if a state so chooses.

The second rulemaking proposed to regulate and control biosolids permitting was 40 CFR Part 503, Standards for the Use and Disposal of Sewage Sludge. This rule addresses three general categories of beneficial reuse/disposal of biosolids including:

- Land application of sewage sludge for beneficial use of organic content;
- Surface disposal of biosolids in a monofill, surface impoundment, or other dedicated site; and
- Incineration of sewage sludge with, or without, auxiliary fuel.

Future Regulatory Considerations

This section provides insight into the future regulatory considerations that may affect County sewer systems' effluent discharges. Identifying future regulatory trends is critical for the following reasons:

- Developing treatment scenarios and alternatives;
- Planning for process and layout requirements for future regulatory compliance; and
- Making budget considerations for major design and construction projects.

Identifying future pollutants of concern (POCs), such as metals, nutrients, and/or pathogens, will help to develop alternatives that are flexible and can be easily expanded or upgraded to treat future POCs. For example, planning may include reserving space in the site layout for nutrient reduction, tertiary filtration, advanced oxidation, or an alternative disinfection method that would provide treatment of future POCs.

Nutrients, including nitrogen and phosphorus, are the leading cause of impairments to the nation's surface waters and as a result are receiving greater regulatory scrutiny regarding their contribution to the overall quality of the nation's receiving waters. Although appropriate amounts of nutrients are vital for the health and proper functioning of water bodies, excessive nutrient concentrations can cause water quality degradation.

Nationwide Nutrient Criteria

In November 2007, the National Resources Defense Council (NRDC) filed a petition with the EPA to require that nutrient removal be included in the definition of secondary treatment. The petition stated that "there are many [biological processes] which can achieve total phosphorus levels of 1.0 milligrams per liter (mg/L) as a monthly average, and a total nitrogen of 6 to 8 mg/L as an annual average" (NRDC et al, 2007).

In response to the petition by NRDC, the National Association of Clean Water Agencies (NACWA) wrote to the EPA in February 2008, September 2009, and June 2010 urging the EPA to deny the petition to modify the secondary treatment regulations for several legal, technical, and political reasons including but not limited to the potentially exorbitant cost to publically owned treatment works and the inappropriateness of establishing national limits for local and regional water quality issues (NACWA, 2008; NACWA, 2009). In October 2009, the EPA stated they were actively analyzing the data and information to prepare a report and preliminary response to the NRDC petition. They stated they would consider NACWA, other stakeholders, and all information carefully before taking action on the NRDC petition (U.S. EPA, 2009a).

Due to the scientific uncertainties associated with the development of numeric nutrient criteria and the magnitude of the expected costs of compliance, nutrient water quality policies are very controversial and have sparked several legal actions across the country. The State of Florida has become the initial focus of environmental groups' efforts to push the EPA to develop federal numeric nutrient criteria to be imposed on the states. The EPA has agreed to a consent decree in the environmental suit, and has made a determination that numeric nutrient standards are necessary in Florida. Proposed criteria for total nitrogen and total phosphorus were released in January 2010. This action is possibly precedential, and may result in environmental groups suing the EPA to impose nutrient criteria in other areas of the country.

State of California Nutrient Numeric Endpoints

In addition to the increasingly stringent regulation of nutrients, there is a trend towards increasing regulation of emerging microconstituents and bioaccumulative pollutants in treated effluent discharges.

Microconstituents and Bioaccumulative Constituents

Microconstituent, also referred to as "contaminants of emerging concern" (CECs) by the EPA Office of Water, are substances that have been detected in surface waters and the environment and may potentially cause deleterious effects on aquatic life and the environment at relevant concentrations. Microconstituents include:

- Persistent organic pollutants (POPs) such as polybrominated diphenyl ethers (PBDEs; used in flame retardants, furniture foam, plastics, etc.) and other organic contaminants.
- Pharmaceuticals and personal care products (PPCPs), including a wide suite of human prescribed drugs, over-the-counter medications, bactericides, sunscreens, and synthetic musks.
- Veterinary medicines such as antimicrobials, antibiotics, anti-fungals, growth promoters, and hormones.
- Endocrine-disrupting chemicals (EDCs), including synthetic estrogens and androgens, naturally occurring estrogens, as well as many other compounds capable of modulating normal hormonal functions and steroidal synthesis in aquatic organisms.
- Nanomaterials such as carbon nanotubes or nano-scale particulate titanium dioxide.

Bioaccumulative constituents are substances that are taken up by organisms at faster rates than the organisms can remove them. As a result, these constituents accumulate in the organism and the food chain, and can remain in the environment for long periods of time. Mercury, polychlorinated biphenyls (PCBs), and dioxins are some bioaccumulative constituents that are being increasingly regulated.

Monitoring requirements for these trace pollutants are increasing, including requirements to analyze constituents at lower detection limits. It is likely that water quality criteria followed by new effluent limits will be added to permits. Implementation of CEC standards is not expected to be imminent as the EPA is currently focused on assessing the potential impact CECs have on the environment and human health.

The State Water Resources Control Board (SWRCB) is in the process of developing statewide policies for nutrients. The SWRCB held a scoping meeting in October 2011 to seek input on content for a proposed Nutrient Numeric Endpoint (NNE) framework and policy for inland surface waters.

California State Recycled Water Policy

The SWRCB adopted a Recycled Water Policy (RW Policy) in 2009 and updated in 2013 to establish more uniform requirements for water recycling throughout the State and to streamline the permit application process in most instances[14]. The RW Policy includes a mandate that the State increase the use of recycled water over 2002 levels by at least 200,000 acre-feet per year (AFY) by 2020 and by at least

[14] Details are at the State Water Board website at www.swrcb.ca.gov/water_issues/programs/water_recycling_policy/.

300,000 AFY by 2030. It also includes goals for stormwater reuse and conservation and potable water offsets by recycled water. The onus for achieving these mandates and goals is placed on both recycled water purveyors and potential users. Since the recycled water project permit process is streamlined, projects will not be required to include a monitoring component. If any regulations arise from new knowledge of risks associated with CECs, then projects will be given compliance schedules. Regulations are not expected to arise in the imminent future.

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Chapter 4
ONSITE WASTEWATER SYSTEMS

4.1 INTRODUCTION

For the purposes of this service review, an onsite wastewater system is defined as both an individual septic system for one connection, such as a single-family residence, and a community septic system which might serve multiple connections such as an apartment or an industrial park.

Individual onsite systems and any community system not operated by one of the four public wastewater agencies in the region are not subject to LAFCo requirements for service reviews or spheres of influence. However, since approximately 65 percent of the total population in Nevada County uses onsite systems, a discussion of the issues associated with onsite systems is critical to comprehensively address wastewater provision in western Nevada County. Suggestions for change have been included; however, implementation of many of the suggestions is beyond the purview of LAFCO.

4.2 OVERVIEW OF REGULATIONS FOR ONSITE WASTEWATER SYSTEMS

Federal Onsite Wastewater Regulations

The federal government assumes no direct role in regulation of onsite sewage treatment systems, although it is indirectly involved through the requirements of the Safe Drinking Water and the Clean Water Act. The actual regulation of onsite systems is delegated to state and local government.

State Onsite Wastewater Regulations

The California State Water Resources Control Board (SWRCB) has the statewide responsibility for protecting water quality. The state is divided into nine water quality regions, corresponding to one of nine major drainage basins. Each basin is governed by a Regional Water Quality Control Board (RWQCB) that sets policies unique to the issues in that basin. While the regional boards also issue waste discharge requirements for wastewater systems, they generally delegate direct regulatory authority for individual and some community onsite systems to local agencies. Exceptions are made when water quality impairments occur in a basin. Nevada County is located in Region 5, the Central Valley RWQCB.

In 2000 the California Legislature passed Assembly Bill (AB) 885, requiring the SWRCB to adopt regulations or standards for the permitting and operation of onsite wastewater treatment systems (OWTS). In response, the SWRCB developed the "Water Quality Control Policy for Siting, Design, operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy),"[1] which took effect May 13, 2013. The OWTS Policy establishes a statewide, risk-based, tiered approach for the regulation and management of OWTS installations and replacements and sets the level of performance and protection expected from onsite wastewater treatment systems (OWTSs). Implementation of the OWTS Policy is overseen by the SWRCB and implemented through the RWQCBs. Further, local agencies have the opportunity to implement local agency management programs (LAMPs) if approved by the applicable regional water quality control board.[2]

The SWRCB has allowed up to 60 months after the effective date of the OWTS Policy, or upon approval of a LAMP, for local agencies to transition to full compliance with the Policy. In the meantime, local agencies may continue to implement their existing OWTS permitting programs in compliance with the Basin Plan in place at the effective date of the Policy. The exception to this schedule allowance is the case of Tier 3 systems, which took effect on the effective date of the OWTS Policy in May 2013. Tier 3 systems are those that require an advanced protective management system, such as systems located near impaired surface water bodies that are subject to a Total Maximum Daily Load (TMDL) implementation plan, a special provision contained in a LAMP, or are located within 600 feet of a water body listed in the OWTS.[3] The following table provides a summary of OWTS Policy tiers:

[1] SWRCB, Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy) (2012).
[2] SWRCB, Summary of Board Adopted Policy (2014).
[3] SWRCB, *OWTS Policy* (June 2012), 13.

Table 4-1. Summary of OWTS Policy Tiers	
Tier	Description of Parameters
Tier 0: Existing OWTS	• Applies to properly functioning systems that do not need corrective action and are not near an impaired water body subject to TMDL, local agency's special provisions, or located within 600 feet of a water body listed on OWTS Policy Attachment 2. • Maximum flow rate is 10,000 gpd.
Tier 1: Low Risk New or Replacement OWTS	• Applies to new or replacement OWTS that comply with conservative siting and design standards described in the OWTS Policy. • Tier 1 applies when a LAMP has not been approved by the RWQCB. • Maximum flow rate is 10,000 gpd.
Tier 2: Local Agency Management Program (LAMP) for New or Replacement OWTS	• Applies to new or replacement OWTS that comply with the siting and design standards in an approved LAMP. LAMPs are developed by local agencies based on local conditions; siting and design standards may differ from Tier 1 standards. • Maximum flow rate is 10,000 gpd.
Tier 3: Advanced Protection Management Program	• Applies to OWTS located near impaired surface water bodies that are subject to a TMDL implementation plan, a special provision contained in a LAMP, or is located within 600 feet of a water body listed on OWTS Attachment 2. • Supplemental treatment requirements may apply to a Tier 3 system. • Maximum flow rate is 10,000 gpd.
Tier 4: OWTS Requiring Corrective Action	• Applies to systems that are not properly functioning (failing). • Failure may be indicated by surfacing effluent, wastewater backing up in plumbing fixtures, OWTS component/piping structural failure, or significant groundwater or surface water degradation.

The OWTS Policy also includes minimum site evaluation and siting standards. In addition to soil and site evaluations, including percolation tests, the Policy establishes minimum horizontal setbacks for siting OWTSs. Specific setbacks for OWTS treatment components and dispersal systems include 5 feet from property lines and structures; 100 feet from water wells, monitoring wells, springs and flowing surface water bodies; 100 feet from unstable land masses; 200 feet from vernal pools, wetlands, lakes, ponds, and surface water high water marks; 150 feet from public water wells; and 1,200 feet from public water

systems' surface water intake point.[4] Additionally, the regulations limit effluent disposal on slopes greater than 25 percent and specifies allowable average densities for subdivisions occurring after the Policy's effective date.[5] Additional qualifications and limitations, such as limitations on depth to groundwater and minimum soil depth, are included in Section 7.0 of the OWTS Policy.

Many local agencies, particularly areas with poor percolation and steep slopes, are concerned with the financial impact of AB 885 on local government. This is of particular concern in western Nevada County where a majority of residences and businesses use onsite systems and where soils have been classified as having the potential for "severe" problems for septic tanks and leach fields, primarily due to slopes, inadequate depth, or an inability to percolate water.[6] The Nevada County Department of Environmental Health (EH) is in the process of preparing a LAMP and updating its onsite sewage disposal ordinance to address the OWTS Policy requirements. As of the writing of this document, EH staff reported that they were working with the Sanitation District Technical Advisory Group (SDTAG) and were in the process of recruiting a consultant with direct experience with AB855 to assist them with the LAMP and ordinance update.

Local Onsite Wastewater Regulations

The Nevada County EH Department regulates the design, construction, maintenance, and operation of onsite systems. In 2004, EH staff estimated they received approximately 1,400 applications annually for new onsite systems, and issued roughly 1,700 permits per year. This number has since dropped significantly due to the recession of 2008, of which the effects are still substantial. Since 2009, EH staff have received a total of 440 applications and have issued an average of 61 permits annually over the past five years.[7] Currently, western Nevada County has approximately 22,500 septic systems.

The Nevada County EH Department also directly supervises soils testing and site evaluation, and reviews and approves design for new onsite systems. Prior to 1991, applicants prepared a report for the soils testing, evaluation, and design for a new onsite system, which was then submitted to the Nevada County EH Department. The EH inspector visited the site, reviewed the report, and determined if potential problems existed. After 1991, EH began to require that a trained County employee be present during soil testing. This has significantly reduced septic system failures and has provided more certainty for property owners in sizing and locating disposal systems.

The current Nevada County Onsite Sewage Disposal (OSSD) Ordinance and Regulations were adopted in 1998. A Sewage Disposal Technical Advisory Group, which has been meeting regularly since 1998, is tasked with developing recommendations to update the County Ordinance and Regulations for compliance with AB 885. Local agencies may continue operating under currently adopted regulations for all Tiers, except Tier 3 OSWD (see State Regulation Section above), until May 13, 2018.

Nevada County OSSD regulations establish setbacks and replacement areas for onsite systems. Regardless of the zoning, all new parcels created in Nevada County that plan to use an onsite system must be

[4] SWRCB, *OWTS Policy* (June 2012), 20-21.
[5] Ibid: 22.
[6] Dudek & Associates, Inc., Municipal Service Review Nevada County Western Region Wastewater Service Agencies (January 2004): 4-2.
[7] David Huff, Interim Environmental Health Director (September 18, 2014).

large enough to accommodate the required Minimum Useable Sewage Disposal Area (MUSDA) for the onsite system and the onsite system's reserve/replacement area. The reserve area, which is required to be the same size as the primary septic system, is evaluated and protected to the same extent as the primary septic system area for maximum effectiveness and protection.

Nevada County's zoning regulations for minimum lot size for a new parcel require that if it has a private well or an individual onsite system, the minimum lot size is 1.5 acres; for a parcel with both a private well and an onsite septic system the minimum lot size is 3 acres. Existing, legal and/or non-conforming parcels are not precluded from development of a well and septic if a site evaluation, including soil testing, shows that the minimum well and septic standards can be met.

It should be noted that the requirements for new onsite systems and for the repair/replacement of existing systems are different. While the same site and design standards apply to repairs as well as to new systems, if an existing parcel with a failing system cannot meet minimum standards, EH has historically permitted a repair that does not meet minimum requirements if any potential hazard to health or water quality is mitigated by the system design.

The current County regulations also include performance parameters for experimental onsite systems. Sites that might have had difficulty constructing a typical onsite system due to lot size, setbacks, soils types, or other reasons could propose an experimental onsite system. Experimental systems must be proven effective before they are designated by Nevada County as "special design" systems.

To ensure the continued successful operation of a special design system, the 1998 regulations require routine inspections and maintenance. The Nevada County EH staff determines the maintenance requirements and upgrades/replacements for the system as well as inspection schedules. Inspections are performed by professionals certified by EH. The property owner and EH keep copies of the inspection record and maintenance requirements.

Adequate setbacks from building areas and from water sources such as wells are also critical. Nevada County has adopted minimum standards for setbacks from both septic systems and Code. The table shows the categories of wastewater systems, classified by the number of sources and the regulating agency. It should be noted that the Central Valley RWQCB can regulate systems of less than 99 connections where the proposed system design does not appear to the Central Valley RWQCB staff to protect water quality.

Table 4-2. Categories of Wastewater Systems			
Type of System	No. of Sources	Regulating Agency	Subject to LAFCo
Individual septic system	1	Nevada County EH	No
Cluster wastewater systems	2-5*	Nevada County EH	Yes, if formation and/or annexation to public entity required
Small, centralized wastewater systems	6-99*	Nevada County EH	Yes, if formation and/or annexation to public entity required
Large wastewater collection system	99+	Central Valley RWQCB	Yes, if formation and/or annexation to public entity required
* Central Valley RWQCB can and does regulate systems of fewer than 99 connections if water quality appears to be at risk.			

Some of the wastewater systems are monitored by Nevada County's EH; some are monitored by the Central Valley RWQCB. The Central Valley RWQCB also has separate staff that monitors publicly-owned wastewater treatment plants that discharging to surface waters and that monitor land disposal systems.

4.3 SIGNIFICANT ISSUES

As western Nevada County continues to grow, one of the most significant wastewater issues will be the increased use of onsite systems for single, multiple and commercial/industrial development. Some form of onsite system currently serves approximately 65 percent of the County's population and this percentage is expected to increase. The topography of western Nevada County, with its steep slopes and varied terrain, made the cost of extending public wastewater lines and of pumping to centralized public wastewater systems economically infeasible in the past. Therefore, onsite systems have appeared to be the logical choice for providing wastewater service. However, there may be significant issues with the continued use of onsite systems.

It is assumed that a proliferation of onsite systems have the potential to contaminate and degrade surface and groundwater supplies. In 1974, the California Department of Water Resources (DWR) published a study noting that groundwater-drinking supplies in western Nevada County were contaminated by bacteria caused primarily by inadequate sewage disposal systems from individual homes. However, the 1974 report only surveyed North San Juan and Chicago Park. A new community wastewater collection system and treatment facility was installed in 1990 to correct problems in the North San Juan area.

Regular testing of the water supply can determine if groundwater is contaminated. However, Nevada County does not regularly test water supply wells. The 2004 MSR noted that anecdotal information

indicated that generally 27 percent of these wells tested show levels of coliform in excess of accepted levels.[8] (Nevada County EH did not have updated information for the current review.) While it is thought that inadequate and improper wastewater disposal is the primary cause of high coliform levels, the causal relationship between failing septic systems and high coliform levels in wells is not conclusive. Coliform bacteria are ubiquitous in soil. Sampling well water after working on a water pipe, maintaining the well pump, removing and replacing the well-head cover, etc., may result in a water sample showing the presence of coliform bacteria since the tests are extremely sensitive. Coliform bacteria are 'indicators' of potential water contamination and additional analyses for other microorganisms are required to confirm fecal contamination of the water.

Currently, testing of water quality is conducted in western Nevada County by the local jurisdictions, watershed groups, the Central Valley RWQCB, the state, and non-profit groups. The multiple testing sometimes results in a lack of coordination, and lack of a regional effort and collection of water quality data can be a concern. In addition, many of the same entities monitoring water quality impacts also compete for the same grants, which further dilute efforts to establish a regional and consistent source of data regarding any water quality impairment.

As more land with steeper slopes and marginal soils are developed in western Nevada County, the number of failures of onsite wastewater systems might be expected to increase. However, there are two factors, one existing and one potential, which might mitigate the incidence of increased failures. First, as required by Nevada County OSSD, parcels with severe constraints require septic systems designed to mitigate the constraints; if they cannot be mitigated, the lot cannot be developed. In addition, development of the LAMP for compliance with the OWTS Policy may require the determination of the number, rate, and location of failures; data which could help to reduce the risk of future failures. Additionally, the LAMP may need to include monitoring and maintenance of systems permitted after approval by the Central Valley RWQCB.

There seems to be a general consensus that there are some failures of onsite systems although the locations vary with the source of information. For example, a report prepared in 1992 for the Nevada County General Plan update noted:[9]

"Septic tank and leach field system problems have evolved in localized portions of western Nevada County for a variety of reasons including soil conditions, slope, small lot sizes and inadequate permit and construction practices… [and] areas such as the Alta Sierra subdivision and La Barr Meadows have a history of failing leach fields."

The Alta Sierra development—which has 3,000 lots with septic systems, 400 vacant parcels, and has had a high rate of onsite failures— has been a point of discussion in Nevada County since the 1992 report. To determine the validity of the contention that there is a high rate of onsite septic system failures, the Nevada County Department of Transportation and Sanitation, in conjunction with the Alta Sierra's Property Owner's Association and Nevada County Sanitation District No. 1, reviewed a sample of existing Nevada County EH Department file data to determine the current rate of septic

[8] Dudek & Associates, Inc., Municipal Service Review Nevada County Western Region Wastewater Service Agencies, January 2004; 4-7.
[9] Ibid: 4-5.

system failures. The study, which is included as Appendix A in the 2004 MSR, did not find an unusual or significant rate of failure.

The Nevada County EH Department, as the agency with primary responsibility for onsite systems, could track failing septic systems when a property owner applies for a permit to repair a failing system; however, the permit data about repair and replacement of failing onsite systems are aggregated with other permits and separate data on failing systems is not readily available.

Other sources of information regarding the potential number of failing onsite systems were researched. In August of 2003, the California Wastewater Training and Research Center produced a status report addressing onsite wastewater systems in California. That report estimated that 300 onsite systems are installed each year in Nevada County and there are approximately 90 repairs of existing systems.[10] Assuming that all repairs are for failing systems, this is a failure rate of approximately 0.005 percent, which is not considered significant. It should be noted, however, that the number of onsite systems installed, as estimated by the California Wastewater Training and Research Center, is not consistent with the estimates provided by the EH staff regarding the number of onsite system permits issued annually.

The issue of reliable data regarding the rate and locations of failures of onsite systems, and the link between onsite systems and water quality, will become increasingly important as growth continues in western Nevada County and as the State OWTS Policy is implemented. Development of LAMPs for the OWTS Policy will require local agencies to maintain data on system failures.[11]

Nevada County, by ordinance, requires small centralized wastewater systems to be operated by a public agency or to annex to an existing public agency. In the past, the requirement to form a public entity was usually satisfied in one of two ways: formation of a public district or annexation to the Nevada County Sanitation District No. 1. The requirement was apparently adopted to ensure that a taxing agency was established to finance any needed improvements and provide oversight and accountability to lessen the potential for public health impacts.

The result has been an “either/or” situation. Either a very small district is formed that may not have the population, funding, or expertise to reach economies of scale; or annexation to a public agency is required. However, LAFCo is prohibited from forming a district without adequate funding to provide services. Therefore, for the unincorporated areas where a majority of the annexation requests have originated, the Nevada County Sanitation District No. 1 annexed these areas as separate zones. Each individual zone then assumed the financial, legal, and operational responsibility for its area. Consequently, the Nevada County Sanitation District No. 1 is operating systems with as few as forty customers and the systems must still meet all federal and state regulatory requirements. The result is high rates for customers with the certainty that, as stricter discharge requirements are approved and implemented, rates will increase.

New developments that cannot annex to existing public systems must sometimes install expensive and sophisticated wastewater “package plants” to meet strict regulatory requirements. Package plants are

[10] California Wastewater Training & Research Center and EPA Region 9 Groundwater Office, *Status Report: Onsite Wastewater Treatment Systems in California*, August 2003: 45.
[11] SWRCB, *OWTS Policy,* June 2012: 31.

pre-manufactured treatment facilities used to treat wastewater in small communities or on individual properties. Package plants can treat flows as low as 0.002 MGD or as high as 0.5 MGD. However, each package plant must also meet the regulatory requirements and are typically more expensive to operate than larger, centralized systems due to reduced economies of scale.

The Central Valley RWQCB has the regulatory authority to regulate any wastewater system. However, it has been their practice in the past to regulate/monitor only those wastewater systems with more than 99 connections that discharge to surface waters or are land disposal systems. Recently, the Central Valley RWQCB has decided to regulate some systems in Nevada County with fewer than 99 connections to protect water quality, and has in some cases required annexation to, or formation of, a public agency for those systems. In Nevada County, private corporations operate several systems, including some mobile home parks that are monitored by the Central Valley RWQCB. County EH estimates that the Central Valley RWQCB monitors between 10 and 20 facilities in western Nevada County.[12]

The combination of water quality and public health concerns, stricter water quality and land disposal requirements, escalating rates, and decreasing budgets is a major concern for local jurisdictions. It is suggested that Nevada County—including local jurisdictions and other entities—develop a more regional policy for addressing future onsite wastewater provision. The policy should address the following issues:

Improving the collection of data

It is suggested that Nevada County explore the possibility of changing the project tracking system to develop a historical record of onsite system failures.

Improving regional monitoring of water quality

Water quality data should also be collected according to clear and accepted protocols with complete data shared among entities. To facilitate the process, all entities, private, non-profit, and public, should cooperate on funding and grants on a regional basis.

While it is suggested as part of this service review that all water supply wells be tested regularly, the Nevada County EH staff has noted that this could be a significant effort with concomitant costs. There are thousands of wells in Nevada County and issues of cost, staffing and the legality of entering private property to sample and test wells were noted as being potentially considerable. However, well sampling would help to establish a causal link, if any, between water quality impairment, wastewater systems, and public health concerns.

Reducing the number and the long-term reliance on onsite systems

It may not be possible for all new development to connect to centralized, public wastewater systems; however, a series of larger sub-regional, centralized facilities may reach economies of scale not available with onsite systems. A method of evaluating the economic and environmental impacts of the various treatment options and providing direction to reduce the long-term reliance on onsite systems should be developed.

[12] David Huff, Nevada County Interim Environmental Health Director (September 18, 2014).

Improved guidance for real estate transactions

Sometimes onsite system failures occur following a real estate transfer due to a lack of owner disclosure or a change in the number and types of people living in the home. While some realtors and lenders currently require septic system inspections, there are no federal, state, or local regulations requiring inspections at the time of a real estate transfer to assure that necessary repairs and upgrades are made. Any regional policy for onsite systems should include guidance for onsite system inspection for all systems as part of a real estate transfer.

Improved coordination among agencies

Any regional policy regulating onsite systems should provide a clear understanding of who the regulatory agencies are, what type and size developments are regulated, and standards for when deviations from existing policies are allowed. The policy should address the best governance structure for these wastewater systems including public agencies, private entities, homeowners' associations, community facilities districts (Mello-Roos), or private corporations. It may also be beneficial for Nevada County LAFCo to develop a policy that establishes standards for the formation of new public entities for wastewater provision.

Increased knowledge of alternative technologies

Additional information about special design onsite systems and package plants should be included in a regional policy along with methods to evaluate the cost/benefits, and potential impacts of each system.

Improved inspection and maintenance including upgrade and repair of existing systems

Monitoring all existing septic systems, not just special design systems, should be made a priority to protect water quality and to establish a system that can comply with the State OWTS Policy. Currently, Nevada County does not regularly monitor any septic systems. Nevada County regulations require that certain (pressurized-distribution) systems are annually inspected by a private-industry certified service provider and that a report be submitted to EH. The County charges a minimal "data-tracking" fee. The existing inspection program could be expanded to all existing and future onsite wastewater systems although the effort to expand the current monitoring system would be significant. The frequency of monitoring and costs could be prorated based on risk factors and health issues. Public education programs, similar to one provided by the Alta Sierra Property Owners Association to educate property owners about the need for regular cleaning of onsite systems, could be included.

Regional sludge disposal facilities

Another issue noted during the preparation of this report is the disposal of sludge from public treatment plants as well as from local companies providing onsite system cleaning. Currently some sludge is trucked to Roseville in Placer County where the sludge is processed into "Class A" material and sold for gardening and agricultural operations. Currently, the City of Grass Valley a sludge dewatering operation that is handling approximately 400-500 tons of sludge, which is then processed and disposed of by separate contract (typically for land applications and agricultural

reuse).[13] The City of Nevada City also dewaters sludge before taking it to a landfill. Both processes, which typically increase the percent of solids from 1 percent to approximately 16 percent, make the handling and disposal more economical. Additionally, the Lake Wildwood zone in the County has a sludge dewatering facility. The multiple sludge handling facilities appear to be a duplication of services. The wastewater agencies and private companies in Nevada County might consider constructing a joint sludge processing facility or expanding an existing facility. This might reduce costs, traffic, and dependence on other jurisdictions' facilities and policies.

Funding

Locating additional funding sources are an obvious necessity as local jurisdictions and ratepayers are being asked to bear the costs for stricter regulatory requirements.

[13] Tim Kiser, City of Grass Valley Director of Public Works (September 12, 2014).

REFERENCES

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Chapter 5
CITY OF GRASS VALLEY

5.1 CITY OF GRASS VALLEY PROFILE

Type of District:	City
Enabling Legislation:	A Charter City under the California Constitution Article XI
Functions/Services:	Full service City providing police, fire, parks and recreation, water, wastewater, streets, land use planning, and general administrative services. Wastewater services include collection, treatment, and disposal of sewage, industrial waste, and storm water.
District Area:	City limits
Sphere of Influence:	City Sphere of Influence
Population:	12,793

Budget (FY 2013/2014):	$5,377,117
Main Office:	125 East Main Street, Grass Valley, CA 95945
Mailing Address:	same
Phone No.:	(530) 274-4310
Web Site:	www.cityofgrassvalley.com/departments/public-works
Contact Person:	Robert Richardson, phone 274-4312
Email:	r.richardson@cityofgrassvalley.com
Alternate Contact:	Kristi Bashor, City Clerk, phone 274-4310
Governing Body:	Five-member City Council, elected to 4-year terms

Name	Position	Term Ends
Jan Arbuckle	Council Member	12/2016
Howard Levine	Council Member	12/2016
Lisa Swarthout	Council Member	12/2016
Jason Fouyer	Council Member	12/2018
Benjamin Aguila	Council Member	12/2018

Meeting Schedule:	Second and fourth Tuesday of each month, 4:00 p.m.
Meeting Location:	City Hall Council Chambers, 125 East Main Street, Grass Valley 95945
Date of Formation:	September 18, 1951

5.2 OVERVIEW OF CITY OF GRASS VALLEY

Type and Extent of Services

The City of Grass Valley is a full service city, providing police, fire, water, wastewater, recreation, streets, and administrative services. This chapter focuses on the City's provision of wastewater services, which includes collection, treatment and disposal of sewage and industrial pretreated waste. To serve its residents, the City's Public Works Department operates a wastewater treatment plant (WWTP), and maintains 64 miles of pipelines and seven wastewater lift stations within the collection system.[1] The WWTP currently treats an average of 1.9 million gallons per day (mgd) and is permitted to treat up to 2.78 mgd.[2]

Location and Size

The City of Grass Valley is located approximately two miles south of the City of Nevada City at an elevation of approximately 2,400 feet above sea level. The original town site was settled in 1850 and

[1] PMC, *Southern Sphere of Influence Planning and Annexation Project Draft EIR*, 2013: 3.12-8. www.cityofgrassvalley.com/services/departments/cdd/DEIR_south_county/3.12%20Public%20Utilities.pdf

[2] City of Grass Valley, Response to Nevada LAFCo Request for Information (June 2014): 5.

officially incorporated as a charter city in 1893. The City is the second largest of the County's three incorporated cities. Grass Valley is located at the junction of State Highways 49 and 20 and encompasses approximately 3,000 acres within its boundaries, with an additional approximately 4,070 acres within its sphere of influence (SOI). The U.S. Census Bureau estimated the 2013 population of the City at 12,793.[3]

5.3 FORMATION AND BOUNDARY

The original town site was settled in 1850 and officially incorporated as a charter city in 1893. Since its formation, it has grown from 574 acres to its current size of 3,002 acres.

Boundary History

Since its incorporation, the City of Grass Valley has added 2,399 acres through a total of 93 annexations. Since preparation of the 2004 MSR, the City has annexed the majority of the Glenbrook Basin under the Glenbrook Annexation Strategy, a portion of Morgan Ranch, and the Loma Rica special development area. Since the preparation of the 2004 MSR, the Glenbrook Annexation Strategy was completed, which added approximately 200 acres (332 parcels) of urbanized area to the City boundaries. Most of the Glenbrook basin already received wastewater services from the City, and consequently minimal impact to the system occurred.

The following table provides a list of annexations since the 2004 MSR:

Table 5-1. Annexations into the City of Grass Valley since 2004[4]

Title of Annexation	Parcels	Acreage	Developed (# potential new connections)	Year
Glenbrook West C, East B	54	94	Mixed	2004
Glenbrook West A	70	45	Yes	2004
Partridge	1	0.17	Yes	2004
Morgan Ranch West	26	18	No (25)	2004
Makiah Woods	2	13	Mixed	2006
Di Martini	4	13	Mixed	2006
Glenbrook West EFG	70	45	Mixed	2006
Hastert-Jones	1	2	Yes	2007
Showler	1	1	Yes	2007
Milco	3	8	No (6)	2011

[3] U.S. Census Bureau. *Quick Facts Grass Valley, CA* (2013). www.quickfacts.census.gov/qfd/states/06/0630798.html.
[4] Nevada LAFCo, Wastewater Annexations Since 2004, 2014.

Table 5-1. Annexations into the City of Grass Valley since 2004[4]				
Title of Annexation	Parcels	Acreage	Developed (# potential new connections)	Year
Loma Rica	9	455	No (700)	2012

Sphere of Influence

The City's SOI was last updated in 2011. There are a few islands within the former Glenbrook zone of the County Sanitation District that remain in the City's SOI and directly outside/adjacent to the City's SOI. As a parcel within the former Glenbrook zone gets annexed to the City, LAFCo should ensure it is concurrently detached from the County Sanitation District Glenbrook zone. See the Nevada County Sanitation District chapter for further discussion and determinations. The City's boundary and sphere of influence are shown in Figure 5.1.

Extra-territorial Services

The City has stated that they do not currently provide any wastewater services to customers outside its boundaries.

Areas of Interest

There are three special development areas (SDAs) located within the City's SOI, which have been identified in both the City's and County's General Plans as areas for targeted growth. The SDAs have included North Star, Kenny Ranch, and Southhill Village. Although developer proposals have been submitted on all three SDAs at various times over the years, all three are currently inactive. However, an area encompassing the Southhill Village has been proposed for annexation, and an EIR has recently been prepared. The proposed annexation consists of 120 acres directly adjacent to the City's southern boundary. The project, known as Southern Sphere of Influence Planning and Annexation, also includes General Plan amendments and pre-zoning of a total of 416 acres within and surrounding the 120-acre area proposed for annexation. No specific development is proposed with the project, and many of the parcels within the annexation area are developed or underdeveloped. The EIR states that of the 37 parcels planned for annexation, only 9 are vacant. General Plan land use designations for the area include a mix of residential, commercial and manufacturing uses.[5] A wastewater service feasibility study was prepared for the project and determined that with the extension of infrastructure, the City's wastewater facilities would be adequate to serve the project.[6]

[5] PMC, Southern Sphere of Influence Planning and Annexation Project Draft EIR, 2013: 2.0-1.

[6] SCO Planning & Engineering, Inc., Wastewater Feasibility Analysis – La Barr Meadows Road & Taylorville Road, (September 2012).

5.4 GOVERNMENT STRUCTURE AND ACCOUNTABILITY

The City of Grass Valley is a charter city, with council members elected to four-year terms. Council members elect one council member to serve as Mayor and another to serve as Vice Mayor for two years. Working under the City Manager and City Council, the Public Works Director/City Engineer is responsible for the day-to-day operations and provision of wastewater services. The City Council meets on the second and fourth Tuesdays of the month at 7:00 p.m. in the City Hall Council Chambers at 125 East Main Street, Grass Valley, CA.

Meetings are open to the public and are compliant with the Brown Act. In accordance with Government Code Section 54954, meeting notices and agendas are publicly posted at City Hall and on the City's website a minimum of three days prior to regular City Council meetings. City Council meeting agendas include a public comment item, during which time residents and customers may file comments and/or complaints. The City maintains a website with copies of City Council agendas and meeting minutes, as well as other boards and commissions.

The City has adopted policies addressing budget preparation, fixed asset accounting, investment of funds, and expense authorization. Budgets are adopted in public meetings and are available on the City's website. Additionally, the last independent auditor's report was dated June 30, 2012, and is available on the City's website. The audit found that there were no issues of noncompliance with financial regulations that could have an effect on the financial statement. The City demonstrates accountability through its public meeting and transparency policies, and encourages public participation through establishment of regular public comment during City Council meetings.

5.5 MANAGEMENT EFFICIENCIES AND STAFFING

The City of Grass Valley provides a range of municipal services to its residents, including City administration, police, animal control, fire, parks, and recreation, as well as other services. No issues were noted or reported regarding interdepartmental relations, communication, or coordination. The City provides comprehensive information regarding the organization, staffing, mission statement, and annual goals for the City through its budget and website. Personnel policies and procedures are adopted and periodically updated as-needed. Further, budgets have adequate funds for mandatory programs.

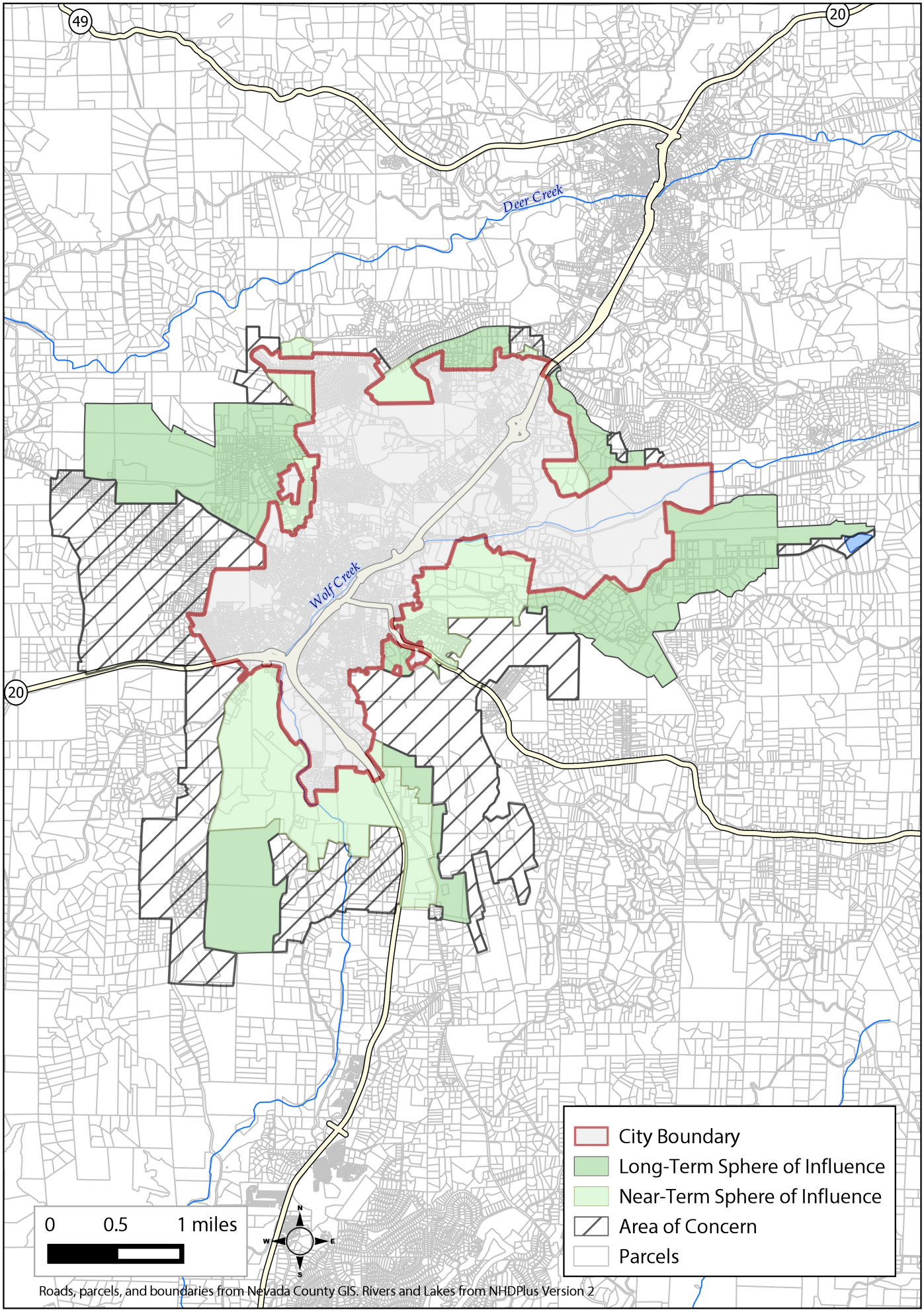


Figure 5-1

CITY OF GRASS VALLEY AND SPHERE OF INFLUENCE

The City of Grass Valley maintains a capital improvement (CIP) fund for future infrastructure improvements. The CIP is approved annually by the City Council and is developed with input from the public, other agencies, and City staff. Operation of the facilities occasionally results in violations of the NPDES permit. A systematic data collection system is in place. Resources for technology and improvement plans are allocated as available and as needed.[7]

The City manages wastewater services through its Water/Wastewater Division of the Public Works Department. In 2014, there were 13.1 full-time equivalent (FTE) employees that managed and operated the City's Sewer System. Management oversees the City's Wastewater Enterprise fund, and operation and maintenance of the City's Sewer System. Staff maintains and operates the collection system and treatment plant. Special studies may be contracted out and are solicited through the City's purchasing policies.

5.6 POPULATION AND GROWTH

Population

The U.S. Census Bureau estimated the 2013 population of Grass Valley to be 12,793. Between 2000 and 2010, the population of Grass Valley increased by 1,938 people (15.1 percent; or less than 1.5 percent per year). However, since 2010, the City's estimated population has actually decreased by 67 persons. In contrast, Grass Valley's population increased by 21 percent between 1990 and 2000, or two percent per year.[8]

Demographics for the City are based on the 2010 Census, which identified the largest age group represented in Grass Valley as the 55 and older group at 35.8 percent. Approximately 12 percent of the population was in the 45 to 54 years age group and 10 percent in the 35 to 44 years range. Approximately 23 percent of the residents were under the age of 19. Approximately 84 percent of the total population identified themselves as non-Hispanic white. The Hispanic population, which is the second largest ethnic group in Grass Valley, comprised 10 percent of the total population.[9]

Projected Growth and Development

The City of Grass Valley General Plan serves as the City's vision for long-term land use, development and growth, and provides the City's vision within its Planning Area which roughly coincides with the SOI boundary. The City's 2020 General Plan was adopted in 1999, although the Housing Element is updated every 5 years in accordance with state regulations.

The current City of Grass Valley Housing Element (2009-2014) identifies an estimated growth rate of two percent within the City and one percent in the surrounding unincorporated areas, including the SOI. The following population projections within the City are based on the Census Bureau's 2013 estimate as the

[7] Dudek & Associates, Muncipal Service Review Nevada County Western Region Wastewater Service Agencies (January 2004).
[8] City of Grass Valley, *Draft 2014-2019 Housing Element,* May 2014; II-1.
[9] Ibid.

base year and Housing Element growth rates. Due to the limited to negative growth experienced in recent years, the base year used for the City's Planning Area projections was assumed to be approximately the same as the 2010 base year used in the 2011 SOI Update Report.

Table 5-2. Population Growth and Projections (2013–2030)

	2013	2015	2020	2025	2030
City of Grass Valley*	12,793	13,310	14,695	16,225	17,913
City's Planning Area**	5,610[10]	5,722	6,015	6,321	6,644

* Assumes an annual growth rate of two percent within the City.

** Assumes an annual growth rate of one percent within the unincorporated areas of Nevada County.

Disadvantaged Unincorporated Communities

Senate Bill (SB) 244 requires LAFCo to identify and consider disadvantaged unincorporated communities (DUCs) when preparing MSRs and Sphere updates for cities and special districts that provide sewer, water, or structural fire protection services. A DUC is defined by the Water Code as one in which the median annual household income (MHI) is 80 percent of the statewide average. Incorporated communities are also defined as disadvantaged when the MHI falls below 80 percent. In 2010, the statewide MHI was $60,883; 80 percent of that is $48,706. The MHI for Grass Valley was $35,385 in 2010, which qualifies the community as a disadvantaged community.

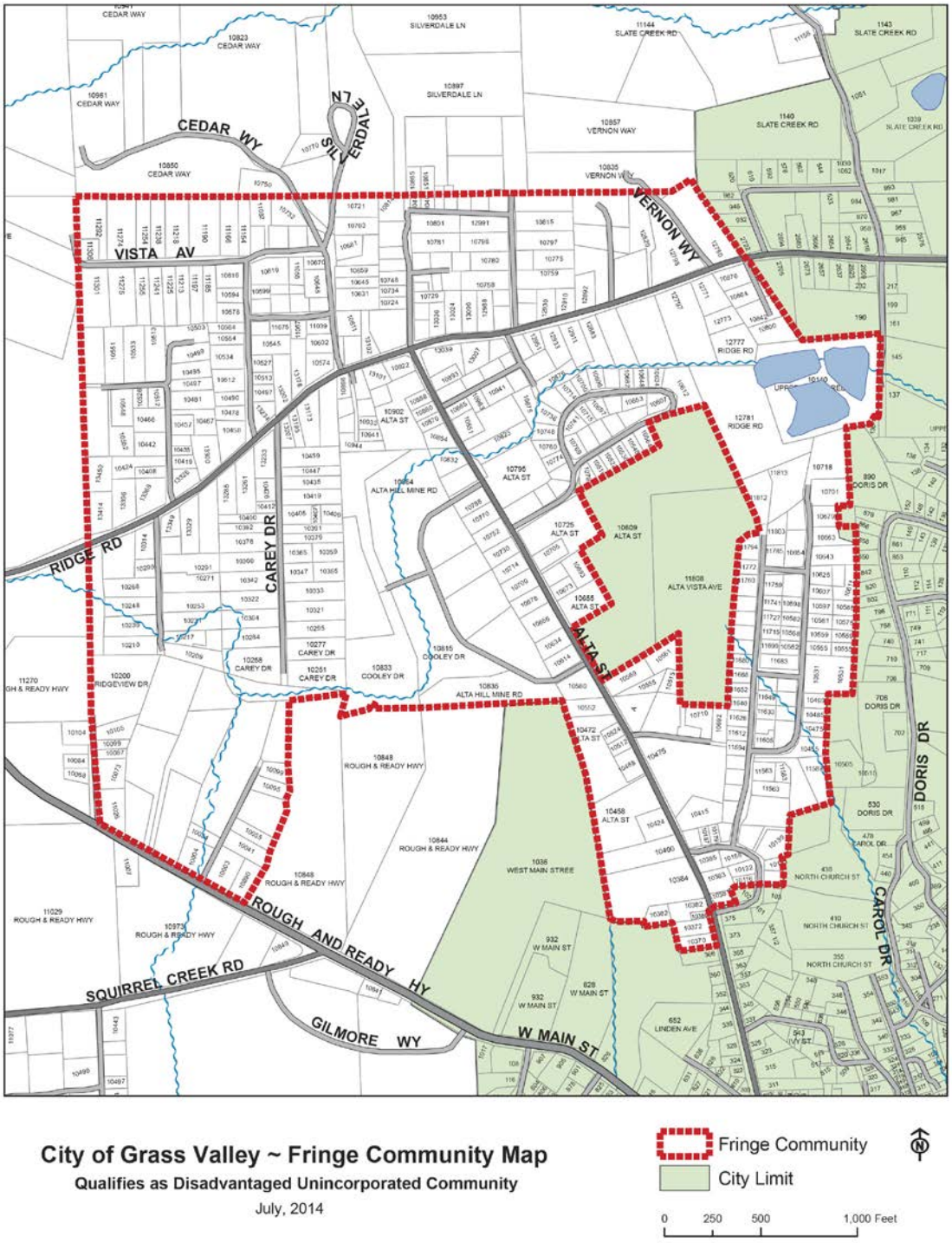
The City has further identified the Alta Hill area as a "Fringe Community" or DUC as shown in Figure 5.2. Nearly all of the homes in this fringe community have private septic systems. The City currently provides wastewater collection and treatment to less than 10 of the homes in the area. The 2000 expansion of the WWTP was completed in anticipation of the City providing wastewater service to address the expected demand of future growth and the developed lands within the SOI, including the Alta Hill area. The City's Wastewater Master Plan includes a plan to serve this area in the future. Although the area is well-served with basic infrastructure and no health or safety issues have been identified, the City does plan to provide sewer service to this DUC if there is need to do so in the future.[11] Additionally, the City has suggested that the Squirrel Creek and Slate Creek areas within the City's SOI may qualify as DUCs[12].

[10] Nevada LAFCo, City of Grass Valley Sphere of Influence Update (April 2011): 2-9.

[11] City of Grass Valley, Draft Analysis of Disadvantaged Unincorporated Communities (July 2014).

[12] Kiser, Tim and Trisha Tillotson, City of Grass Valley Public Works Department. Informational Interview with LAFCo and Consultants (June 6, 2014).

Figure 5-2: City of Grass Valley - Fringe Community Map



5.7 WASTEWATER SERVICES

Service Overview

The City provides wastewater collection, treatment and disposal to residents and customers within its boundaries. Customers consist of 4,349 separate sewer connections, 675 (15.5 percent) of which are commercial or industrial customers and 3,674 (84.5 percent) are residential. The City also serves two industrial users under a pretreatment ordinance and discharge permit.[13] Additionally, since early 2000s, the City has been treating water that is discharging from an abandoned mine portal located on City property. The City's WasteWater Division does not include stormwater management; that service is provided by other City divisions.

Wastewater Capacity

The City's permitted treatment capacity is 2.78 mgd, which equates to 14,555 equivalent dwelling units (EDUs).[14] The average flow volume is 1.9 mgd (9,500 EDUs). The peak flow in 2013 was 2.6 mgd.[15] There are two ponds located at the WWTP that are used to attenuate flows through the plant during peak flow events. The wastewater is then cycled back through the plant for treatment and disposal. The City indicated it has the ability to expand capacity to meet future projected increases in demand.

5.8 WASTEWATER INFRASTRUCTURE AND PUBLIC FACILITIES

Collection Systems

The City's system is comprised of approximately 64 miles of sewer collection system piplines of varying sizes and ages, 1,385 manholes, and 7 lift stations.[16] The system's infrastructure was originally constructed in the mid- 20th century. Consequently, both preventative maintenance and scheduled replacement of aging infrastructure is critical. City staff identify and prioritize structural deficiencies within the system as part of the annual update to the five-year capital improvement plan. The manhole and sewer line rehabilitation projects are mainly intended to reduce and/or eliminate sanitary sewer overflow (SSO) and inflow and infiltration (I/I) issues within the system. Rehabilitation typically involves slip-lining, cured-in-place lining, and pipe bursting and replacement.[17]

Included within the City's Sewer System Management Plan (SSMP) is a Collection System Master Plan (CSMP). The objectives of the CSMP are to (1) determine the capacity and limitations of the existing collection system, and (2) determine physical modifications, renovations and additions to the existing

[13] City of Grass Valley, Response to Nevada LAFCo Request for Information (June 2014).
[14] Nevada LAFCo, City of Grass Valley Sphere of Influence Update (April 2011): 4-29.
[15] City of Grass Valley, Response to Nevada LAFCo Request for Information (June 2014): 5.
[16] PMC, Southern Sphere of Influence Planning and Annexation Project Draft EIR, 2013: 3.12-8.
[17] City of Grass Valley, *Sewer System Management Plan* (September 2012): 7.

collection system necessary to meet current and future needs.[18] The City schedules approximately 30 percent of the Sewer Collection System for cleaning every year.[19] Maintenance activites are tracked through a software system called Cityworks, which allows for analysis of performance and cost of each component of the system, and will in turn aid the City in identifying maintenance and capital improvement needs. The City is currently in the process of updating its SSMP.

Treatment Systems

The WWTP was originally constructed in 1950 and is located on 29 acres of City-owned land. Additional modifications and improvements were made to the facility in the late 1970s, early 1980s, and 1990s to keep pace with state regulations and permit requirements. Further, in 2000 the WWTP capacity was expanded to treat up to 2.78 mgd, with 7.6 mgd capacity for peak flows. The current facility is a tertiary treatment plant and receives an average flow of 1.9 mgd. Influent is collected from the City of Grass Valley through 64 miles of sewer lines.[20] Influent undergoes primary treatment through bar screens, a grit hydrocyclone, and primary clarification in dual rectangular sedimentation basins. Wastewater then undergoes activated sludge treatment through one of two extended aeration basins, which includes nitrification and denitrification, pH adjustment, ultraviolet (UV) disinfection, and re-aeration through a cascade aerator outfall and stream-side rock pile diffuser prior to discharge.[21] The UV disinfection system was installed in 2009 during an upgrade of the WWTP that also upgraded the biological nitrogen removal process.

The City's WWTP operates under Order No. R5-2009-0067 and NPDES Permit No. CA0079898. This permit expired on June 12, 2014. In the Spring of 2014 the City submitted permit renewal application along with all required materials. The RWQCB is processing the permit renewal and final approval has been delayed due to funding/staffing shortages at the state office. It is anticipated that the permit renewal will be approved in June 2015 and until then, the City's WWTP will continue to operate under its old permit[22].

In December 2007, the City received Cease and Desist Order No. R5-2007-0163 from the Regional Water Quality Control Board (RWQCB). The Order included the requirement of a pollution prevention plan and establishment of interim effluent limitations for aluminum, chloroform, copper, cyanide, dibromochloromethane, dichlorobromomethane, manganese, nitrate plus nitrite, and zinc.[23] The WWTP has since demonstrated compliance with the final water quality effluent limitations, with the exception of manganese and nitrate plus nitrite, which are due to discharges from the Drew Tunnel (owned by Newmont USA). The City has been operating under an extension of compliance schedule for meeting final effluent limitations until the Drew Tunnel discharge is rerouted to a privately owned and operated treatment facility.

[18] Ibid: 20.
[19] Ibid: 5.
[20] PMC, Southern Sphere of Influence Planning and Annexation Project Draft EIR, 2013: 3.12-8.
[21] SWRCB. *NPDES CA0079898; Order No. R5-2009-0067* (June 2008). www.swrcb.ca.gov/centralvalley/board_decisions.
[22] Personal communication, Tim Kiser, City Engineer, March 23, 2015.
[23] SWRCB. *NPDES CA0079898; Order No. R5-2009-0067* (June 2008): F-6. www.swrcb.ca.gov/centralvalley/board_decisions.

In September 2013, the city also received notice of the imposition of fines from the CVRWQCB due to discharges from the City's WWTP if violation of the City's permit. The discharges relate to twenty-one events from June 2009 through January 2014 which resulted in spills to Wolf Creek in quantities ranging from 5 to 63,500 gallons. Several of these spills are related to the Drew Tunnel by Newmont. The fines are in the form of an Administrative Civil Liability complaint and total $209,000. A Settlement Agreement to resolve this issue with the RWQCB is currently being considered by the City[24].

In November 2013, a non-profit organization named River Watch sent the City a Notice of Violation under the Clean Water Act. The City's Mayor approved the Settlement Agreement on January 29, 2014 thereby agreeing to pay $30,000 to River Watch for their legal costs and agreeing to a variety of improvements to the City's wastewater water quality monitoring and reporting and to the City's sewer inspection and maintenance program. Specifically the new improvements include inspecting and televising all gravity sewer lines; repair or replacement of certain gravity sewer main lines; refinements to the City's SSO reporting forms (see Appendix # AP.3 Water Quality Database Reports); conducting additional water quality sampling; contracting with a registered Environmental Health Specialist or biologist to develop a protocol to be implemented as part of the City's SSO remediation procedures; developing an ordinance establishing a program for the mandatory homeowner/business owner inspection and/or repair of privately owned sewer laterals; and the provision of additional data to River Watch[25].

On August 4, 2014, Newmont was issued a Notice of Applicability (NOA), Limited Threat General Waste Discharge Requirements Order R5-2013-0073-01 for a Drew Tunnel Groundwater Treatment System. The NOA covers the installation and operation of an interim Green Sand/Multi-media water treatment system (GSWTS) to treat groundwater discharging from the Drew Tunnel mine portal. The GSWTS has a design capacity of 1.73 mgd and is designed to remove metals present in the Tunnel discharge. The treated water will no longer be piped to the City's WWTP; it will be discharged directly to Wolf Creek. Backwash water from the GSWTS will be occasionally delivered to the City's WWTP for final treatment and discharge. The GSWTS was fully operational and discharging under a separate RWQCB permit by September 2014. Furthermore, Newmont will be coordinating with the City to construct a permanent facility in the near future.[26]

Disposal

Disposal of grit and bar screenings are hauled off-site to an approved landfill. Sludge from the primary sedimentation basins is pumped to an anaerobic digester. Waste activated sludge is not directly sent to digestion, but returns indirectly through the primary sedimentation basins. Digested sludge is decanted in a sludge lagoon prior to dewatering through a belt filter press. Sludge decant and belt filter press

[24] Report to City Council by Timothy Kiser for Council Meeting on February 10, 2015. Administrative Civil Liability Complaint R5-2015-0505. Available on-line at: http://www.cityofgrassvalley.com/files/attachments/agendas-2014/item5.1.pdf

[25] Report to City Council by Timothy Kiser for Council Meeting on January 28, 2014. Settlement Agreement with California River Watch. Available on-line at http://www.cityofgrassvalley.com/files-archived/agendas/STAFFREPORTS2014/AG012814/ITEM8.pdf.

[26] Kiser, Timothy. Public Works Director, City of Grass Valley. *City of Grass Valley City Council Staff Report* (August 5, 2014); 1.

filtrate are returned to the primary clarifier or the storage reservoir. Belt filter press cake is transported off-site for disposal via land application by Synagro West LLC at Silva Ranch.[27] The treated wastewater is discharged to Wolf Creek under the City's NPDES permit, which is a tributary of the Bear River, via an outfall equipped with a streamside rock pile diffuser.

Adequacy and Challenges in Provision of Wastewater Service and Infrastructure

The City provides adequate wastewater services to its customers. Furthermore, City staff and management continue to actively plan for providing services to meet projected demand.

An abandoned mine portal (Drew Tunnel), owned by Newmont USA Limited, was exposed on the City's property during excavation in 2000s. Drainage (which ranged from 0.3 to 1.0 mgd[28]) had been surfacing from the mine and drained to the storage reservoir for treatment prior to discharge into Wolf Creek. The mine discharge contains elevated levels of aluminum, iron, and manganese, and the water is low in pH and temperature. During rainfall events, the Drew Tunnel had introduced large volumes of water to the WWTP, which impacted operational functionality including capacity and treatment. In the past, discharges from the mine had resulted in a number of Cease and Desist Orders from the RWQCB, the most recent being in 2009. Under an agreement with the City, Newmont's new wastewater treatment facility went online on September 25, 2014, which has substantially reduced the amount of water that is treated by the City's WWTP. The City's facility has gone from treating roughly 300,000 gpd down to 20,000 gpd.[29] It is likely that operation of Newmont's new wastewater treatment facility will contribute towards the avoidance of future legal issues, settlement agreements, and fees, with organizations such as the RWQCB and River Watch.

Opportunities for Shared Facilities

The City does not currently share facilities or services with other agencies, nor have any opportunities to do so been identified by staff or in the preparation of this report. Although the 2004 MSR recommended consideration of shared wastewater facilities for the Cities of Grass Valley and Nevada City, City staff has indicated that due to topography, it is unlikely that such a proposal would be feasible in the near future.

[27] SWRCB. NPDES CA0079898; Order No. R5-2009-0067 (June 2008).

[28] Ibid.

[29] The Union. *Neighbors tour Newmont's New Water Treatment Facility.* www.theunion.com/news/13647965-113/treatment-newmont-facility-mining.

5.9 FINANCING

Revenues and Expenses

The City prepares an annual budget and financial statement, which includes details for each of its government and enterprise funds. The City maintains a separate enterprise fund for wastewater services, meaning that charges for services are intended to pay for the costs of providing such services.

Following is a summary of the last three fiscal years' annual budgets for the Sewer Enterprise Fund.

Table 5-3. City of Grass Valley Wastewater Enterprise Fund, Operating Fund 2010 Adopted Budgets[30]

Revenues	2011/2012	2012/2013	2013/2014 (adopted)
Utility User Fees	$4,554,935	$4,600,000	$4,700,000
Industrial Waste Permits	65,311	57,000	57,000
Other Revenue	220,905	10,000	9,600
Interest Income	31,769	15,000	15,000
Unrealized Gain (loss)	22,082	--	--
Other Grants – SCWW Proceeds	920,799	--	--
Expense Reimbursements	26,666	200,000	250,00
Transfer from Capital	975,769	--	--
Total	$6,818,235	$4,882,000	$5,031,600
Expenses			
Operating Expenses	$2,531,063	$2,581,506	$2,777,351
Debt Service Expenses	377,554	1,154,893	1,171,766
Capital Project Transfers	539,051	1,929,374	1,428,000
Depreciation	1,223,913	0	0
Total	$4,671,582	$5,665,773	$5,377,117
Changes in Available Resources	$2,146,653	(783,773)	(345,517)
Adjustment to Working Capital for Debt and Cap Assets	--	776,470	818,744
Adjustment to Working Capital for Reserves	--	(500,000)	(500,000)
Beginning Working Capital	3,120,431	5,267,085	4,759,781
Ending Working Capital	$5,267,085	$4,759,781	$4,733,009

[30] City of Grass Valley, Fiscal Year 2013/2014 Budget – Enterprise Funds (July 2013): C-2.

Asset Maintenance and Repair

The City budget includes sewer improvement construction budgeting through its Wastewater Enterprise Sewer Improvement Construction Fund #212. In FY 2012/2013, the City budgeted $642,261 and doubled that to $1,303,000 for FY 2013/2014. Projects included sewer system evaluations for NPDES permit compliance activities, WWTP future expansion analysis, WWTP headworks rehabilitation, infiltration/inflow improvements, Railroad Avenue lift station, completion of the 2011 sewer line replacement project on Kate Hayes Street, Le Duc Street sewer, the 2012 sewer lining project, and the 2013 sewer line repair project from Quartz to Main Street.[31]

Capital Improvements

The City has a capital improvement plan (CIP), which is updated regularly and identifies and prioritizes system improvements and costs. The 2013 CIP Summary includes over $34.6 million of maintenance and upgrades to the collection and treatment system, of which $29.5 million will be funded through user charges. Major improvements identified include annual manhole and sewer line rehabilitation, Slate Creek and Morgan Ranch lift stations, sewer lift station upgrades and maintenance, UV improvements, a sewer system evaluation, and WWTP improvements to meet NPDES permit requirements.[32]

Long-term Liabilities and Debts

The City obtained a Revolving Loan from the California Water Resources Control Board to finance its WWTP expansion in June of 2003. The original balance of the loan was $9,027,724 and is payable in annual installments of $378,896 to $532,072, has an interest rate of 1.8 percent, and a maturity date of July 31, 2022.

In August 2011, the City issued $5,930,000 in refunding debt to advance refund for outstanding Wastewater Certificates of Participation (COPs). The purpose of the refunding was to reduce the total debt service payments. In June 2012, the outstanding COPs were $6,360,000 and are considered defeased, meaning they were voided because the City has set aside cash or bonds sufficient to service the debt. As a result of the refunding, the City reduced its total debt service requirements by $592,222, which resulted in an economic gain of $476,511.[33] The independent auditor's report for fiscal year 2011/2012 stated that the City had made all payments on all debt on time.[34]

Cost Avoidance

The City uses competitive bidding and interagency purchasing (e.g., CMAS, etc.) to lower expenses and improve services. Additionally, the City has re-organized staffing/duties and consolidated crews to

[31] Ibid.
[32] City of Grass Valley, *Sewer System Management Plan* (September 2012).
[33] Smith & Newell, Financial Statements and Independent Auditor's Report for the Year Ended June 30, 2012 (2012); 42-43.
[34] Ibid: 12.

further create efficiencies of cost and resources. The City is also working with Opterra (formerly Chevron Energy Solutions) to reduce energy consumption of the City's sewer system.[35]

Rate Restructuring

Sewer rates for the City were last updated and adopted by the City Council in June 2013. The rates are based on a 2007 Cost of Services Study and undergo annual review and adjustment, per City policy.

Wastewater Fees (Effective July 1, 2013)[36]

A. Connection Fees (represents share of capital costs)

Residential – ranges from $9,768 per ¾" meter to $162,822 per 4" meter

Non-Residential - $4,882 per 100 gpd of wastewater discharge

B. User Fee per Month

*Residential Flat or Base Rates**

Single-family/duplex	$55.00
Multi-family	$43.19
Mobile Home Park	$31.66

Commercial

Flat monthly charge per unit	$21.73

Industrial Wastewater

Pre-treated industrial wastewater disposal permit	$123.00
Disposal of pre-treated industrial wastewater (per gallon)	$0.05

* The City also offers a 15 percent discount to qualifying low-income families. Residential users whose combined total annual household income is below 150 percent of the federal poverty level may make an annual application to the City for the discount.

5.10 DETERMINATIONS

Growth and Population Projections

1. The City bases growth and population projections on its General Plan.
2. Although the City has experienced a slight decrease in population since 2010, overall average growth rates for the next 20 years are estimated at two percent, which is consistent with the City's General Plan and Housing Element.
3. The City is in the beginning phases of updating its Housing Element and SSMP, which will include updating population and service projections.

[35] City of Grass Valley, Response to Nevada LAFCo Request for Information (June 2014): 9.
[36] City of Grass Valley, City of Grass Valley Fee Schedule Fiscal Year 2013/2014 (July, 2013).

Disadvantaged Unincorporated Communities

4. The MHI for Grass Valley was $35,385 in 2010, which qualifies the community as a disadvantaged community per the State Water Code.

5. Within its sphere of influence, the City has identified the Alta Hill area as a "Fringe Community" or DUC. Nearly all of the homes in this fringe community have private septic systems. The City's Wastewater Master Plan includes a plan to serve this area in the future. Although the area is well-served with basic infrastructure and no health or safety issues have been identified, the City does plan to provide sewer service to this DUC if there is need to do so in the future.

Present and Planned Capacity of Public Facilities

6. Since the adoption of the 2004 MSR, the City has completed a comprehensive upgrade and expansion of its WWTP, including installation of a UV disinfection system (2009). The WWTP now has a permitted average dry weather capacity of 2.78 mgd, which is equivalent to 14,555 EDUs.

7. The City's 2009 upgrade to the WWTP included the addition of UV disinfection to the process and an upgrade to the biological nitrogen removal process.

8. The City's current WWTP capacity has between 4,000 and 4,400 EDUs available based on average annual flows, and has sufficient capacity to serve the City's population. Additionally, once the discharges received from the Drew Tunnel are diverted to Newmont USA's own treatment facility, the City's WWTP capacity will increase to approximately 6,000 EDUs.

9. The WWTP is currently adequate to accommodate treatment capacity for the projected 2020 General Plan, which includes the buildout plans for the three major SDAs within the SOI.

Financial Ability of Agency to Provide Services

10. The City prepares a comprehensive annual budget and financial statement, and has adopted financial policies and procedures to ensure adequate funds concurrent with need.

11. The Wasterwater Enterprise Fund operates in a cost effective manner. Revenues and the current rate structure are adequate to operate the wastewater system and allow for necessary capital improvements.

12. The City annually updates its CIP and identifies collection and treatment projects and potential funding sources.

13. A small number of parcels within the Glenbrook Basin are still included in the County Sanitation District Glenbrook Zone. As these parcels are annexed to the City, LAFCo should ensure they are concurrently detached from the County Sanitation District Glenbrook Zone.

Opportunities for Shared Facilities

14. No opportunities for shared facilities were identified by staff or in the preparation of this MSR.

Accountability for Community Service Needs

15. The City Council is locally accountable, and adheres to applicable government code sections, has open and accessible meetings, disseminates information, and encourages participation.

16. The City demonstrates accountability through its public meeting and transparency policies, adherence to applicable government code sections, has open and accessible meetings, disseminates information, and encourages public participation through establishment of regular public comment opportunities.

17. Because portions of the City's sewer faclities and infrastructure date back to the mid-20th century, both preventative maintenance and scheduled replacement of aging infrastructure is critical. The City actively plans for and performs replacement and maintenance of its collection and treatment systems to stay current with state regulations and service needs.

Any Other Matter Relative to Service Delivery as Required by Commission Policy

18. There are no other aspects of the District's wastewater service that are required by Commission policy to be addressed in this MSR.

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www.theunion.com/news/13647965-113/treatment-newmont-facility-mining.

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www.quickfacts.census.gov/qfd/states/06/0630798.html.

Chapter 6
CITY OF NEVADA CITY

6.1 CITY PROFILE

Type of City:	General Law City
Enabling Legislation:	Article 11, Section 2 of the California Constitution, and Government Code Section 34102
Functions/Services:	Full service City providing police protection, fire protection, parks and recreation, water, wastewater, streets, land use planning, and general administrative services. Wastewater services provided include collection, treatment and disposal of sewage.
Main Office:	317 Broad Street, Nevada City, CA 96161

Mailing Address:	Same
Phone No.:	530-265-2496
Fax No.:	530-265-0187
Web Site:	http://www.nevadacityca.gov/
City Manager:	Mr. Mark Prestwich, Phone: Ext: 119
Email:	mark.prestwich@nevadacityca.gov
Alternate Contact:	Corey Shaver, Administrative Supervisor/Deputy City Clerk, Phone: Ext: 133
Email:	corey.shaver@nevadacityca.gov

Governing Body: City Council elected to four-year terms:

Name	Title	Term Expires
Terri Anderson	Mayor	June 2016
Jennifer Ray	Vice-Mayor	June 2016
Robert Bergman	Council Member	June 2016
Duane Strawser	Council Member	June 2018
Evans Phelps	Council Member	June 2018

Meeting Schedule:	Second and fourth Wednesdays of the month at 6:30 PM
Meeting Location:	City Council Chambers, City Hall, 317 Broad Street, Nevada City, CA 95959
Date of Formation:	April 19, 1856

6.2 OVERVIEW OF THE CITY

Nevada City was originally founded in 1850 and was incorporated as a general law city on April 19, 1856. The City is 2.2 square miles in size. Nevada City operates under a City Council-City Manager form of government. This is the second Municipal Service Review (MSR) on wastewater services provided by the City.

Type and Extent of Services

Nevada City is a full-service city that provides water, police protection, fire protection, recreation, animal control, solid refuse collection, streets, land use planning, administrative services, and wastewater services to its residents. This MSR will only address wastewater services. The City first began providing wastewater services to its residents in the mid-1890s. Today, the wastewater system serves almost everyone in the City, although there are a few scattered lots that still utilize septic tanks. Service is sometimes provided outside the City boundary, provided certain conditions are met. Wastewater services currently provided include collection, treatment and disposal of treated effluent and repairs and maintenance of wastewater facilities and associated infrastructure. The City does not currently provide sewer service for industrial facilities. Although the City has industrial zoning, the enterprises located there do not create industrial waste due to the type of operations.

In California, wastewater collection systems (e.g., pipes and infrastructure) sometimes intercept storm water drainage. This is not the case in Nevada City. Here, storm drainage typically drains directly to Deer Creek and its tributaries, and the City has very few stormwater management facilities. The City does have a few locations where old connections between the sewer lines and the storm drainage lines remain; however, these connections are actively being disconnected. When a connection with a storm drain is suspected, the Department of Public Works uses a camera to determine possible connections and then takes steps to remedy the situation. A seasonal challenge that the wastewater staff has noticed is storm water levels during rainy seasons, particularly in wet water years. Storm water level can result in increased flow at the wastewater treatment plant (WWTP), indicating some sort of permeability in the City's sewer lines.[1]

Location and Size

Nevada City is located in northern California, approximately 60 miles northeast of Sacramento. The City's boundaries cover 2.2 square miles (1,408 acres) and this makes it the smallest city in Nevada County. The City falls within the Deer Creek watershed basin, a sub-basin of the South Fork of the Yuba River.

The WWTP is located at 650 Jordan Street just southwest of downtown, along Deer Creek as shown in the topographic map, Figure 6-1. This location encompasses 5.54 acres in size and is at an elevation of 2,496 feet above sea level.[2] A wastewater treatment facility, lab, and offices are located on the site. Additionally, work related to administration, financial services, and management of the wastewater system is conducted at City Hall located at 317 Broad Street, Nevada City, CA 95959.

6.3 FORMATION AND BOUNDARY

Nevada City is a general law city and was incorporated on April 19, 1856.

Boundary History

When the City boundaries were initially established in 1856, the City was one square mile in size. Subsequent annexations have doubled the size of the City. In October 2008, Nevada LAFCo approved an update to the City's sphere of influence (SOI) and a detailed description of all the annexations that have occurred in Nevada City is provided therein.[3] A map of the Nevada City boundaries and sphere of influence is provided as Figure 6-2. The annexations that have occurred subsequent to the 2008 SOI update are described in the following paragraphs.

[1] Nevada City Taylor/Falconi. Personal Communication. January 14, 2015.
[2] Nevada County. GIS Department. Mobile Parcel Viewer. Accessed December 3, 2014.
[3] Nevada LAFCo. City of Nevada City Sphere of Influence Plan Update. October 2008. Appendix A. Page 94.

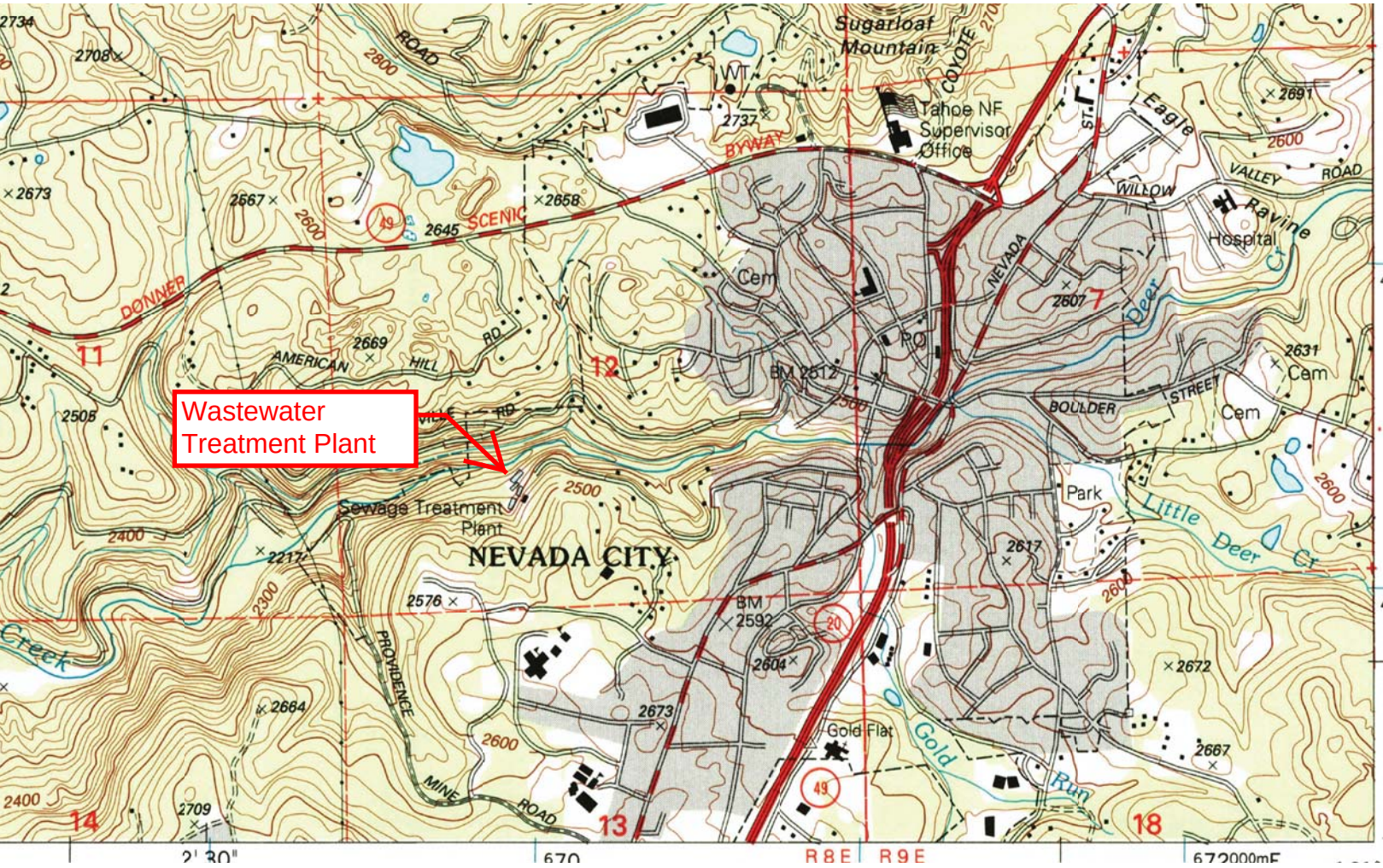

Figure 6.1: Location of Wastewater Treatment Plant

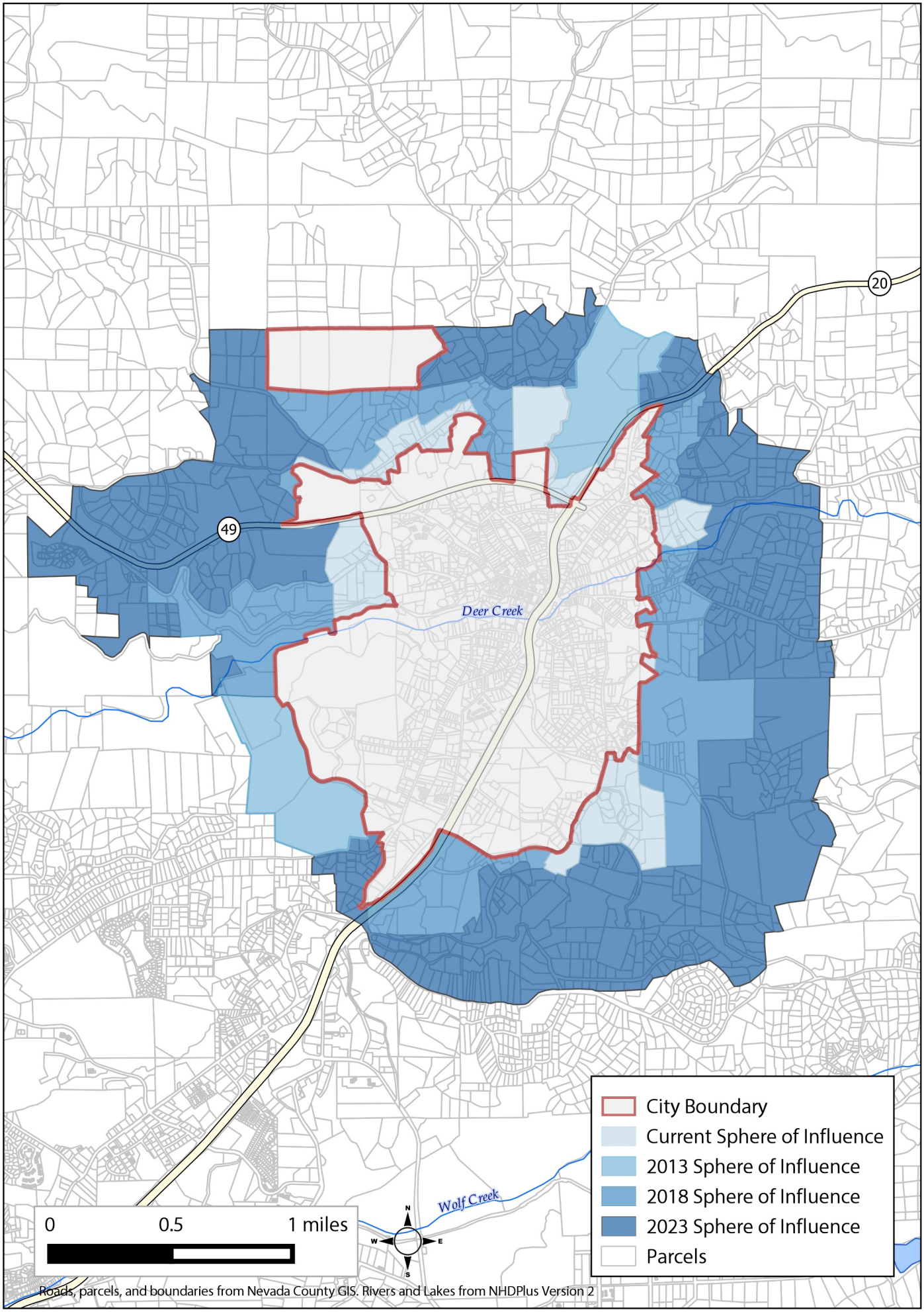

Figure 6-2 **NEVADA CITY AND SPHERE OF INFLUENCE**

In 2009, Nevada City annexed ten Northside parcels consisting of 63.2 acres located north and northwest of its boundaries at that time. This annexation consisted of four sub-areas including the following: 1) unimproved parcel adjacent to the County Administrative Center; 2) properties to the north and south of State Route 49 including residential lots off Beckman Street, County-owned old Juvenile Hall, and the old Forty-Niner Fire District Station; 3) two developed residential properties off American Hill Drive; and 4) City-owned Hirschman's Pond.[4] These ten parcels currently receive sewer service from Nevada City. Since these parcels are currently utilized for open space, government buildings, and low-density residences, significant future growth and development in this area is not anticipated for the near future.

In 2009, LAFCo approved the Gracie Commons Reorganization, which annexed two parcels into the City boundaries. This annexation was part of a proposed residential development project affecting four parcels comprised of 2.24 acres.[5] This Gracie Commons project, which has not yet been completed, would total 16 residential units, and sewer service would be provided by Nevada City through construction of a connection to the force main currently running along Gracie Road.[6]

In 2013, the City annexed four parcels (4.32 acres total) located at the end of Grove Street by LAFCo Resolution 13-02. These parcels were annexed because the septic tank on one parcel (194 Grove Street) had failed, and the City had extended sewer service outside City boundaries. Given the geographic location of the parcels, and the location of the sewer lines, it was both logical and consistent with local policies to annex all four parcels at one time.[7]

Over the past five years, the City has conducted three annexations of 16 parcels totaling 69.76 acres. These annexed properties currently receive sewer service from the City. The Grove Street parcels and the Northside parcels are not expected to grow significantly in the near future. The Gracie Commons Reorganization area does have the potential for future development of 16 residential units, and the City has a plan to provide sewer service to these parcels when that growth does occur.

The City's boundary now encompasses 1,784 parcels across 2.2 square miles. As shown in Figure 6-2, the City's boundary does include a discontinuous 106-acre piece known as the "old airport property". Although this site is within the City boundary, the City does not have plans to provide wastewater service to this area.

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[4] Nevada LAFCo. Staff Report For Public Hearing on Nevada City—Annexation: Northside. June 18, 2009. www.mynevadacounty.com/nc/lafco/docs.

[5] Nevada LAFCo, 2009, Resolution 09-23 Nevada City – Reorganization: Gracie Commons. www.mynevadacounty.com/nc/lafco/docs.

[6] Ibid.

[7] Nevada City. Staff report on Public Hearing to Consider Annexation Application. Available on line at: www.nevadacityca.gov/sites.

Sphere of Influence

Nevada City's sphere of influence (SOI) is comprised of four horizons: 1) a current sphere; 2) a 2013 sphere; 3) a 2018 sphere; and 4) a 2023 sphere (refer to Figure 6-2). The 2018 sphere is comprised of 331 parcels covering 1.7 square miles. A part of this area (Hurst Ranch Estates/St. Francis Wood, a 90-acre parcel) was the subject of an owner-initiated development application for annexation in 2009. However, the City ultimately decided that action on this proposal should wait until the 2018 timeframe[8]. The 2023 long-term phase is comprised of 644 parcels covering 2.64 square miles.

Three areas within the City's existing SOI may be ready for annexation to the City in the near-term including the Sugar Loaf Mountain properties, the HEW building, and the Wet Hill neighborhood.

Nevada City purchased approximately 40 acres on Sugar Loaf Mountain in 2010 for the purposes of providing open space and protecting the scenic qualities of this area. Sugar Loaf Mountain is outside the existing City boundary and within the current SOI. There are approximately six residential properties located between the City boundary line and the open space parcel which could be included in a future annexation in order to provide contiguity with the City limit line. The open space parcel will likely not require sewer service since recreational use could be accommodated with a composting toilet, an outhouse, or no facilities.[9]

The HEW building was County-owned at one time, has not been utilized for many years, and has structural deficiencies. An April 2014 fire resulted in additional damage to this vacant building. There are 19 properties located between the HEW building and the City limit line, and more detailed study is needed to determine whether the City would be able to physically provide sewer service to this area. However, the City anticipates that the current property owner will submit an application to develop housing on this site, and the City may require annexation of this site into the City in order to receive City services.

The Wet Hill and Cement Hill neighborhoods are unincorporated areas located north of the City limits, near the Nevada County Government Center. The homes in these neighborhoods currently rely on septic tanks, many of which were installed several decades ago. The City has been approached by property owners who feel it may be beneficial for this area to receive sewer service from the City. These two neighborhoods are within the City's current SOI. When the property owners are ready to submit a

[8] Nevada City Planning Commission. Summary Meeting Minutes. September 3, 2009. nevco.granicus.com/MinutesViewer.php.
[9] Nevada City. Staff Memorandum for City Council Meeting. Sept 28, 2011. www.nevadacityca.gov.

formal application for annexation to the City, the City will conduct a detailed analysis of the feasibility and potential cost of extending sewer lines to the neighborhood.

No other specific areas outside the City boundaries have been identified that require services from the City.

Extra-territorial Services

In 2008 LAFCo's SOI Update identified 20 parcels located outside of the boundaries of Nevada City that received City sewer services through out-of-agency service agreements. This list was reviewed with the City Engineer in 2014, who verified the accuracy of the list. The most notable properties outside the boundaries that receive sewer service via a City trunk line are the 1) Caltrans yard located on Gold Flat Road, adjacent to the freeway, and 2) the former HEW building located on Willow Valley Road. Most properties located outside City limits rely on septic tanks for sewage treatment/disposal. Please refer to Chapter 4 for more information.

Areas of Interest

No other areas outside the City boundaries have been identified that require services from the City. Particular areas of interest have not been identified.

6.4 GOVERNMENT STRUCTURE AND ACCOUNTABILITY

The City is governed by a five-member City Council, elected at-large to four-year terms. Mayor and Vice-Mayor are elected by the Council to 1-year terms. There have been no contested elections in the past five years. The current City Council is listed at the beginning of this chapter.

Members of the City Council serve as volunteers and do not receive meeting stipends, health insurance, or pension benefits. Council member travel expense claims are reviewed by the Finance and Administration Department consistent with the City's travel policy.

The City Council meets on the second and fourth Wednesday of the month at 6:30 p.m. in the City Council Chambers, 317 Broad Street, Nevada City, CA 95959. All meetings are open to the public and notices are publicly posted at least 72 hours prior to the meetings, in accordance with the Brown Act (Government Code §§ 54950-54926). The agenda for each City Council meeting includes a public comment period. Agendas are distributed via the City's website, fax, email and postal mail. The media is notified via e-mail. The local newspaper also publishes meeting notices. The City's website (www.nevadacityca.gov) is a communication vehicle for City meeting agendas, meeting minutes, videos of meetings, and information on the Agency's services and programs. The City Attorney is often present at City Council meetings to ensure compliance with the Brown Act, the conflict-of-interest regulations set forth in the Political Reform Act (Government Code § 81000 et seq.), and other applicable laws. The

City and its representatives have a solid record of adherence to the requirements of the Brown Act, the Political Reform Act, and similar laws.

The City Council engages in a strategic planning exercise on a regular basis and develops goals which guide their work. This type of strategic planning is indicative of an agency that is well managed and which demonstrates fortitude to carefully design their desired future conditions and to work to obtain their future goals.

The City maintains accountability to its customers primarily through open public meetings with the City Council and Planning Commission. Comments or complaints about the wastewater system can be sent to the City Engineer at City Hall. Approximately three comments or complaints about the wastewater system are received each year on a City-wide basis. Most comments relate to billing for wastewater service, general inquiries, pipe backups and customer account transfer requests. When technical complaints are received, the Department of Public Works will investigate. When a private sewer lateral line is plugged, questions sometimes arise about who is the responsible party. The City assumes responsibility only for City-owned main sewer lines located within the public right-of-way. Lateral lines located on private property are the responsibility of the property owner. When a sewer lateral crosses over several private parcels before joining a main, the Department of Public Works will investigate to determine responsibility. Occasionally, during the spring or fall season, the City will receive a complaint regarding odors at the WWTP, which is due to seasonal variability in bacterial abundance and composition at the plant.

The 2004 MSR recommended that the City improve its accountability by developing a website and posting information on it for the public. The City has completed this action and its new website provides a variety of information to the public. Additionally, Nevada City has a public outreach program which includes distribution of newsletters in periodic billing cycles. Public awareness of the City's wastewater activities and other programs is encouraged.

Nevada City provides the full-range of wastewater services including collection, treatment, and effluent/biosolids disposal. No other agencies were identified that could provide these services on a City-wide basis. In addition to the City's internal governance processes, it should be noted that the City's wastewater system is heavily regulated in terms of discharge. Nevada City operates under an NPDES Permit from the Central Valley Regional Water Quality Control Board.

6.5 MANAGEMENT EFFICIENCIES AND STAFFING

Nevada City operates under the direction of the elected City Council. The City Manager reports to the City Council and is responsible for directing City operations. The City Manager's job description is to plan, organize, direct and review the overall activities and operations of the City; represent the City locally, regionally and at the state and federal levels; and to ensure the best interests of the City are met. Wastewater services are managed and maintained by the City Public Works Department. The Public Works Department works in consultation with the City Engineer. The City Engineer is a contract position that provides technical expertise to the Public Works Department, including the wastewater services section. Although the Public Works Department has a total of seven employees, only three full-time employees and one part-time employee are dedicated to wastewater services as shown in Figure 6-3, Organization Chart WWTP, below. One of the full-time positions (Chief Operator), divides work time between the WWTP and the water services (drinking and municipal water) section.

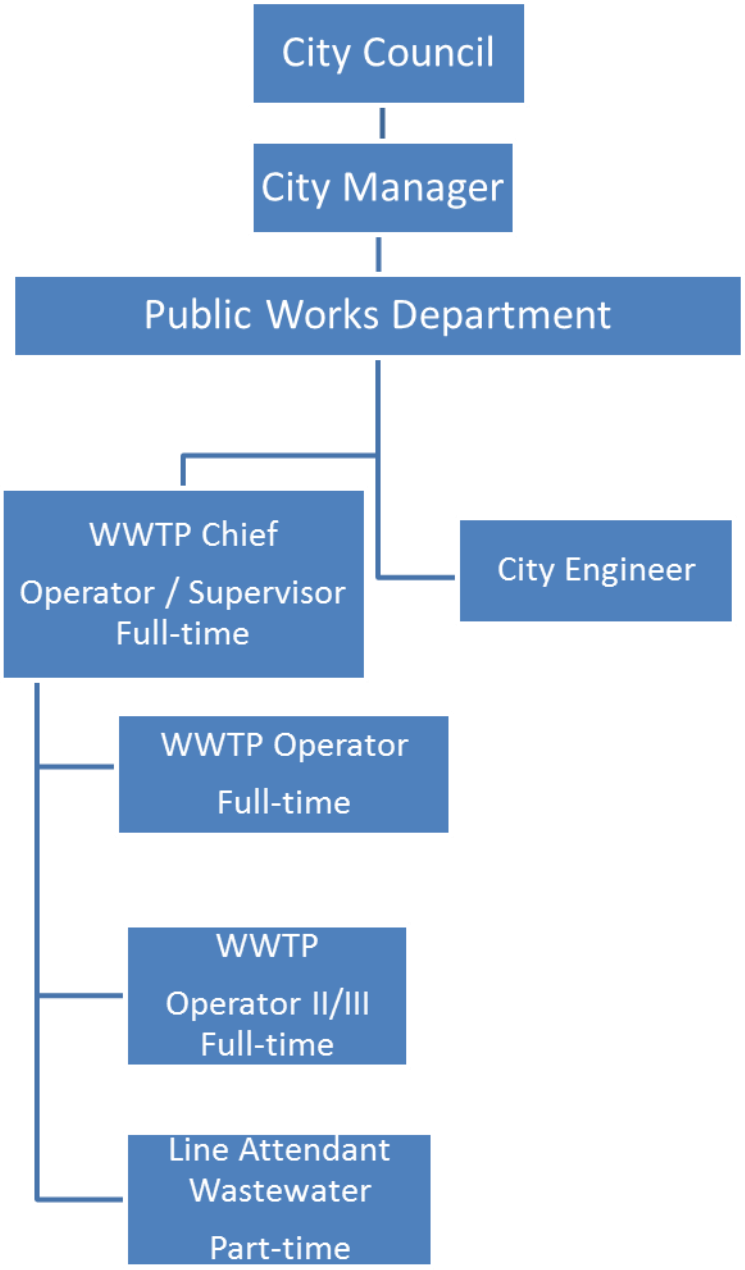
Two of the positions shown below have recently been filled with new employees. In addition to City staff, the City has an on-call contract with Fisher's Wastewater Services, a private company that has Grade IV WWTP operators available.[10]

Contact Information:
Mr. Mark Prestwich, City Manager
mark.prestwich@nevadacityca.gov
Verne Taylor, Director of Public Works
(530) 265-2496

The 2004 MSR recommended an action to improve management efficiency by creating a comprehensive, long-term approach toward operating and upgrading the wastewater system. To address this recommendation, the City is now preparing a Comprehensive Capital Improvement Plan (CIP) specific to wastewater services that will list and prioritize potential future projects to improve the system. Some projects under preliminary consideration for the list include replacement of water mains (some are 140 years old) and automating the WWTP by installing new sensors and controls.[11]

[10] Nevada City, Dec 10, 2014 City Council Agenda Packet. Available online at: www.nevadacityca.gov/sites.
[11] Falconi, Bill, Personal communication, January 14, 2015.

Figure 6-3 Nevada City Organizational Chart



6.6 POPULATION AND GROWTH

Population

Between census years 2000 to 2010, the City's population grew by 71 people, which equates to a 0.26 annual growth rate per Nevada City's Housing Element.[12] As of January 1, 2014, the population in Nevada City is estimated by the California Department of Finance at 3,016 persons. This represents a decline of 1.7 percent since the 2010 U.S. Census.[13]

The daytime population of workers in the City is much higher than the resident population because the City serves as the County seat and includes government offices such as the Eric Rood Administrative Center, the library, and the Courthouse. It is estimated that the daytime worker population is 11,000. Additionally, the City is host to several annual festivals, such as Victorian Christmas, the Wild and Scenic Film Festival, Father's Day bike race, and Summer Nights street festival. These festivals can add a temporary visitor population of thousands of people, sometimes up to 10,000 or more. The daytime worker population and the evening/weekend festival populations create additional demands on the City's wastewater system.

When tracking trends in growth of wastewater customers, the City Engineer estimates that the City may have added around 40 connections over the past 10 years. Part of this increase may reflect updated billing procedures such that now each parcel that receives service also pays for that service and customers are more accurately counted. The City now sends all customers a direct bill for the sewer services and bills are tracked based on addresses.[14]

Projected Growth and Development

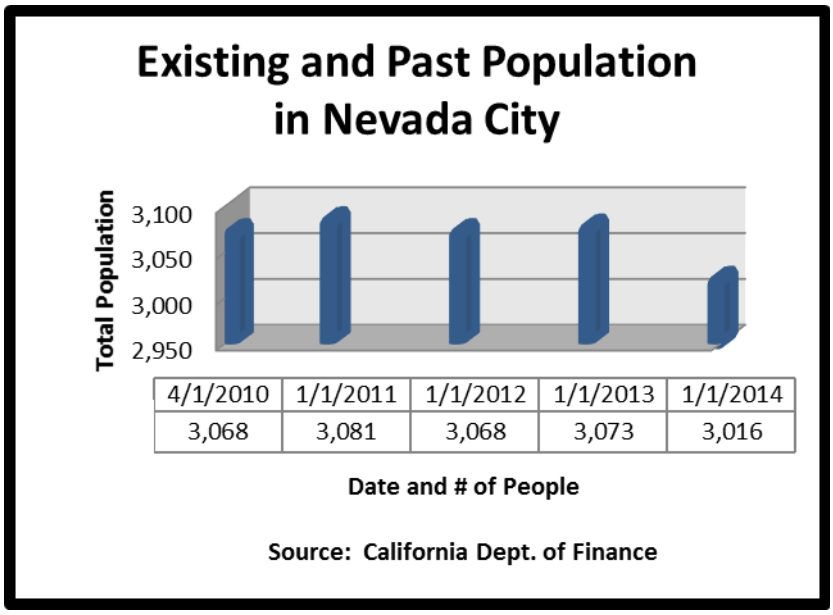
To some extent, population growth in the City is dependent upon land use, general plan designations, and zoning on properties. The General Plan for City of Nevada City was adopted March 24th, 1986. On October 8, 2008, LAFCo approved the Sphere of Influence Map for the City. A new Housing Element 2014-2019 was adopted January, 2014. The City's General Plan is based upon four principles: 1) preserve the sense of wooded enclosure; 2) enhance the historic core; 3) reinforce existing commercial concentrations; and 4) create opportunities for employment and revenue. The General Plan describes constraints that could affect future expansion of the sewer system as it was perceived back in 1986. The City's General Plan has policies that discourage urban density beyond the SOI boundary and that

[12] Nevada City. Draft Housing Element 2014 – 2019. www.nevadacityca.gov/content/housing-element: 1-2.

[13] State of California, Department of Finance, *E-4 Population Estimates for Cities, Counties, and the State, 2011-2014, with 2010 Census Benchmark*. Sacramento, California, May 2014. www.dof.ca.gov/research/demographic/reports/estimates.

[14] Nevada City Taylor/Falconi. Response to Request for Information and Interview. June 4, 2014.

encourage urban infill within the City's existing boundaries.[15] Nevada City currently has no formal proposals for amendments to the General Plan that would potentially affect wastewater services.



Since the previous MSR was published in 2004, there have not been any new subdivisions, other residential projects, or new commercial projects built within the City boundaries or SOI. The Nevada City Co-housing project located on Redbud Way (off upper Broad Street) is the most recent large project built within the City and it was constructed prior to 2004. Additionally, the City recently purchased Sugar Loaf Mountain for open space purposes, and this site has no plans for sewer connections and is outside of the current City boundary.

New infill development within the City's existing urban pattern has some potential to add a few new residential and commercial associated wastewater customers. For example, there are few vacant lots located along Chief Kelly Drive and American Hill Road that could accommodate single-family homes or low-medium density planned developments. A complete inventory of vacant parcels that can accommodate infill residential development is provided in the City's new Housing Element (2014).[16] The Gold Flat area was studied for transportation planning purposes in 2008. This Gold Flat Corridor Study projected future neighborhood growth of approximately 2 percent, including a potential new 78-room hotel.[17] New population growth could also result from the probable future City annexations described above in Section 6.3.

There are a few properties inside City boundaries that continue to use private septic systems. If these septic systems fail, these properties could potentially be added to the City's wastewater system. For those properties located within the sphere of influence, but outside City boundaries, the City may consider their request for annexation if their septic system fails and if they are contiguous to existing

[15] Nevada City. 1986. *General Plan 1980 – 2000*. Nevada City, California. www.nevadacityca.gov/sites.
[16] Nevada City. *Draft Housing Element 2014 – 2019*: 4-8 to 4-22. www.nevadacityca.gov/content/housing-element.
[17] Nevada City, *Gold Flat Road Corridor Study*, 2008: 8-10. www.nctc.ca.gov/documents.

City service per the City's policies on new connections. Although annexation into the City prior to provision of City sewer service is preferred, the City does sometimes allow connection to the sewer prior to formal annexation. This may trigger an out-of-agency service approval from Nevada LAFCo, depending on the timing of the annexation. LAFCo requires that an application for annexation be filed at the same time a request for out-of-area-service is filed. Properties to be considered for future annexation must be contiguous with the City boundary.

The California Department of Finance makes population projections at the County level. Projecting future population growth for a small city such as Nevada City is problematic due to a variety of unknown factors associated with the annexation rate. Projections of future population have not been published by Nevada City or other local agencies. The 2008 Update of the City's SOI assumed a 0.52 percent annual growth rate and this rate proved to be too high.[18] The City's 2014 Housing Element estimated population for the year 2019 at 3,124 persons. Using this value, the projected average annual growth rate is caclulated at 0.0089 percent (less than one percent) as shown in Table 6-1, below.

Table 6-1: Projected Population Growth (2014–2030)

	2014	2015	2020	2025	2030
City of Nevada City	3,016	3,043	3,152	3,295	3,445
Assumes an annual growth rate of 0.0089 percent within the City.					

The slower rate of projected growth is due to:

- remaining slow economic growth and development as an after effect of the U.S. recession from December 2007 through June 2009;
- hilly terrain which is more expensive to develop and which surrounds the City; and
- General Plan policies to protect the environment established by City leaders and residents and a tendency to proceed more cautiously with new developments.

Disadvantaged Unincorporated Communities

As described in Chapter 3, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Nevada City area. No DUCs have been identified within Nevada City, its SOI, or adjacent areas. The U.S. Census 2010 found the median household income (MHI) in the City was $55,192.[19] This is higher than the DUC threshold MHI of less than $48,706 (80 percent of the statewide MHI).

[18] Nevada City, Nevada City Sphere of Influence Plan Update, October 2008. www.mynevadacounty.com/nc/lafco/docs.
[19] Nevada City. Draft Housing Element 2014 – 2019. Nevada City, 2014. www.nevadacityca.gov/content/housing-element.

6.7 WASTEWATER SERVICES

Service Overview

Primary services provided by the City for the wastewater system are collection, treatment, disposal, and maintenance. Nevada City currently has a total of 1,380 connections to its sewer system, as shown in Table 6-2 below. One-third of the connections serve commercial/institutional users. The largest institutional/business users of the system include the local elementary and middle schools, County jail, and the U.S. Forest service.

Table 6-2: Number of Sewer Connections in Nevada City

Type of Sewer Connection	Number of Connections in 2014
#Connections for businesses & institutions	460
#Connections for dwelling units	920
Total Number of Sewer Connections	1,380

The 2004 MSR noted that meeting current and future regulatory requirements and service demands will continue to be a concern of the City of Nevada City. However, as of June 2012, the City has a permit (Order No. R5-2012-0033) from the Central Valley Regional Water Quality Control Board and is in full compliance. When the permit expires on June 1, 2017, the City will renew the permit. The City has indicated that it expects to remain in full compliance with local, state, and federal regulations for the next several years.

Collection System

Clarifying Baffles

Because some of the City sewer lines were built many decades ago, they are sometimes located on private property or in Deer Creek. In these instances, the City may either own the right-of-way, or have a prescriptive easement or an access easement to access the sewer lines. Private lateral lines connect a house to the City main line. Assigning responsibility to the appropriate private property owner for the privately owned lateral lines can be challenging in those instances where several laterals join together before joining the main line.[20]

The City is actively working to install a backflow prevention device/valve in all buildings. This will prevent city sewage from backing-up and spilling into buildings. Ultimately, this will reduce damage claims that the City is asked to pay. The installation of the backflow devise/valve is occurring incrementally and when homes are sold a "flag" appears on the title company paperwork. The homeowner (seller or buyer) pays for the materials and labor to install the backflow device/valve. The City does not charge for the permit or inspection of the installation for the backflow preventer.[21]

There are several measures of integrity for a wastewater collection system, including peaking factors, efforts to address infiltration and inflow (I/I), and inspection practices. The Public Works Department aims to prepare a capital improvement plan which will consider these factors. Wastewater flow from connections can be estimated based on use of treated municipal (fresh) water supplied to various land-uses as measured with water meters. The City's water conservation program (low flow toilet rebates, leak detection pills, etc.) and the drought have resulted in lower per capita water use and therefore lower per capita wastewater generation[22].

Treatment System

The City's WWTP was designed to accommodate 0.69 million gallons per day (MGD) average dry weather flow and 1.60 MGD maximum wet weather flow. The City owns the WWTP site. The City's sewer lines do not measure flow. However, sewage flow can be estimated based on use of treated municipal (fresh) water supplied to various land-uses as measured with water meters.

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[20] Nevada City Taylor/Falconi. Response to Request for Information and Interview. June 4, 2014.
[21] Ibid.
[22] Nevada City Taylor/Falconi. Personal communication. January 14, 2015.

The Nevada City WWTP treats sewage to a tertiary level using physical and chemical treatment to remove bacteria and byproducts that occurs prior to discharge. This is achieved by using a continuous flow activated sludge system. The treatment starts with a screening process that removes inorganics and grit. Lime is then added to achieve optimal pH values to facilitate the nitrification/denitrification activated sludge process. Effluent is then sent to secondary clarification and filtration (cloth disc tertiary filters and sand filters operated in series or in parallel). The wastewater is then disinfected using chlorine. The wastewater is de-chlorinated with sulfur dioxide to protect aquatic life from chlorine toxicity prior to discharge of effluent to Deer Creek. The biololids are de-watered in a filter press and then placed in a truck for hauling to a landfill.[23]

Disposal System

The City's WWTP discharges an approximate average of 470,000 gallons per day (gpd) of treated effluent into Deer Creek on a year-round basis.[24] A discharge permit from the Central Valley Regional Water Quality Control Board (RWQCB) was most recently issued on June of 2012, as Order No. R5-2012-0033. This permit is part of the National Pollutant Discharge Elimination System (NPDES) and it places limitations on specific constituents of effluent entering Deer Creek including biochemical oxygen demand, total suspended solids, pH, ammonia, dichlorobromomethane, coliform, residual chlorine, and zinc.[25] Discharge permits are reviewed every five years by the Central Valley RWQCB and at the time of next renewal (2017), the Board may require more stringent effluent limitations to be consistent with regulations in place at that time. These more stringent effluent limitations may require plant upgrades to achieve compliance. In addition to the City's monitoring that is required by the discharge permit, a non-profit group, the Sierra Streams Institute (SSI), monitors water quality in Deer Creek near the WWTP discharge point. Data analysis from this monitoring suggests that specific conductivity, nitrate, and phosphate ions generally increase near the WWTP. SSI feels that their monitoring program could be expanded to study

[23] Central Valley RWQCB.
[24] Central Valley RWQCB, 2012 permit. See also Table 6-3.
[25] Ibid.

ammonia, nitrite, and other ionic constituents present in the effluent (e.g., chlorine) and this type of monitoring may provide data upon which to evaluate the effectiveness of any future wastewater treatment plant upgrades.[26]

During the mid-1990s the WWTP experienced permit compliance difficulties with the occasional spill into Deer Creek. Since then, the City has completed corrective work and the City is now in full compliance with its permits.[27] Additionally, in 2002 Nevada City was subject to a Notice of Violation from the Central Valley RWQCB due to the lack of a certified laboratory to perform chemical and biological analyses.[28] Today, the City contracts with Cranmer Labs, a certified laboratory, for this analysis. The City aims to maintain high water quality, consistent with its permit and this is important because the Nevada Irrigation District (NID) uses the water in Deer Creek, downstream. Some of Deer Creek's water is diverted into NID's Newtown Canal and the Tunnel Canal. Any water remaining in Deer Creek flows into Lake Wildwood.[29] Given these diversions, most of Nevada City's WWTP effluent is "recycled" to some extent. Due to the presence of downstream water users, protecting water quality in Deer Creek may continue to be a priority with state regulators.

6.8: WASTEWATER INFRASTRUCTURE AND PUBLIC FACILITIES

Collection Systems

The City's first sewer line was originally constructed in 1895[30] and was likely constructed of clay.[31] Today, the collection infrastructure includes four lift stations (private), 20 miles of trunk lines, one outflow line, and approximately six flow meters.[32] Additionally there are many miles of sewer collection lateral lines.

Treatment Systems

Wastewater is treated at the City's wastewater treatment plant which was originally constructed along the Deer Creek Canyon, off Jordan Street in 1952.[33] Plant infrastructure was upgraded in 1984, 1993, 1997, and 2006. The 2006 expansion and upgrade increased treatment efficiency and converted the process to continuous flow activated sludge. This upgrade successfully improved the water quality of effluent because although there are infrequent detects of some volatile organic compounds (including

[26] Friends of Deer Creek et. al, *The Deer Creek Watershed Restoration Plan*, March 2011. www.sierrastreams.org/documents/DeerCreekRestorationPlan2011.pdf
[27] Nevada City Taylor/Falconi. Response to Request for Information and Interview. June 4, 2014.
[28] Nevada City, Response to Nevada County Grand Jury 2003-2004 Report on Nevada City Wastewater Treatment Inquiry
[29] Nevada Irrigation District). Raw Water Master Plan, Phase II, Chapter 3. nidwater.com/wp-content/uploads/2013/03/RawWaterMasterPlan.pdf.
[30] Nevada LAFCO, City of Nevada City Sphere of Influence Plan Update. 2008.
[31] Nevada City Taylor/Falconi. Response to Request for Information and Interview. June 4, 2014.
[32] Nevada LAFCO, City of Nevada City Sphere of Influence Plan Update. 2008.
[33] Ibid.

toluene, xylenes, and carbon tetrachloride) in the treated discharge, all are below the permit discharge limits.[34] The treatment system is described in section 6.7, above.

Specialized equipment at the plant includes an equalization tank, preliminary treatment facilities, a conventional activated sludge process, three single-media tertiary filters, and disinfection and dechlorination facilities. Chlorine is an important chemical used in the treatment process, but the City recognizes that it is corrosive to metal and other substances and so the City takes the appropriate precautions when handling it. The most recent inspection of the WWTP by Central Valley RWQCB occurred 2014, and the WWTP was in compliance.[35]

Disposal

There have been no upgrades or changes in disposal of effluent and biosolids since the 2004 MSR. Following treatment, effluent is directed to Deer Creek, a tributary of the Yuba River, within the Sacramento River watershed. This discharge to the Creek is regulated by the Central Valley RWQCB under Discharger Order R5-2012-0033. As the discharge travels downhill to the Creek, it runs through a small hydropower unit that generates some of the electricity used to run the WWTP. This hydropower unit serves to demonstrate a green energy process.

As part of their permit from the Central Valley RWQCB, the City has several monitoring stations above and below the discharge point. The permit specifies monitoring frequency and constituents. Reports that describe the results of monitoring and data analysis are provided on a regular basis throughout the year and an Annual Operations Report is submitted every year to the Central Valley RWQCB.[36] Biosolids go through a sludge pressing process and are then loaded into a truck for transport. Once a truck is filled, the sludge waste is hauled off by a local contractor (Robinson Enterprises) and taken to a Class II waste facility. The City's permit with the CVRWQCB specifies that the disposal site is Ostrom Road Landfill near Beale Air Force Base in unincorporated Yuba County.

[34] PCWA and NID. 2007. Yuba/Bear River Watershed Sanitary Survey. www.pcwa.net/files/docs/enviro/YubaBear-River-Watershed-Sanitary-Survey-Second-Update-Final-Report.pdf

[35] Nevada City Taylor/Falconi. Response to Request for Information and Interview. June 4, 2014.

[36] Central Valley RWQCB, "Notice of Adoption Waste Discharge Requirements Order R5-2012-0033 for City of Nevada City, Wastewater Treatment Plant, Nevada County ." June 19, 2012.

Summary of Wastewater Capacity

Table 6-3: Summary of WWTP Capacity and Volume		
Permitted Treatment Plant Capacity		**0.69** MGD average dry weather flow
Annual average dry weather flow volume	2009	0.38 MGD
	2010	0.45 MGD
	2011	0.47 MGD
Source: CVRWQCB, 2012 permit		

Although Nevada City does not formally project future demand for wastewater services or infrastructure, the City Engineer does not expect a need for expanded capacity in the near-term future. This is because demand for services is not expected to increase significantly in the near-term.[37] This is consistent with the population projections for the City shown above in Section 6.6. However, the lack of a formal analysis of projected future demand along with expectations for limited future population growth has resulted in a situation where it is difficult to determine the capacity in the wastewater infrastructure that is reserved or committed for planned or proposed development.

Adequacy and Challenges in Provision of Wastewater Service and Infrastructure

The biggest challenge the City has identified regarding the provision of wastewater service is the aging sewer pipelines which sometimes result in higher than normal inflow and infiltration and the occasional leak. The Public Works staff visually identify and repair these pipes to minimize the inflow and infiltration in a timely manner. The 2004 MSR similarly identified infrastructure deficiencies with the collection system, associated with the age of the sewer lines. The City continually works to correct these deficiencies and in the recent past has budgeted approximately $100,000 a year for maintenance and repairs. For example, in March 2014 the City Council approved a $21,700 contract to replace the sewer line at Pioneer Park. The City will be installing a larger diameter pipe, which should help alleviate clogging. Another part of annual maintenance is annual cleaning of sewer lines before they plug up using both large and small machines called Vactrons. This is a high pressure cleaning head (water jetter) with 4,000 psi pushed through the pipe and a wet vacuum that sucks out the debris.

The City's ability to supply and/or deliver wastewater service to customers is also influenced by its ability to purchase specific capital improvements and these are described in Section 6.9 (page 6-17), below.

[37] Nevada City Taylor/Falconi. Response to Request for Information and Interview. June 4, 2014.

The Director of Public Works and staff are also working to solve various geographic service issues including:

1. Provision of City sewer to the Wet Hill neighborhood (Wet Hill is in the Sphere of Influence).
2. Unanticipated septic failures on other parcels within the City's Sphere of Influence may potentially result in applications for sewer service.
3. Providing sewer to the approximately 25 parcels located inside the City limits but remaining on individual septic systems including:
    a. Grove Street: a few parcels near the creek remain on septic;
    b. Brock Street: a few parcels at the end of the street remain on septic;
    c. Railroad Avenue: several homes would benefit from receiving sewer service; and
    d. Clay Street: one parcel may need to convert from septic to City sewer.

Opportunities for Shared Facilities

The 2004 MSR recommended that the City of Nevada City examine future opportunities to share facilities with other wastewater providers in western Nevada County. The concepts of regionalization and sharing WWTP facilities has been studied by the City but not embraced, partially because the geographic location of the City's WWTP within a canyon along Deer Creek makes it unattractive to other potential users (e.g., Nevada County and/or City of Grass Valley). The City's collection facilities (sewer lines and associated infrastructure) are well maintained, but aged. The collection facilities generally do not extend beyond the City limits (except for a few isolated cases) and are not attracting other potential users (e.g., Nevada County and/or City of Grass Valley). Additionally, the City believes autonomy is important and would need to study future consolidation proposals carefully.[38]

The City does collaborate with other agencies and organizations in other ways, including sludge handling and laboratory services. Biosolids from the WWTP are hauled off by a local contractor (Robinson Enterprises) and taken to a Class II facility in unincorporated Yuba County. The Nevada County Sanitation District also utilizes this same contractor and disposal location. In a sense, the City and the County have created a market for biosolid hauling/disposal, and private contractors have filled this market niche. Laboratory testing is done by a local contracted lab called Cranmer Engineering, Inc., an Environmental Laboratory Accreditation Program (ELAP) certified Water Analysis Laboratory. The City indicates that having a City-owned certified lab is not worth the expense due to the limited number of samples for analysis.[39] The City contracts with local service providers and believes this process to be cost effective and suitable for their need of timely service.

[38] Nevada City, Response to Nevada County Grand Jury 2003-2004 Report on Nevada City Wastewater Treatment Inquiry.
[39] Nevada City Taylor/Falconi. Response to Request for Information and Interview. June 4, 2014.

The City's wastewater staff participates in a spill notification program with Nevada County Environmental Health by giving direct notification in the event of a wastewater spill from the collection system or wastewater treatment plant.

Any future consideration of sharing facilities would require a plan to assess potential partnerships and could ultimately require an investment in infrastructure to reconfigure it in a manner more conducive to sharing. It is recommended that the City continue to be open to new opportunities to share facilities and to assess these ideas as they arise.

In summary, although opportunities to share wastewater collection, treatment, and disposal facilities are limited for Nevada City, the City generally collaborates with its neighboring government agencies as follows:

- The City shares equipment for police, fire, and public works with the City of Grass Valley;
- The City cooperates with the Nevada Irrigation District for the provision of municipal water supply;
- The City contracts with Nevada County for provision of selected services including building inspection and geographic information system mapping; and
- The City utilizes mutual aid agreements for the provision of emergency services among itself, Nevada County, and the City of Grass Valley.

6.9: FINANCING

Nevada City has an adopted management and budget policy addressing budget preparation, fixed asset accounting, investment of funds, and expense authorization. Budgets are adopted in public meetings on an annual basis. The fiscal year begins on July 1 and ends on June 30. Both budgets and audits are available to the public via the City's website. The most recent independent auditor's report was prepared for Fiscal Year (FY) 2012/2013 and dated December 27, 2013, and was attached to the City's Financial Statements. The audit found that there were no issues of noncompliance with financial regulations that could have an effect on the financial statement.[40]

In the 2004, LAFCo's Final MSR for Wastewater Service Agencies found that one challenge the City faced was charging fees commensurate with services.[41] Since then, the City has resolved this issue by refining the Wastewater Enterprise Fund to ensure that each parcel that received sewer service is billed for this service. More recently, the City's strategic planning session generated action items to complete an AB

[40] Smith & Newall, *Financial Statements Together With Independent Auditor's Report for the Year Ended June 30, 2013*.

[41] Nevada LAFCO. *Final Municipal Service Review Report Nevada County Western Region Wastewater Service Agencies*, 2004. www.mynevadacounty.com/nc/lafco/docs.

1600 Fee Study related to the current citywide Capital Improvement Plan (CIP) and evaluate the wastewater billing system and present to the City Council for action restructuring options.[42]

Revenues and Expenses

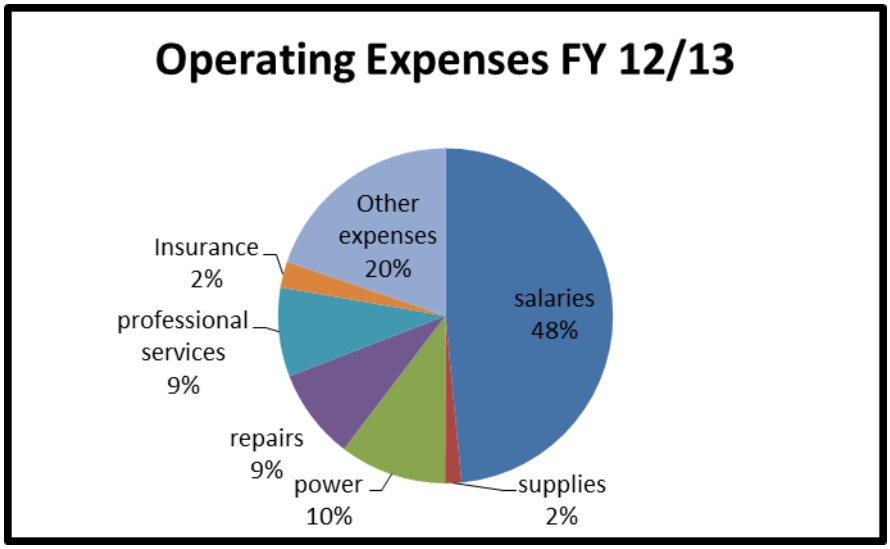
This section describes sources of revenues and expenses associated with the City's wastewater system. The City receives revenue from several sources including sales tax, property tax, grants and other sources. Most of these revenues are utilized in the City's general fund. For wastewater services, the City has established an enterprise fund where the fees collected as customers pay their sewer bills can be accounted for separately. This ensures that charges for services are used to pay for the costs of providing wastewater services. Following is a summary of the last three fiscal years' annual budgets for the Sewer Enterprise Fund.

Table 6-4: Nevada City Summary of Revenues
Wastewater Enterprise Fund FY11/12 to FY13/14

Revenues	2011/2012 Per audited financial statement[43]	2012/2013 Per audited financial statement[44]	2013/2014 Per adopted budget[45]
Customer Service Fees	$1,334,363	$1,570,708	Not available
Other Operating Revenues	0	1,164	Not available
Mitigation fees collected (non-operating)	0	3,008	Not available
Interest Income (non-operating)	4,571	5,097	Not available
Total	$1,338,934	$1,579,977	$1,390,000

[42] Nevada City. *Strategic Objectives*, 2013. www.nevadacityca.gov/sites.
[43] Smith & Newall, Certified Public Accountants. Financial Statements with Independent Audit. November 2012: 19.
[44] Smith & Newall, Certified Public Accountants. Financial Statements with Independent Audit. December 2013: 20.
[45] Nevada City. Budget. FY 2013/2014: 7.

As shown in Table 6-4 above, the primary source of revenue for the sewer enterprise fund are the charges to customers for sewer service. Revenues increased by $241,043 (18%) between FY 2011/2012 to FY 2012/2013 due to additional "other operating revenues" and "mitigation fees" from the previous fiscal year associated with income for treating surface water runoff from the County landfill, which isn't a fixed revenue source and varies from fiscal year to fiscal year. The City's budget contains less information than the audited financial statements and therefore it is difficult to compare revenue subcategories in the FY 2013/2014.



Expenses for the sewer enterprise fund include administrative expenses, depreciation of capital assets, and the costs of providing sewer collection, treatment, and disposal services. Expenses declined by $30,212 (2%) between FY 2011/2012 and FY 2012/2013. The decrease in expenses from FY 2011/2012 to FY 2012/2014 is due to a reduction in operational costs. The accompanying chart that shows the details associated with operating expenses in FY 2012/2013. The City's annual budget for FY 2013/2014 contains less information than the audited financial statement and therefore it is difficult to compare expense subcategories for FY 2013/2014. The overall predicted expense in FY13/14 was $1,250,000, slightly less than in FY12/13.

Table 6-5: Nevada City Summary of Expenses Wastewater Enterprise Fund FY11/12 to FY13/14			
Expenses	2011/2012 Per audited financial statement[43]	2012/2013 Per audited financial statement [44]	2013/2014 Per adopted budget [45]
Operating Expenses (power, insurance, salaries)	$698,191	$666,943 (see chart below for details)	$913,000
Interest Paid on Debt	184,015	182,097	Not available
Capital Project Transfers	66,181	66,181	Not available
Depreciation	398,599	401,553	Not available
Collection/Capital Outlay	Not available	Not available	337,000
Total	$1,346,986	$1,316,754	$1,250,000

Comparing revenues to expenses provides an analysis of the overall fiscal health of the enterprise fund and serves to assess the financial ability of the City to provide wastewater services. In FY 2012/2013 revenues exceeded expenses by $263,203.[46] This indicates that under current levels of maintenance and capital improvements, the customer service fees cover existing costs. However, in the future, a higher level of maintenance and capital improvements may be necessary, given the age and condition of the infrastructure. In October 2014 the City staff and consultants presented a Wastewater Rate Restructuring Methodology and Study to the City Council. This study contained an analysis projecting that wastewater expenses would increase by FY 2016/2017.[47]

Asset Maintenance and Replacement

The City owns the wastewater treatment plant and associated sewage collection and disposal infrastructure, and these capital assets are depreciated over their estimated useful lives. Asset maintenance is a significant issue for the City, given the age of the collection pipes. The City regularly budgets $100,000 for maintenance projects that are implemented on an as-needed basis. The City does not pre-program specific maintanence projects in advance. Maintenance of the system is described in more detail in Section 6.8 above.

[46] Smith & Newall, Financial Statements Together With Independent Auditor's Report for the Year Ended June 30, 2013
[47] Nevada City. Report to City Council. Wastewater Rate Restructuring Methodology and Study. October 22, 2014.

Capital Improvements

The City has a simple list of capital improvement projects, and five wastewater projects are listed.[48] Additionally, the Public Works staff provided a few additional capital improvement projects and the joint list is shown below:

- new filters;
- upgrades to the SCADA system (supervisory control and data acquisition) which allows centralized monitoring of the WWTP (and also the treated municipal water plant);
- update computer data tracking system;
- upgrade of pipes in Grove Street/Deer Creek Line ($105,000 estimate);
- new sewer main on South Pine Street ($280,000 estimate);
- replace old manhole covers ($75,000 estimate);
- and repairs in lower part of town along Woodpecker Lane ($15,000 estimate);
- Camera and fence for security ($35,000 estimate);
- Potable water re-plumbing ($50,000 estimate); and
- Nimrod Street realignment ($85,000)

The City's Wastewater Enterprise fund has approximately $1.8 million dollars in reserve, which is more than sufficient to complete the projects listed above. However, given the age of the wastewater infrastructure, it seems that additional projects would be needed both in the near-term and the long-term. Additionally, it is difficult to determine whether or not existing rates are sufficient to pay for future operational improvements without a formal capital improvement plan. The City has identified the need to develop a specific and comprehensive wastewater/water capital improvement plan as a goal for the year 2015.

Long-term Liabilities and Debts

Upgrading the WWTP and associated facilities represents a significant capital improvement. To finance these capital expenditures, the City did encumber loans from a variety of sources. The City is currently paying off these long term debts. The City has several loans outstanding whose funds were used to upgrade the wastewater treatment plant including the following:

- Citizens Bank USDA Refunding Loan, dated June 1, 2008, payable in semi-annual installments of $2,369 to $77,556 with an interest rate of 4.1 percent and maturity of August 1, 2025. This loan was used to refund prior loans used to finance the City's wastewater treatment and disposal system. Total $732,676.

[48] Nevada City. Capital Improvement Plan 2014-2019, June 2014.

- PG&E Wastewater Retrofit Loan, dated February 13, 2013, payable in monthly installments of $528.64, with an interest rate of 0.0 percent and maturity of April 14, 2015. This loan was used to finance retrofit improvements to the wastewater system. Total $11,649.
- Certificates of Participation: 2005 Wastewater Certificates of Participation, dated October 1, 2005, payable in annual principal installments of $16,000 to $48,000, with an interest rate of 4.25 percent and maturity of July 15, 2045. These Certificates of Participation were used to finance improvements to the City's wastewater collection, treatment and disposal system that began in fiscal year 2004/2005.[49] Total $2,019,000. In FY 2012/2013, the City had a decrease in debt of $241,141 associated with principal payments on this loan.
- Certificates of Participation: (Continued) 2007 Certificates of Participation, dated March 1, 2007, payable in annual principal installments of $19,000 to $90,000, with an interest rate of 4.125 percent and maturity of July 15, 2046. These Certificates of Participation were used finance improvements to the City's wastewater collection, treatment and disposal facilities. Total $1,695,000 and $3,714,000.[50] The City made scheduled principal payments on the loan during FYs 2011/2012 and 2012/2013.
- USDA Sewer Bonds Series A and B and USDA Sewer Fund Promissory note were refinanced in fiscal year 2007/2008, totaling $1,016,542 for a reduced interest rate of 4.1 percent. The City made scheduled principal payments on the loan during fiscal year 2012/2013.[51]

Cost Avoidance

This section highlights cost avoidance practices given necessary service requirements and expectations. Ideally, proposed methods to reduce costs would not adversely affect service levels. In general, sewer systems have a fixed cost associated with operations and maintenance and has a variable cost related to flows. As City staff continues to provide wastewater services to residents, they must deal with regulatory and physical constraints which may limit the ability of Nevada City to pursue cost avoidance practices. Given these constraints, the City pursues an array of cost avoidance techniques that each contributes incrementally towards keeping costs at a reasonable level.

The 2004 MSR recommended a cost avoidance activity for Nevada City: regionalizing wastewater facilities. The City studied this recommendation informally and they found that although the City of Lincoln's regional WWTP is a tertiary treatment facility, with readily available capacity, and has all the needed permits, its geographic distance (40+ miles) and the variable terrain including several large hills, between Lincoln and Nevada City makes this proposal infeasible.[52]

[49] During the fiscal year 2012-2013 the City paid off debt service associated with the City Hall remodel of 2002. The City also paid off the short-term funds transfer of $678,000 from Nevada County in 2013.
[50] Smith & Newall, Financial Statements Together With Independent Auditor's Report for the Year Ended June 30, 2013
[51] Smith & Newall, Certified Public Accountants. Financial Statements with Independent Audit. December 2013. Page 38.
[52] Nevada City Taylor/Falconi. Response to Request for Information and Interview. June 4, 2014.

Administration is an area in which the City seeks to reduce costs. Nevada City's budgeting processes serves as one means to avoid unnecessary costs. Additionally, the City's purchasing policies provide a review of significant purchases to ensure they are made efficiently. The City minimizes its insurance costs via participation in a joint powers agreement under the auspices of the Public Agency Risk Sharing Authority of California (PARSAC). PARSAC provides cost effective pooled joint-protection coverage to member entities by maintaining a financially stable risk sharing pool. The type of insurance provided includes auto and general liability coverage, plus workers compensation and errors and omissions coverage. The City manages costs of health insurance and retirement for City employees by participation in the public employee retirement system which administers benefits on behalf of more than 3,000 public employers. The City does not currently participate in any joint agreements directly associated with wastewater services. No other administrative method to efficiently provide wastewater services to local residents has been identified at this time. The City has not identified areas currently served that might be served more efficiently by another agency.[53]

The City and its partner, the Cosumnes American Bear Yuba (CABY) watershed group, recently won a grant from the California Department of Water Resources to improve its infrastructure for the provision of municipal (fresh) water. Additionally, in the past, the City's sewer upgrades were financed with a combination of grants and low-interest loans from state agencies. Nevada City recognizes the opportunity to work with Grass Valley and Nevada County on future grant applications and administration of grant-funded projects. The City contracts with a professional grant writer to aid in this endeavor.[54]

The Public Works Department has taken several actions in the last five years to save money and lower expenses while maintaining wastewater services. For example, the City conducts yearly maintenance on sewer lines with the Vacktron to clean/blow out debris. Public Works staff utilizes a map that color codes the age of sewer pipe lines to guide replacement of the oldest lines in the system.[55]

Rate Restructuring

Existing sewer rates are established via City Ordinance 2007-02 and 2005-05 using a fixed fee formula as shown in Table 6-6 below. Sewer bills are sent out bi-monthly and payments may be made with cash, check or credit card.

[53] Nevada City Taylor/Falconi. Response to Request for Information and Interview. June 4, 2014.
[54] Ibid.
[55] Ibid.

Table 6-6: Existing Sewer Rates City of Nevada City	
Type of Customer	Monthly Rate
Residential	$47 single family flat rate
Multi-family	$78.50 multi-family flat rate
Commercial	$68.50 commercial flat rate

*Source: Nevada City. Report to City Council. Wastewater Rate Restructuring Methodology and Study. October 22, 2014.

The sewer fees were updated in 2007. Given current revenues and costs, it is not clear how the City would pay for unanticipated repairs and operational improvements to the sewer system. The City has noted other challenges with the existing rate structure as follows:

- Current rate schedule is complex and difficult to administer;
- Money is not being budgeted for capital improvements; and
- Reliable water meter data is now available, but is not being used to calculate sewer rates.[56]

At their October 22, 2014, and November 12, 2014 meetings, the City Council considered a proposal to update wastewater fees by combining the fixed fee and flow charges. Staff is currently in the process of preparing a draft ordinance to implement the new rates for the Council's consideration in 2015.[57] The proposal for updating the sewer rate structure is to utilize a combination of a fixed fee and a flow usage charge. The flow charge component would recognize that those who produce less wastewater should pay less. The proposal aims to have low flow producers pay about the same or less compared to current rates. Higher flow producers would likely pay more than current rates. A tradeoff of structuring rates using a partial flow charge methodology is revenue variability due to customer usage habits, building occupancy, and changes in use over time. Revenue variability makes it a challenge to plan for unanticipated repairs and operational improvements. To overcome this tradeoff, the City's Rate and Methodology Study recommended that two reserve accounts be established. The first reserve account would be a Rate Stabilization Reserve in the amount of 10 percent or $135,000. The second account would be an Operational Reserve established in the amount of 20 percent or $270,000. The Study recommends that the Wastewater Enterprise Fund be used to fund both reserve accounts.[58]

Ideally, future sewer rates would be sufficient to provide for needed capital improvements to the sewer system. The City's October 2014 Wastewater Rate Restructuring Methodology and Study recommends

[56] Ibid
[57] Nevada City. Report to City Council. Wastewater Rate Restructuring Methodology and Study. October 22, 2014.
[58] Ibid.

that a qualified consultant be retained to prepare a 10-year capital improvement needs assessment for the sewer system including, cost of improvements/repairs and the timing of work tasks.[59]

6.10: DETERMINATIONS

Growth and Population Projections

1. The current (year 2014) population of Nevada City is 3,016 permanent residents, which represents a decline of 57 persons (1.8 percent) from the previous year.
2. Since the year 1990, the City's residential population has remained fairly stable, hovering around 3,000 persons.
3. In addition to the residential population, the City's infrastructure also supports a significant daytime worker population and an evening/weekend festival population.
4. Projections of future population in Nevada City were not readily available. This MSR calculates an average annual future growth rate of 0.0089 percent, consistent with the City's Housing Element. This provides a calculated estimate of future population level of 3,152 residents in the year 2020.

Disadvantaged Unincorporated Communities

5. The median household income (MHI) in the City in 2010 was $55,192. This is higher than the DUC threshold MHI of less than $48,706 (80 percent of the Statewide MHI).
6. No disadvantaged unincorporated communities have been identified within Nevada City, its SOI, or adjacent areas.

Present and Planned Capacity of Public Facilities

7. The City serves 1,380 sewer connections. One-third of the connections serve commercial/institutional users. The remaining two-thirds are associated with residences.
8. Parts of Nevada City's sewer faclities and infrastructure were installed in the mid-1800s. Accordingly, preventative maintenance and scheduled replacement of aging infrastructure is critical. For example, sewer lines used for collection within the City have a broad range of ages and sizes. Since some lateral and trunk lines are older and/or smaller, replacement infrastructure will be needed in the upcoming years.

[59] Ibid.

9. In 2006, Nevada City completed a comprehensive upgrade and expansion of its WWTP. The WWTP now has a permitted average dry weather capacity of 0.69 mgd. Current average dry weather flow ranges from 0.38 to 0.47 mgd, significantly lower than permitted capacity. The 2006 expansion and upgrade increased treatment efficiency and converted the process to continuous flow activated sludge.

10. The WWTP has sufficient capacity to serve its existing customers and new customers for the next ten years (through the year 2025). It is recommended that within the next ten years, the City conduct an analysis, with associated documentation, to consider the capacity of the WWTP in light of the City's annexation schedule, general plan projected buildout, and projected population. Alternatively, the City could consider improvement to its aging sewer infrastructure with the goal of greatly reducing the inflow and infiltration resulting in lower flow requirements at the WWTP.

11. The City is planning to prepare a sewer specific capital improvement plan which will prioritize needed infrastructure upgrades and replacements. These actions will help the City actively plan for and perform replacement and maintenance of its collection and treatment systems to stay current with state regulations and service needs.

Financial Ability of Agency to Provide Services

12. On an annual basis, the City adopts a comprehensive budget and receives an audited financial statement.

13. The Wastewater Enterprise Fund is managed efficiently. However, it is not clear whether current revenues and the current rate structure are sufficient to provide for necessary capital improvements to upgrade aging and/or undersized infrastructure. To address this issue, the City is preparing a Wastewater Rate Restructuring Methodology and Study to the City Council.

14. Within the next several years, the City plans to develop a sewer specific Capital Improvement Plan to prioritize infrastructure upgrades. It is recommended that this plan be considered in light of any rate restructuring proposal and other potential funding sources to ensure that the scope of the proposed projects is congruent with funding availability.

Opportunities for Shared Facilities

15. No opportunities for shared facilities were identified by staff or in the preparation of this MSR. Nevada City has a solid track record of working cooperatively with neighboring local agencies on other issues.

Accountability for Community Service Needs

16. Nevada City has a five-member City Council elected at large to staggered four-year terms of office. City Council meets in the downtown City Hall on a regular basis. City meetings (including the Council and the Planning Commission) are noticed according to the Brown Act and the meetings provide regular public comment opportunities.

17. The City has greatly improved its communications and transparency through the development of its website (www.nevadacityca.gov/). The website is one tool that the City uses to disseminate information and to encourage participation.

Any Other Matters Related to Service Delivery as Required by LAFCo Policy

18. There are no other aspects of wastewater service required to be addressed in this report by LAFCo policies that would affect delivery of services.

REFERENCES

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Chapter 7
KINGSBURY GREENS CSD

7.1 DISTRICT PROFILE

Type of District:	Community Services District
Principal Act:	Government Code Sections 61000-6193 et seq.
Functions/Services:	Sewage collection and treatment
District Area:	8 acres adjacent to Alta Sierra in Western Nevada County
Sphere of Influence:	Co-terminous with District boundaries
Population:	70 (Estimated by District)
Budget (FY 2013/2014):	$22,568
Main Office:	P.O. Box 1577, Grass Valley, CA 95945
Mailing Address:	Same
Phone No.:	(530) 477-5001
Fax No.:	(530) 477-5001
Web Site:	N/A
Contact Person:	Kathy Roberts, Secretary
Email:	kingsburygreens@gmail.com

Governing Body: Five-member appointed Board of Directors, 4-year terms[1]

Name	Position	Term Ends
Vacant	President and Secretary	12/5/2016
Lynda Lapp	Treasurer	12/4/2017
Mary Starr	Director	12/5/2016
Richard B. Wagner	Director	12/4/2017
Vacant	Director	12/5/2016

Meeting Schedule: Second Tuesday of each month, 5:00 p.m.
Meeting Location: 15460 Kingsbury Circle, Grass Valley 95949
Date of Formation: 1995

7.2 OVERVIEW OF DISTRICT

Type and Extent of Services

Kingsbury Greens Community Services District (CSD or District) is an independent special district that operates and maintains a small wastewater treatment facility consisting of an extended aeration package treatment plant with final disposal to a land-based community leach field. The CSD provides secondary sewage collection and treatment, as well as maintenance of related facilities and equipment, e.g., the District's package treatment plant and sewage collection system. Sludge is hauled to the City of Grass Valley's treatment plant for processing.

Kingsbury Greens CSD is a community services district formed under the provision of Government Code Sections 61000-61934 for the primary purpose of providing sewer service to 45 units in the Kingsbury Greens condominium complex, in Nevada County, California. The District maintains all 45 connections, and there are very few vacancies in the complex. Its operating budget for FY 2014-2015 is $24,550. The resolution approving the formation of the Kingsbury Greens CSD also authorizes the CSD to "perform the collection, treatment, and disposal of the [. . .] storm water of the district and its residents." However, the CSD does not provide storm water service.

Location and Size

The Kingsbury Greens CSD is located in western Nevada County, adjacent to the unincorporated community of Alta Sierra. It encompasses approximately 7.66 acres. The District's customer base is limited to the approximately 70 residential users residing in the 45-unit condominium complex. The closest socioeconomic center to the District is the City of Grass Valley, located approximately 3.5 miles to the north. Land uses in the vicinity are predominantly single-family residential in the Alta Sierra subdivision to the west, and rural residential to the east.

[1] Nevada County Board of Supervisors, Staff Report: One Appointment and Two Reappointments to the Kingsbury Greens Community Services District, November 12, 2013.

The CSD's package treatment plant is located onsite, and the district office is at 15460 Kingsbury Circle. See Figure 7-1 for a map of the district boundaries and service area, and Figure 7-2 for significant District features.

7.3 FORMATION AND BOUNDARY

Boundary History

The Kingsbury Greens CSD package wastewater treatment plant was originally installed in 1978 to serve the Kingsbury Condominium project, a 45-unit complex north of Alta Sierra. In 1979, LAFCo approved annexation of the territory to the County Sanitation District, in order to comply with Central Valley Regional Water Quality Board requirements. In 1995, a group of Kingsbury residents applied to LAFCo for detachment from the County Sanitation District and formation of an independent Community Services District, in the belief that the CSD could provide service more economically. For several years, the CSD functioned adequately; however, in 2007, the CSD applied to LAFCo to dissolve the CSD and re-annex into the Sanitation District. The application cited difficulty in recruiting new members for the Board of Directors, the high cost of operation and administration, and the increasing complexity of administrative requirements for public agencies in general. That application was deemed incomplete as the Nevada County Sanitation District did not support the re-annexation proposal.[2] The sphere continues to be coterminous with the boundaries of the CSD itself, meaning that the sphere and district boundaries are the same.

Sphere of Influence

The sphere of influence approved for the District in 1995 was coterminous. In consideration of the District's 2007 application to dissolve and annex back into the County Sanitation District, a "zero" sphere of influence was recommended, though that recommendation was not implemented. A zero sphere adopted by LAFCo would signal the probable future dissolution of the CSD provided that an appropriate successor agency is identified.

Extra-territorial Services

The District does not provide public services to any customers outside the service area boundaries, nor are there any known plans to do so.

Areas of Interest

No other areas outside the District boundaries have been identified that require services from the District.

[2] Local Agency Formation Commission, Sphere of Influence Updates 2009: County Sanitation District No. 1, Kingsbury Greens Community Services District, approved June 18, 2009.

7.4 GOVERNMENT STRUCTURE AND ACCOUNTABILITY

Overview

The District is governed by a five-member Board of Directors, which is appointed by the Nevada County Board of Supervisors.

The current Board members and Manager are shown in the district profile, above. Directors must be registered voters residing within the Kingsbury Greens CSD boundaries, and may be renters or owners. Regularly scheduled meetings are held on the second Tuesday of each month at 5:00 p.m. Meetings are located at the District office, at 15460 Kingsbury Circle, Grass Valley, CA 95949.

In accordance with Government Code § 54954, all meetings are publicly posted on the bulletin board outside the District office 72 hours in advance of meetings. Meeting minutes are then sent electronically only to homeowners and renters who have requested the meeting notes. The District maintains an email list for delivery of meeting minutes. Agendas are not posted or sent. The District does not have a website.

The District does not have an attorney, nor is an attorney present at meetings to ensure compliance with the Brown Act (Government Code §§ 54950-54926), the conflict-of-interest regulations set forth in the Political Reform Act (Government Code § 81000 et seq.), and other applicable laws. However, there is no record of violations of any of the government code sections listed above.

The contact information for the Kingsbury Greens CSD is posted on the bulletin board outside the administrative office, along with complaint forms, which can be submitted directly to the office. District staff indicate, however, that very few complaints are received, and those they have received are typically related to sewage backing up within the residences due to tree roots impacting the sewage lines. The District reports that they have not received complaints about CSD operations, policies, meetings, or procedures, and does not track how many comments or complaints it receives on other issues, though the number is estimated to be only a few over the course of the year.[3]

The District has not adopted policies addressing budget preparation, fixed asset accounting, investment of funds, and expense authorization. Budgets are adopted in public meetings and are available to the public upon request. In 2004 the Nevada County Board of Supervisors passed a resolution authorizing Kingsbury Greens CSD to replace its annual audit with a biennial audit covering a two-year period.[4] The last independent auditor's report available during preparation of this report was dated August 31, 2012, and covered the fiscal years ending June 30, 2010 and 2011. The audit found that there were no issues of noncompliance with financial regulations that could have an effect on the financial statements.[5] More information of financial issues is presented in Section 7.9 below.

[3] Meeting Minutes, Nevada LAFCo 2014 MSR Update, Kingsbury Greens CSD, June 4, 2014.
[4] Nevada County Board of Supervisors, Agenda for a Regular Meetings of the Board of Supervisors, August 10, 2004.
[5] Jensen Smith, Independent Auditor's Report, Kingsbury Greens Community Services District Financial Statements: June 30, 2011 and 2010, August 31, 2012.

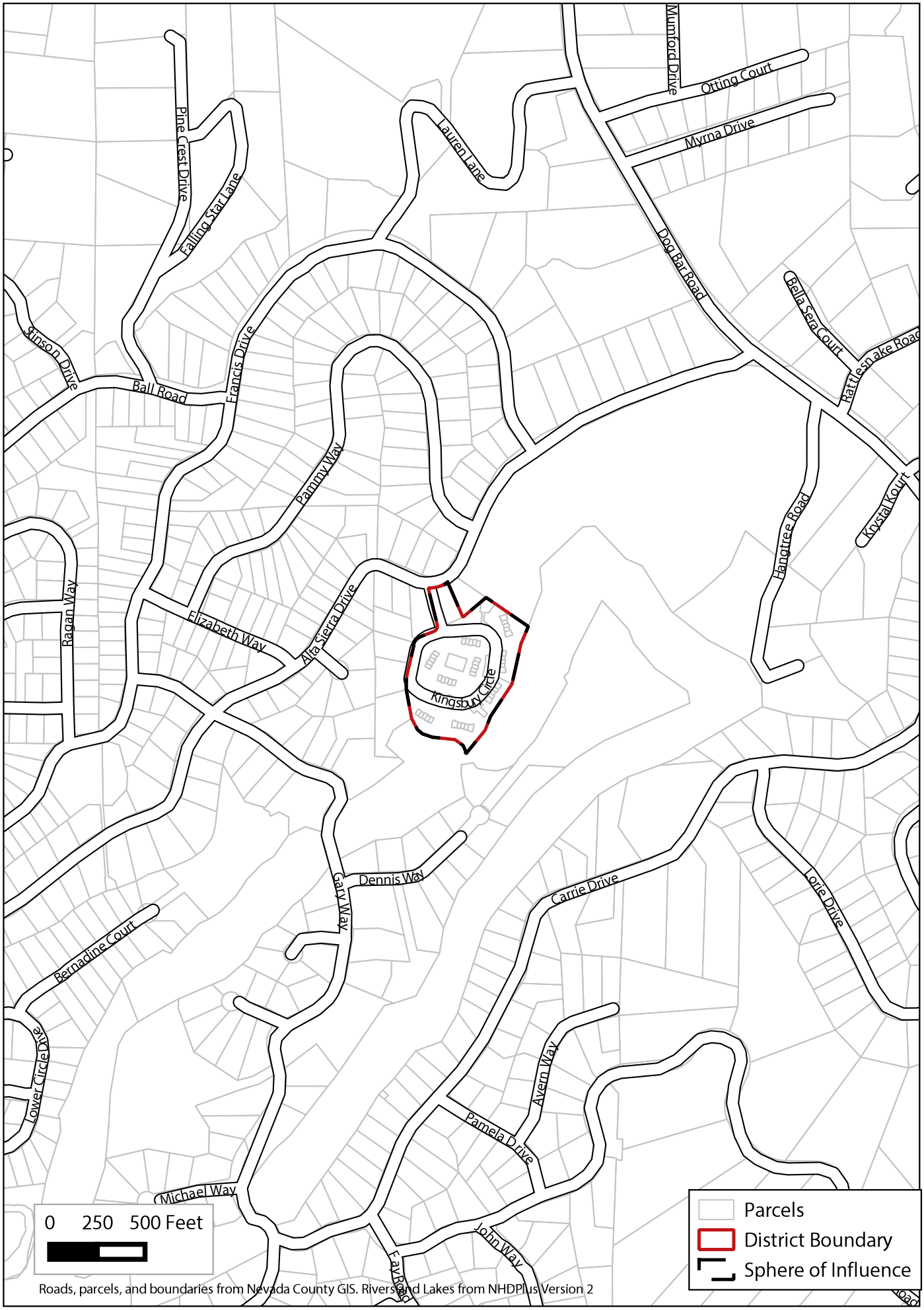
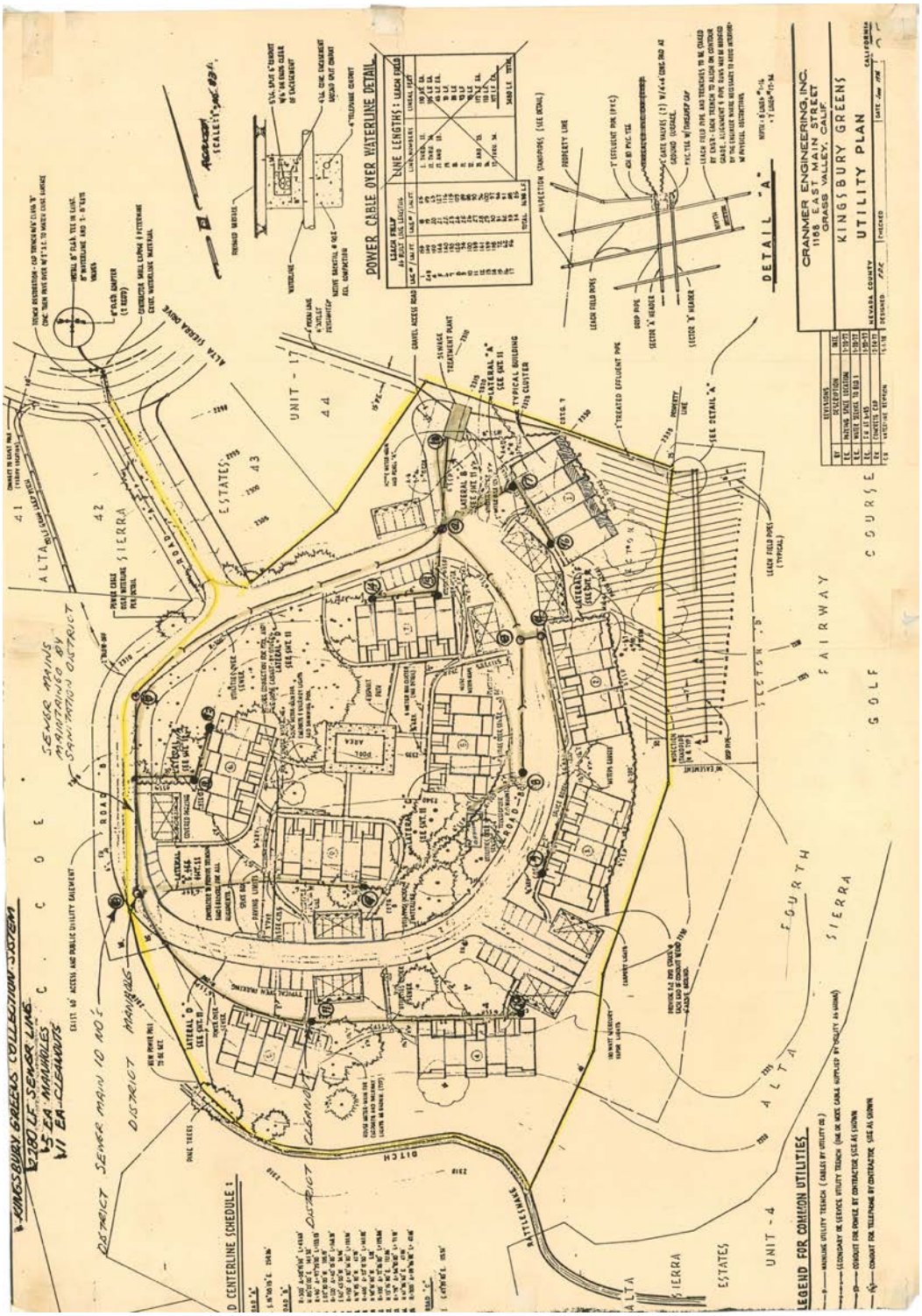


Figure 7-1

KINGSBURY GREEN COMMUNITY SERVICE DISTRICT

Figure 7-2: Significant Kingsbury Greens CSD Features



Governance Issues and Analysis of Possible Solutions

The District has ongoing difficulties with recruiting members to the Board of Directors. The recruitment and maintenance of Board membership is time-consuming and costly, and is a process that appears to become more difficult with the passage of time as residency within Kingsbury Greens shifts away from homeowner-occupied to renter-occupied. There are currently two vacant positions, meaning that there is a three-member Board of Directors. Three of five Directors must be present to take votes on Board matters, so an absence of even one member will result in an inability to form a quorum for decision making purposes. The CSD bylaws, which are based on Government Code § 61002 and Election Code § 321, require that all Board members must be voters (and therefore residents) of the District. The bylaws cannot be changed without becoming inconsistent with the cited state codes.

The HOA bylaws allow two of five members of the Kingsbury Greens HOA Board to be renters, while the rest must be owners. The HOA board currently only has three members, all of whom are resident-owners, and these members overlap on both the CSD and HOA Boards. Thus, although the HOA meets the same day and time as the CSD, overlap of CSD/HOA board membership and lack of membership involvement raises concerns for the management of the sewage system.

In 2007 the CSD adopted a resolution of application requesting LAFCo to dissolve the CSD and re-annex into the Nevada County Sanitation District. The application cited difficulty in recruiting new members for the Board of Directors, the high cost of operation and administration, and the increasing complexity of administrative requirements for public agencies in general. That application was deemed incomplete chiefly because the County Sanitation District would not support the annexation, and there remains a lack of political motivation to annex the CSD into the Sanitation District due to several factors. Foremost among these are the ongoing regulatory challenges with other Sanitation District-managed package treatment plants, challenges that have resulted in financial liabilities that the County does not wish to see replicated.

Nonetheless, the CSD continues to suffer from the same issues cited in its 2007 application to annex to the Sanitation District. The following discussion therefore reviews and evaluates the range of options for resolving the CSD's management difficulties:

1. **Transfer to the County Sanitation District**. In order to transfer management of the treatment plant to the Sanitation District, the CSD would need to apply to LAFCo to dissolve the CSD and obtain approval from the RWQCB and the Sanitation District. In addition, and pursuant to Government Code Section 56857(b), the Nevada County Sanitation District would have the ability to request termination of the procedures.

   As noted above, the application to re-annex cited high operational and administrative costs under CSD management. This evaluation will thus present a comparative fiscal analysis of the CSD with a similar nearby County Sanitation District facility, Gold Creek in Zone 5. Gold Creek is a small condominium complex of 44 units in Alta Sierra, similar to Kingsbury Greens which has 45 units and is also located in Alta Sierra. Both septic systems discharge to land-based leach fields. While these two systems are similar, there are some significant differences. Gold Creek is a standard septic system with a community septic tank and maintenance required on a three-year cycle, whereas Kingsbury Greens is a package treatment plant that requires weekly maintenance and operations costs, as well as monthly monitoring and reporting. The breakdown of costs between the two is shown in Table 7-1 below.

Table 7-1: Comparison of Gold Creek (Zone 5, County Sanitation District No. 1) and Kingsbury Green CSD Expenditures, Fiscal Year 2013-14		
Activity	Gold Creek	Kingsbury Greens CSD
Administration		
Subtotal Admin	$6,698	$3,268
Operations & Maintenance		
Equipment	$100	-
Infrastructure	-	-
Capital Replacement	-	-
Professional Services (Sludge Removal, Lab Fees, etc.)	$200	$2,280 (sludge removal) $1,950 (lab fees)
Rents & Leases	$191	-
O&M Contract Services	-	$7,800
Utilities	-	$5,896
Chemicals & Permits	$5,667	$1,350
Other or Shared O&M	$3,635	$24
Subtotal O&M	$9,793	$19,300
Total	$16,491	$22,568

Sources: Nevada County Department of Public Works, Sanitation District No. 1, Operations and Capital Financial Proforma, Fiscal Year 2013/2014; Kingsbury Greens Community Services District, Fiscal Years 2011-2015 Draft Budget.

Table 7-1 illustrates that the CSD's administrative costs are substantially lower than the County Sanitation District's Gold Creek facility, even though the Gold Creek facility is a simpler system with fewer facilities and operations and maintenance costs, as well as more streamlined permitting requirements. Lab fees are costs borne by the CSD that Gold Creek does not share due to the nature of the CSD's system. Kingsbury Greens CSD's largest single cost, other than for maintenance contract services, is for electricity. Again, Gold Creek has no utility costs due to the nature of the standard septic system which does not utilize electricity or gas. Operations and maintenance contract services are a significant portion of the CSD's overall expenditures, but this fee includes not only maintenance and operations, but monitoring, testing and preparation of monthly reports to the RWQCB. Considering that the CSD has a more complex system than Gold Creek with fixed expenses such as utilities, sludge removal, and lab fees that total $10,126, the $6,077 difference in operational costs between the CSD and Gold Creek is much less than would be anticipated.

Gold Creek wastewater customers currently pay $235 per year, while Kingsbury Greens customers pay $546 per year. However, the Draft 2013/2014 Sanitation Rate Scenario Evaluation prepared by the Nevada County Department of Public Works indicates a capital revenue shortfall under the Gold Creek rate and states that the needed O&M rate per connected EDU is actually $371 for FY 2013/2014. By FY 2014/2015, the needed O&M rate per EDU is anticipated to be $432.[6] Given the fiscal analysis above, it is likely that re-annexation into the County Sanitation District would result in a fee increase for Kingsbury Greens customers, particularly for administrative costs.

However, other issues cited in favor of CSD dissolution, such as increasing administrative complexity for public agencies and CSD Board member recruitment problems, would be resolved with this option. The Sanitation District has a full-time staff that regularly deals with administrative and regulatory issues, and its Board is comprised of paid Nevada County Board of Supervisors members who are also in full-time, paid positions. Without a full Board of Directors, which the CSD has been lacking for some time and which is anticipated to fall below the threshold for a quorum by the end of the year 2014, management of the CSD could collapse and the system could, in the worst-case, be shut down by the RWQCB for monitoring, reporting, and water quality violations. Re-annexation into the County Sanitation District would resolve this worst-case scenario— which is a reasonably foreseeable scenario given the existing conditions— by providing management certainty.

The Central Valley RWQCB, the regulatory agency responsible for the water quality outputs and public health impacts of the Kingsbury Greens CSD, supports Sanitation District annexation of the CSD as a better option than HOA or CSD management of treatment system. Citing the ongoing recruitment issues and potential for the CSD and HOA board members to vacate their seats for any number of reasons, Water Board staff has indicated that both HOA and CSD management could result in significant management voids. According to the RWQCB, the absence of management for the wastewater treatment system would likely lead to closure of the facility and could result in public health and water quality problems.[7]

However, the County Sanitation District Board has expressed reluctance to add another small package treatment plant to the Sanitation District, which has experienced problems with other small package treatment plants and incurred high costs as a result of stricter regulatory requirements on these facilities.

2. **Transfer to the Kingsbury Greens Homeowners Association (HOA)**. This option is analyzed to determine whether merging the CSD and HOA boards would result in fewer recruitment issues and possible reduction of administrative costs. Transferring management of the wastewater treatment system to the HOA would involve an application to LAFCo to dissolve the CSD as well as approval from the RWQCB. The RWQCB currently has no established application process to re-assign the management of small package treatment systems. According to Water Board staff, such changes are rarely made and are discouraged, especially when such changes are to further

[6] Nevada County Department of Public Works, Sanitation District No. 1, Operations and Capital Financial Proforma, Draft 2013/2014 Sanitation Rate Scenario Evaluation & Draft 2014/2015 Sanitation rate Scenario Evaluation.

[7] Olson, Anne, Senior Water Resource Control Engineer, Central Valley Regional Water Quality Control Board, phone conversation with Jessica Hankins, August 28, 2014.

privatize a system rather than to place it under the purview of a larger public entity. In the event of an application for transfer of management to an HOA, however, RWQCB considerations for approval would likely include the nature of the proposed management entity (public being preferred), the financial ability of the HOA to provide efficient management of the system, and the long-term stability and ability of the organization proposed for management. As noted in the previous discussion, Water Board staff supports Sanitation District management relative to HOA management of the Kingsbury Greens system.

If the HOA were to manage the treatment system, they would maintain the same responsibilities as the CSD currently does, most likely with the same Monitoring and Reporting Program requirements. The HOA would not be eligible to be operated under the purview of the County Environmental Health Department. Regulatory responsibility for package treatment plants is currently determined by flow and threat to water quality, not by number of residential units; the State determines regulatory responsibility for all wastewater facilities that treat more than six residential units.[8]

This option would help resolve overlapping responsibilities and duplicate membership and meeting times. However, the RWQCB has indicated that the District would not be eligible for public grants if the public CSD were dissolved and the treatment system managed by a private entity like the HOA. Other issues include the Water Board's concerns with the long-term viability of HOA board membership and ongoing recruitment issues and the potential effects a void in management could have on public health and water quality (an extended discussion of this issue is presented under option 1, above). The Water Board generally prefers that small systems be operated and maintained by a public entity, or a private entity that has real assets and a stable business enterprise, such as a corporation. According to the Senior Water Resource Control Engineer for the Central Valley RWQCB, who manages permitting for the division, "Homeowners Associations often do not make good owner/operators because wastewater treatment and disposal systems of this size and complexity are well beyond the realm of typical home maintenance, HOAs can be made financially insolvent by a single major repair or replacement scenario, and HOA board members do not understand their responsibilities as a permittee."[9]

In addition, the Reporting and Monitoring Program representative for RWQCB has indicated that none of the hundreds of systems under RWQCB jurisdiction are currently under the management of an HOA; all are managed by CSDs or other public agencies.[10] The Nevada County Environmental Health Department has identified only a couple of HOAs that are responsible for management of wastewater operations. Thus, HOA management appears to be uncommon and even undesirable for sewage treatment systems. HOA management would also be faced with the same membership recruitment and maintenance issues faced by the CSD, including an even smaller board membership than the CSD.

3. **Join a different special district**. Kingsbury Greens could also conceivably be annexed into a different special district, the boundaries of which do not have to be contiguous. The nearest

[8] Olson, ibid.
[9] Olson, ibid.
[10] Childs, Guy, Compliance and Enforcement Section, Central Valley Regional Water Quality Control Board, phone conversation with Jessica Hankins, August 14, 2014.

special districts are in Placer County approximately 20 miles away: Christian Valley CSD and Auburn Valley CSD. The desire of other special districts to annex a special district at that distance and in a different county is unknown. Additionally, operational certainty and cost efficiencies may not be achieved under this option. Although this alternative carries with it many uncertainties, the Kingsbury Greens CSD Board may wish to explore this option further before ruling it out completely.

4. **Join a nearby private provider**. While an option in some circumstances, this option is not viable in the present situation as there are no nearby private providers.

5. **Tie into a regional treatment facility.** Annexation into a regional treatment facility is the preferred option for the RWQCB given the management and water quality certainty it would provide. However, connecting to the nearest regional facility would likely be politically infeasible and may be financially infeasible, at least in the near-term future: the closest regional facility is the City of Grass Valley sewer system approximately 3.5 miles north. The next closest system, operated by the Sanitation District and 12 miles to the south in Lake of the Pines, would offer similar constraints. The long distances to the nearest regional facilities would preclude such an option, at least in the foreseeable future.

6. **Maintain the current status as a CSD**. Given that three board members are required for a quorum, the CSD will have serious management issues when the third board member position is vacated by the end of the year 2014. Even if a third member can be found, issues could also arise if another member must immediately vacate their post or if one or more fail to attend meetings. In the event of a collapse of the CSD, the district may fail to comply with its monitoring and reporting requirements, and the RWQCB could take measures to fine, cite, or even shut down the facility.

   Relative to the HOA providing management responsibilities, maintaining the CSD would likely be a better option, at least from the perspective of the Central Valley RWQCB (see discussion under items 1 and 2, above). The CSD presents a public-agency face for the management of the system, though it is a tenuous form of management at best. As noted above in alternatives 1 and 5, the RWQCB would prefer the annexation of the CSD into the County Sanitation District or tying the Kingsbury Greens system into a regional treatment facility (the latter of which is not considered financially or politically feasible at this time).

Table 7-2 summarizes the various benefits and of the three management options discussed above that are the most feasible. Infeasible options are not included in this table.

Table 7-2: Comparison of Effects of Potentially Feasible Management Options*				
Types of Effects	Transfer to County Sanitation District	Transfer to HOA	Join a different special district	Maintain status quo
Financial benefits to ratepayers	Negative	Same	Unknown	Same
Member recruitment	Positive	Same	Unknown	Same
Fewer administrative responsibilities for current board members	Positive	Positive, but could be uncertain with different Board	Positive	Same
Fewer regulatory responsibilities for current board members	Positive	Same	Positive	Same
Permanence and certainty in management	Positive	Same / uncertain	Unknown	Same / uncertain
* Relative to current conditions				

As shown in the summary table, the transfer to HOA management would result in only slightly fewer administrative responsibilities, but as discussed previously could be met with opposition from the Central Valley RWQCB, which has indicated a preference for the CSD to be maintained and operated by a public agency. Given the current issues with CSD board membership recruitment and maintenance, the preferable public agency is the County Sanitation District, which would provide more permanence and certainty in the management of the system. **The best potentially feasible management option at the current time appears to be re-annexation into the Sanitation District**, though without County Sanitation Board support, the next best option is probably maintenance of the status quo.

7.5 MANAGEMENT EFFICIENCIES AND STAFFING

The Kingsbury Greens CSD is primarily a volunteer organization, and management efficiencies are gained through these volunteer efforts. While Board members manage the agency, the CSD employs a certified plant operator as a contract employee and a contract person for a portion of one administrative support position to handle bookkeeping, administrative, and clerical tasks. No record of existing or pending lawsuits/litigation or safety or environmental permits violations were noted. The Kingsbury Greens CSD also contracts with a CPA for its annual audit. Due to the size of the District, no cooperative agreements are in place. The limited pool of potential Board members could impact management efficiencies in the future.

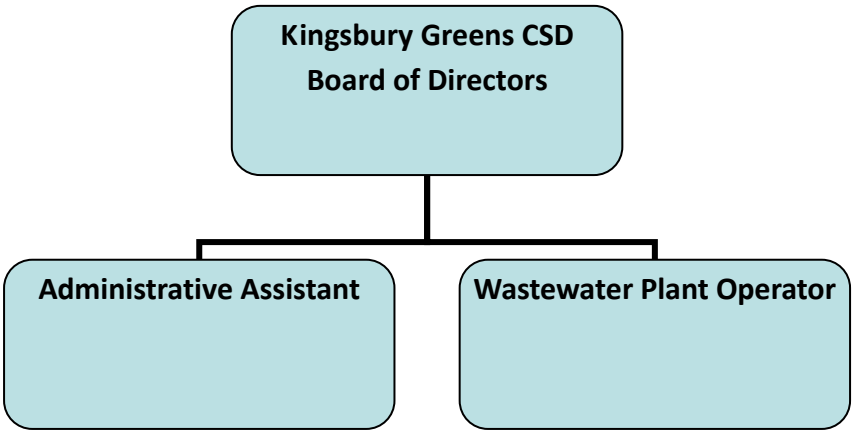
Table 7-3 summarizes the personnel and hour expenditures utilized in the operation of the Kingsbury Greens wastewater system.

Table 7-3: Personnel Summary for Kingsbury Greens CSD	
CSD Wastewater Function	FTE as of July 1, 2013
Management	CSD Board (voluntary) (0.0 FTE)
Administration	1-2 hours per month (0.01 FTE)
Wastewater Operations and Maintenance	10 hours per month (0.06 FTE)

Source: Meeting Minutes, Nevada LAFCo 2014 MSR Update, Kingsbury Greens CSD, June 4, 2014.

The Kingsbury Greens contract wastewater operator regularly checks facilities for visual condition, odors, nuisance insects, and security; reads the effluent flow meter and records accumulated total; tests the lead and lag pumps and pump run light for proper operation; tests sludge settle-ability and waste-appropriate solids from clarifier to sludge holding tank; decants the sludge holding tank as needed; checks the plate separator for solids buildup; checks the blowers for operation, air filter cleanliness; lubricates, cleans, and tests all mechanical equipment, tanks, and structures; inspects the leach field laterals and cutoff drain manhole weekly; alternates the leach fields on a quarterly basis; schedules and assists with semiannual solids pumping; delivers the monthly and annual samples to a local lab for analysis; reports to the RWQCB on a monthly basis on the quality and quantity parameters as defined in the current Waste Discharge Requirements and the Monitoring and Reporting schedule; makes adjustments to air flow and return rate as needed for process control; responds to emergency calls from residents or neighbors for power outages, high sump level alarm, odor problems, and collection system stoppages; and attends regulatory and board meetings as needed.[11]

The following flowchart illustrates the hierarchical relationships among staff.



[11] Beckley, Rick, Certified Wastewater Treatment Plant Operator, Kingsbury Greens CSD Operator Tasks and Responsibilities, June 23, 2014.

7.6 POPULATION AND GROWTH

Population

The City of Grass Valley is the closest socioeconomic center to the District area, but is not part of the District's service area. The only connections served by the Kingsbury Greens CSD are within the 45-unit Kingsbury condominium complex, which has an estimated population of 70 people and only two residential vacancies.[12] The District maintains nine service connections, one for each residential building, which are in blocks of five units each. No commercial or industrial connections are maintained.

Kingsbury Greens is not a census-designated place, so actual population statistics for the District were not available. County planning documents indicate that no growth is planned in the District,[13] and District representatives indicate that the District does not plan to expand its service areas.[14]

Projected Growth and Development

The territory within the CSD is designated as Urban Medium Density by the Nevada County General Plan and R2-PD by the Nevada County Zoning Ordinance. The territory is entirely developed, and no growth is planned in the area.

Disadvantaged Unincorporated Communities

As described in Chapter 3, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Kingsbury Greens CSD. No DUCs have been identified within Kingsbury Greens. Since Kingsbury Greens is not a Census-Designated Place (CDP), U.S. Census information cannot be directly used to determine median household income (MHI) for this neighborhood. However, since Kingsbury Greens is located in the unincorporated community of Alta Sierra and since Alta Sierra is a CDP, data for Alta Sierra can be used as a proxy for Kingsbury Greens, in this case. Data from the 2010 U.S. Census indicates that the MHI for Alta Sierra is $67,097[15]. This is significantly higher than the statewide MHI of $60,883. This data indicates that Kingsbury Greens (and Alta Sierra) are not considered as DUCs. Additionally, in August 2013 the Nevada County Planning Department, in consultation with Nevada LAFCo staff, evaluated 42 potential legacy communities within Nevada County (which have the potential to be DUCs). Kingsbury Greens was not on the original list of 42 potential legacy communities, nor was it one of the five that met the definition of a DUC per SB 244. Additionally, the Department of Water Resources DAC mapping tool does not identify Kingsbury Greens as a disadvantaged community.

[12] Meeting Minutes, Nevada LAFCo 2014 MSR Update, Kingsbury Greens CSD, June 4, 2014.
[13] Nevada County, *General Plan,* Adopted 1996 and Updated 2008 (Safety) and 2010 (Circulation/Housing).
[14] Meeting Minutes, Nevada LAFCo 2014 MSR Update, Kingsbury Greens CSD, June 4, 2014.
[15] U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, County Business Patterns, Economic Census, Survey of Business Owners, Building Permits, Census of Governments at: http://quickfacts.census.gov/qfd/states/06/0601360.html.

7.7 WASTEWATER SERVICES

Service Overview

Located north of Alta Sierra and accessed by Alta Sierra Drive, the Kingsbury Greens CSD operates and maintains a small wastewater treatment facility serving a 45-unit condominium complex. Once a zone of the County Sanitation District, it was established as a separate district in 1995. Constructed in 1978, the system includes an extended aeration package treatment plant with final land-based disposal to a community leach field. The CSD contracts with a wastewater operator to monitor the operation, schedule equipment maintenance and replacement, and schedule sludge disposal as needed (about twice a year). Funding for sewer services is provided through user fees established by the District, assessed on the property tax bills of each property owner.

The District complies with an RWQCB Monitoring and Reporting Program (MRP) designed to show compliance with waste discharge requirements. Leachfield monitoring includes a weekly visual inspection of the leachfield. Also required is monthly monitoring of leachfields, a leachline riser inspection, and a cutoff manhole inspection. The wastewater operator collects effluent samples on a monthly basis and has them tested at a local laboratory for pH, total dissolved solids, nitrates as nitrogen, and other constituents. Collection and testing for coliform organisms and total dissolved solids is required only in the event that surfacing effluent is found. All of the collected information is then submitted to the RWQCB with the monthly report.[16] The District reports on a monthly basis in compliance with the MRP and has not received any cease and desist orders or other violations for operation of the treatment facility. RWQCB formerly conducted annual site inspections, but the District operator indicates that at least 10 years have passed since the last inspection.[17]

Wastewater Capacity

The District maintains the Kingsbury Greens facilities, including an extended aeration package treatment plant. Treated effluent is disposed in a community leach field. Relevant capacity information is shown below in Table 7-4.

[16] California Regional Water Quality Control Board, Central Valley Region, Revised Monitoring and Reporting Program, Kingsbury Greens Community Services District Wastewater System, Nevada County, August 26, 2004.
[17] Meeting Minutes, Nevada LAFCo 2014 MSR Update, Kingsbury Greens CSD, June 4, 2014.

Table 7-4: Treatment Capacity for Kingsbury Greens CSD	
Data Field	Gallons per day (gpd)
Permitted treatment capacity	11,500
Average flow volume	3,100
Peak flow within last year	5,100
Projected future demand for services in 2015, 2020, and 2025	0
Estimated service demand outside district boundary in next 5 years	0
Capacity reserved for planned or proposed development	0

Source: Meeting Minutes, Nevada LAFCo 2014 MSR Update, Kingsbury Greens CSD, June 4, 2014.

As shown in Table 7-4, the Kingsbury Greens CSD package treatment plant has very low flow volumes. Further, no capacity has been officially designated or reserved for planned development, but capacity exists, with a differential of 8,400 gpd between what is permitted and what is treated on average. One reason for the discrepancy between the actual flows and permitted flows is that a swimming pool was originally designed and planned as part of the Kingsbury development, but the pool was never constructed. There are currently no plans to construct it, so the excess capacity will likely remain constant.

7.8 WASTEWATER INFRASTRUCTURE AND PUBLIC FACILITIES

The Kingsbury Greens Homeowners Association (HOA) owns the land through which the collection system runs, as well the land on which the treatment plant is located, and the plant structure itself. The leach fields are located on an easement of the Alta Sierra golf course.

Collection Systems

Wastewater collection is provided by a system of collection pipes, with nine connections at each of the nine building serving five units each. The system includes six manholes, eight clean-outs, 2,273 linear feet of six-inch line, and a package treatment plant. The CSD also maintains a backup generator in the event of a power failure. As an independent contractor, the wastewater operator supplies any equipment and vehicles necessary for maintaining the treatment plant and performing monitoring and reporting duties.

Treatment Systems

The CSD's wastewater treatment plant provides secondary treatment, a moderate level of treatment that allows for land-based effluent disposal and separate sludge removal. The secondary wastewater treatment plant serving Kingsbury Greens is a Can-Tex package plant. Raw sewage from the residential sources is conveyed to the treatment plant by gravity flow. Raw influent is pretreated by comminution (grinding) before it enters the diffused air aeration basin. Air is then blown into the tank to provide an activated sludge biological population. From the aeration basin, water flows into the two parallel secondary clarifiers. Clarification allows the solids to settle to the bottom of tank where air is again used to pump the concentrated solids back to aeration. The clear water in the clarifier flows off of the surface

over effluent weirs and into a plate separator. The separator further traps any floating material that may have been left in the effluent, and the final treated effluent is then pumped from the treatment plant to underground leach fields. The accumulated solids produced by the system are periodically "wasted" to an aerated holding tank, where they, along with material trapped in the separator, are transported for further processing and disposal at the Grass Valley wastewater facility.[18]

Disposal

Effluent discharges into the land-based leachfields, located on the Alta Sierra golf course just outside the service boundary (see Figure 7-2). Kingsbury Greens CSD has a 90-foot utility easement in the leachfield area. Leach lines range from two to five feet underground, and the District maintains both an active leach field and a repair area in the event of failure of the active field. Accumulated sludge is typically removed two times years, once in winter and once in summer. The District's wastewater operator coordinates sludge removal with an independent septic service, which transports the sludge to the City of Grass Valley for treatment at their wastewater treatment plant.

Adequacy and Challenges in Provision of Wastewater Service and Infrastructure

The Kingsbury Greens CSD does not currently have any discharge violations, nor does it have a history of violations.

Opportunities for Shared Facilities

Given that Kingsbury Greens is situated 3.5 miles from City limits of Grass Valley, and is within the unincorporated community of Alta Sierra which is not serviced by a public sewage system, there are no viable options at the moment for sharing sewage collection or treatment facilities. Storm water sheet flows over roadway and permeable surfaces in the Alta Sierra area to ditches in the roadsides. The Kingsbury Greens wastewater treatment plant is not a combined storm water/sewage treatment facility, nor are there plans to combine these facilities. According to the plant operator, there is no measurable infiltration and inflow from storm water, which has the ability to dilute sewage.

Meeting facilities are shared with the Kingsbury Greens administrative office, where HOA meetings are also conducted.

7.9 FINANCING

The general fund is the chief operating fund of the District, and is is unassigned and available for capital improvements and general operations. As of June 30, 2010, the fund balance was $63,450, and the following year on June 30, 2011, the fund balance had dropped to $59,022.

[18] Beckley, Rick, Certified Wastewater Treatment Plant Operator, Kingsbury Greens Process Description, September 11, 2014.

Revenues and Expenses

The District receives an assessment of $546 per unit on owners within the District boundaries. That amount is the same per residential unit as all units have two bedrooms. Funding for maintenance and operations comes from these property assessments on District residents.

Rates are established by a Resolution of the Kingsbury Greens CSD Board, but must go through a public process and two-thirds electorate vote when rates are increased. See "Rate Restructuring" below for more information.

The District prepares an annual budget and an annual financial statement. The District reported that the current financing level is adequate to deliver the present services. Following is a summary of the last three fiscal years' annual budgets for the Kingsbury Greens Community Services District.

Table 7-5: Operating Budget for Kingsbury Greens CSD

Revenues	2011/2012	2012/2013	2013/2014
Assessments	$24,570	$24,436	$24,548
Bank Interest	1	3	6
LAIF Interest	220	81	0
Total Revenues	$24,791	$24,520	$24,554
Expenses			
Administration	$4,455	$6,284	$4,618
Operations	12,160	10,296	10,150
Maintenance	8,175	7,894	7,800
Total Expenses	$24,790	$24,474	$22,568
Surplus	$1	$46	$1,968

Source: Budget adopted on June 4, 2014, by the Board of Directors of Kingsbury Greens CSD

However, according to the most recently available Financial Statement prepared by Jensen & Smith CPAs on August 31, 2012, during FY 2009/2010 and 2010/2011, the fund activities were as follows:

Table 7-6: Government-Wide Fund Activities for Kingsbury Greens CSD

	As of June 30, 2011	As of June 30, 2010
Revenues	$20,722	$21,040
Expenses	($25,828)	($26,636)
Surplus (Deficit)	($5,106)	($5,596)
Fund Balance	$59,022	$63,450

Source: Jensen Smith, Kingsbury Greens Community Services District Financial Statements: June 30, 2011 and 2010, August 31, 2012.

This information shows that the CSD's expenses exceeded its revenues for at least two consecutive years, resulting in a decrease of general fund reserves. During these years the District's revenues and

expenses did not correlate with the projected revenues and expenses in its annual budgets. It should be noted that the preparers of this report have on multiple occasions requested a more recent Financial Statement from the CSD to determine the longevity and consistency of this pattern, but it was not provided.

Asset Maintenance and Repair

An independent auditor's report is provided biennially, with the last report for the years 2010 and 2011 (dated August 31, 2012), and a pending report (unavailable at the time of this writing) for the years 2012 and 2013. On June 30, 2010, the District's assets exceeded its liabilities by $63,450, and on June 30, 2011, assets exceeded liabilities by $59,022. The entire fund balance ($59,022 on June 30, 2011) is unassigned and available for general operations. This amount is considered to be the District's 'reserve fund.'

The independent auditor has indicated that there is a material weakness in the District's internal accounting controls insofar as the District relies on the auditor to prepare the financial statements. Statement of Auditing Standards No. 115 states that the auditor may not be part of the District's internal control system and that someone in the District must be capable of preparing financial statements in conformance with generally accepted accounting principles. The District's response to this recommendation is that it does not have the financial resources to hire a trained accountant and that it will continue to rely on the auditor to suggest journal entries and footnote disclosures as part of the audit process.[19] The auditor also noted that there are other opportunities for strengthening internal controls and improving operating efficiencies. These opportunities include having a board member initial and date invoices prior to payment, and including the balance in the Nevada County Treasury and the accounting records, and reporting the balance regularly at Board meetings. These actions can help to prevent fraudulent activity and errors in the account.[20]

Typical day-to-day maintenance is performed by the contracted plant operator, who spends approximately 10 hours per month performing visual inspections and maintaining and repairing the system, along with his usual monitoring and reporting duties.

The lifespan of typical sewage treatment plants is 20 to 25 years, but typical plants carry regulatory and capacity issues that are not shared by the Kingsbury Greens plant. Table 7-6 below shows the lifespan of various system components. The building structure itself has a usual lifespan exceeding that of the CIP, though routine maintenance such as paint and roofing may be needed periodically. The communitor, another high-cost component, is expected to require replacing within the next year, and this replacement will be funded by budget reserves. Other capital improvement items are described in more detail below.

The leach field is now 39 years old, an age that exceeds the typical lifespan of 30 years. Contributing to the good condition of the leach field are the practice of switching the leach lines on a quarterly basis and the low volumes of treated effluent that are far under the design capacity of the system.

[19] Jensen Smith, Communication of Significant Deficiencies and Material Weaknesses, Kingsbury Greens Community Services District Financial Statements: June 30, 2011 and 2010, August 31, 2012.

[20] Jensen Smith, Letter to Kingsbury Greens CSD, Kingsbury Greens Community Services District Financial Statements: June 30, 2011 and 2010, August 31, 2012.

Capital Improvements

Upgrades and capital improvements to the wastewater treatment system are planned in the Capital Improvement Plan (CIP) and funded by the District's general fund, which contains all unassigned monies that may be distributed in any manner related to the operation of the system.

The District has prepared a CIP dated June 2014 that describes the current assets owned by the Kingsbury Greens CSD and provides a value and estimated year of repair for each. The aeration system, a $9,000 expense, was just replaced in 2012. The communitor will need replacement the soonest, by 2015, at a value of $20,000. Effluent pumps and meters will also need to be replaced in 2016 and 2017 at a cost of $300 and $250, respectively.[21] Table 7-7 identifies the capital improvements anticipated over the next three years.

Long-term Liabilities and Debts

The wastewater plant operator is not aware of any deficiencies within the collection system infrastructure, although aging infrastructure is likely a long-term liability that will require replacement as needed. The District's prior six fiscal years carried no debt. The District does not have any debt at this time, nor does it anticipate acquiring debt. Capital improvements are paid through the general fund, which is unassigned for any specific purpose other than operational needs.

The Kingsbury Greens HOA carries an umbrella insurance policy for the treatment plant. The CSD is not a member of the California Special Districts Association, which provides cost-saving opportunities for insurance coverage.

Cost Avoidance

The District's administrative operations result in cost savings not found in many other districts. For example, District meetings are held at the District office, on property the Kingsbury Greens HOA owns. The Board of Directors is voluntary and is therefore not compensated for meetings. The District employs only two part-time personnel, both independent contractors who are paid on an hourly basis. These include an administrative assistant and a licensed operator, who are both paid only for hours worked. An independent auditor is contracted biennially, rather than annually, to conduct a financial audit.

[21] Beckley, Rick, Certified Wastewater Treatment Plant Operator, *Capital Improvement Plan – Kingsbury Greens*, June 2014.

Table 7-7: Capital Improvement Plan for Kingsbury Greens CSD						
Asset	Value	Anticipated Year of Replacement				Comments
		2014	2015	2016	2017	
Building structure	$20,000					Structure has useful life exceeding CIP span.
Tankage	N/A					Structure has useful life exceeding CIP span.
Comminutor	$20,000		X			
Air Diffusors	$9,000					Diffusers were rebuilt in 2012.
Control Systems	$4,000					
#1 Blower	$7,000				X	Allows for one of the two blowers to be rebuilt.
#1 Blower Motor	$350					Replacement motor for either blower is in stock.
#2 Blower	$7,000					
#2 Blower Motor	$350					Replacement motor for either blower is in stock.
#1 Effluent pump	$300			X		
#2 Effluent pump	$300					
Effluent Flow Meter	$250				X	
Leach field	N/A					Field is in good condition after 39 years. Individual branches can be repaired or abandoned as needed.
Collection system infrastructure	N/A					No deficiencies are known

Source: Beckley, Rick, Certified Wastewater Treatment Plant Operator, *Capital Improvement Plan – Kingsbury Greens*, June 2014.

Since the 2004 MSR, the District has begun transporting its sludge to the City of Grass Valley for treatment. Prior to that, sludge was taken to the Sacramento Valley for treatment. The District has seen a cost savings from this change.

Factors that affect the District's ability to supply wastewater services include the cost of power and outside services to haul sludge.

Rate Restructuring

The most recent fee resolution adopted on June 4, 2014, by the Kingsbury Greens Board of Directors establishes a flat fee of $546 per year for each connection. That charge must be used exclusively for the operating expenses of the District, and is collected through County property taxes. The fee is established based on the anticipated operating budget for the upcoming year divided by the number of service connections.

Rate increases and special assessments needed for capital improvements must meet the provisions of Proposition 218, which amended the California Constitution (Articles XIIIC and XIIID) in 1996. Proposition 218 requires that special districts have a two-thirds vote of the affected property owners for any proposed new or increased assessment for major improvements and replacements. The tax is not considered increased when a special district "makes a decision that either (1) adjusts the amount of a tax in accordance with a schedule of adjustments, including a clearly defined formula for inflation adjustment that was adopted by the agency prior to November 6, 1996; or (2) implements or collects a previously approved tax, so long as the rate is not increased beyond the level previously approved by the special district, and the methodology previously approved by the special district is not revised so as to result in an increase in the amount being levied on any person or parcel."[22] For that reason, when adopting or increasing any special tax, Kingsbury Greens should consider including escalators and maximum rate provisions in the tax ordinance submitted for voter approval, in order to avoid having to seek voter approval for any future tax increases.

7.10 DETERMINATIONS

Growth and Population Projections

1. Kingsbury Greens CSD currently serves 45 residential sewer service connections. Estimated population within the service area is 70.
2. The population served by the District is largely comprised of residential rentals.
3. The District currently has the capacity for a flow rate of 11,500 gallons per day (gpd), while the average existing flow rate is 3,100 gpd, and last year's peak flow was 5,100 gpd.
4. The District is projected to have a zero population growth rate. Since the 2004 MSR, no new area has been annexed, and the service area includes an existing development with no additional room for more development.

[22] California Special Districts Association, Proposition 218 Guide for Special Districts (pp. 7-8), 2013.

Disadvantage Unincorporated Communities

5. In August 2013 the Nevada County Planning Department, in consultation with Nevada LAFCo staff, evaluated 42 potential legacy communities within Nevada County. Of the original list of 42 potential legacy communities, the County found that five met the definition of a DUC per SB 244. Additionally, the Department of Water Resources has identified the same five DUCs in Nevada County as the Planning Department and LAFCo. Kingsbury Greens was not one of these five because it did not meet the definition of a DUC.

Present and Planned Capacity of Public Facilities

6. The District was established in 1978 to provide sewer service to the Kingsbury Condominium project, a 45-unit complex of 2-bedroom single-family attached condominium units in northern Alta Sierra.

7. The District currently provides wastewater service to its customers.

8. Repairs and replacements will be necessary on an ongoing basis for both wastewater collection, treatment, and infrastructure.

9. The District operates under Reporting and Monitoring Program No. 95-238, which requires monthly monitoring, testing, and reporting. The Central Valley RWQCB does not routinely inspect the facility, which is found to be in compliance and has not received any cease and desist orders.

10. The District has no plans to expand its wastewater treatment facility, and serves customers only within its service area.

Financial Ability of Agency to Provide Services

11. The District's operations and maintenance activities are funded through a special assessment on residential property taxes for properties within the service area.

12. The FY 2011-2012 through 2014-2015 budgets demonstrates adequate finances for the continued ability of the District to provide services, with no substantial surplus.

13. The District reported that the current financing level is adequate to deliver services presently.

14. Funding for capital improvements to the wastewater treatment plant comes from the District's general fund, which consists of unassigned monies not reserved for any specific purpose other than operational needs.

15. The June 2014 Capital Improvement Plan (CIP) identifies structural components that will need to replaced in the next four years. The CIP should be expanded to include further future dates of capital replacement and repair needs.

16. Rates should continue to be reviewed and adjusted as necessary to fund District costs and provide for capital improvements as needed.

17. The District fees are set through a public process, and it is assumed that a nexus study for linking new fees to the cost of providing services has been prepared. No nexus study was requested or provided as part of this service review.

18. To improve operational efficiency and strengthen internal controls, a Board member should initial and date invoices prior to payment, include the fund balance in the Nevada County Treasury and the accounting records, and report the balance regularly at Board meetings. These actions can help to prevent fraudulent activity and errors in the account.

19. The District should hire an accountant knowledgeable about generally accepted accounting principles to prepare the District's financial statements rather than relying on the auditor to do that.

20. When adopting new fees or assessments for capital improvements, or when increasing rates, Kingsbury Greens CSD should consider including escalators and maximum rate provisions in the tax ordinance submitted for voter approval, in order to avoid having to seek voter approval for any future tax increases.

Opportunities for Shared Facilities

21. The District does not share facilities, staff, or other resources with other districts, but it does share some components with the Kingsbury Greens Homeowners Association, such as the meeting facility and an umbrella insurance policy. The treatment plant and related collection system is also located on HOA property. This sharing results in cost savings to the CSD.

22. The revenue per EDU for the District is high due in part to increased costs associated with operating and maintaining a small district. For smaller agencies, it is generally more difficult to reach economies of scale and still comply with regulatory requirements.

Accountability for Community Service Needs

23. In 1979 LAFCo approved annexation of the territory to the County Sanitation District in order to comply with Central Valley RWQCB requirements, and in 1995 the territory was detached from the Sanitation District and a CSD formed. In 2007 the CSD applied for re-annexation to the County Sanitation District but the application was deemed incomplete.

24. The District has difficulty recruiting members to the Board of Directors. One position has remained vacant for some time and another has recently become vacant. Several CSD Board members are also on the HOA Board.

25. Without a quorum on the Board of Directors, the District will have difficulty maintaining operational status.

26. The CSD would achieve greater certainty of continued operations by transferring administrative responsibility to the County Sanitation District. The CSD Board should consider applying to LAFCo for re-annexation to the County Sanitation District.

27. Though not the recommended alternative due to the infrastructure (piping) costs, and the uncertainty or willingness of the City of Grass Valley to participate, the Board of Directors may also consider piping untreated effluent to the City of Grass Valley wastewater treatment facility

(3.5 miles to the north) for treatment and disposal. The District may also be eligible for grant and/or loan funds for this purpose.

Any Other Matter Relative to Service Delivery as Required by Commission Policy

28. There are no other aspects of the District's wastewater service that are required by Commission policy to be addressed in this MSR.

REFERENCES

Beckley, Rick, Certified Wastewater Treatment Plant Operator, Capital Improvement Plan – Kingsbury Greens, June 2014.

Beckley, Rick, Certified Wastewater Treatment Plant Operator, Kingsbury Greens CSD Operator Tasks and Responsibilities, June 23, 2014.

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Childs, Guy, Compliance and Enforcement Section, Central Valley Regional Water Quality Control Board, phone conversation with Jessica Hankins, August 14, 2014.

Jensen Smith, Communication of Significant Deficiencies and Material Weaknesses, Kingsbury Greens Community Services District Financial Statements: June 30, 2011 and 2010, August 31, 2012.

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Jensen Smith, Letter to Kingsbury Greens CSD, Kingsbury Greens Community Services District Financial Statements: June 30, 2011 and 2010, August 31, 2012.

Local Agency Formation Commission, Sphere of Influence Updates 2009: County Sanitation District No. 1, Kingsbury Greens Community Services District, approved June 18, 2009.

Meeting Minutes, Nevada LAFCo 2014 MSR Update, Kingsbury Greens CSD, June 4, 2014.

Meeting Minutes, Nevada LAFCo 2014 MSR Update, Kingsbury Greens CSD, June 4, 2014.

Meeting Minutes, Nevada LAFCo 2014 MSR Update, Kingsbury Greens CSD, June 4, 2014.

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Nevada County Board of Supervisors, Agenda for a Regular Meetings of the Board of Supervisors, August 10, 2004.

Nevada County Board of Supervisors, Staff Report: One Appointment and Two Reappointments to the Kingsbury Greens Community Services District, November 12, 2013.

Nevada County Department of Public Works, Sanitation District No. 1, Operations and Capital Financial Proforma, Draft 2013/2014 Sanitation Rate Scenario Evaluation & Draft 2014/2015 Sanitation rate Scenario Evaluation.

Nevada County Department of Public Works, Sanitation District No. 1, Operations and Capital Financial Proforma, Fiscal Year 2013/2014; Kingsbury Greens Community Services District, Fiscal Years 2011-2015 Draft Budget.

Nevada County, Nevada County General Plan, Adopted 1996 and Updated 2008 (Safety) and 2010 (Circulation/Housing).

Olson, Anne, Senior Water Resource Control Engineer, Central Valley Regional Water Quality Control Board, phone conversation with Jessica Hankins, August 28, 2014.

Chapter 8
NEVADA COUNTY SANITATION DISTRICT NO. 1

8.1 DISTRICT PROFILE

Type of District: Sanitation district
Principal Act: Clean Water Act, California Water Code, Titles 22 and 23 California Administrative Code § 3670
Functions/Services: Sewage collection and treatment within 10 sanitation zones
District Area: 10 zones throughout Western Nevada County (see Figure 8-1)
Sphere of Influence: Varies by zone (see Figures 8-2 through 8-11)
Population: est. 10,000
Budget (FY 2014/2015): $6,804,302 expenditures (with $2,035,656 of that capital improvements, $2,059,810 O&M, and $2,708,836 administration**)**
Main Office: 950 Maidu Avenue, Nevada City, CA 95959
Mailing Address: Same
Phone No.: (530) 265-1411
Fax No.: (530) 265-1553
Web Site: www.mynevadacounty.com/nc/cda/pw

Director of Public Works: Steve Castleberry
Email: Steve.Castleberry@co.nevada.ca.us Phone: 530-265-1411

Sanitation District Program Manager: Brad Torres
Email: Brad.Torres@co.nevada.ca.us Phone: 530-265-7103

Wastewater Plant Operations Supervisor: Britt Bolerjack Phone: 530-265-7121
Email: britt.bolerjack@co.nevada.ca.us

Governing Body: Nevada County Board of Supervisors, 4-year terms[1]

Name	Position	Term Ends
Nate Beason, Dist 1	Chair	12/2016
Ed Scofield, Dist 2	Vice Chair	12/2016
Dan Miller, Dist 3	Director	12/2018
Hank Weston, Dist 4	Director	12/2018
Richard Anderson, Dist 5	Director	12/2016

Meeting Schedule: Second and fourth Tuesday of each month, 9:00 a.m.
Meeting Location: Board chambers, 950 Maidu Avenue, Nevada City, CA 95959
Date of Formation: August 2, 1965

[1] Nevada County Board of Supervisors. Staff Report: One Appointment and Two Reappointments to the Kingsbury Greens Community Services District. November 12, 2013.

8.2 OVERVIEW OF DISTRICT

The Nevada County Sanitation District No. 1 provides wastewater services, including collection, treatment, and disposal, to the residents of unincorporated communities in ten "zones" of Western Nevada County: Lake Wildwood, Lake of the Pines, North San Juan, Gold Creek, Penn Valley, Mountain Lake Estates, Cascade Shores, Eden Ranch, Higgins Village, and Valley Oak Court. A comparison of these zones' equivalent dwelling units (EDUs) is shown in Table 8-1, below:

Table 8-1: Comparison of Sewer EDUs by Zone

Zone No.	Zone Name	Connected EDUs (Non-residential in parentheses)	Reserved EDUs[1]	Unallocated EDUs
1	Lake Wildwood	2,916 (62)	652	732
2	Lake of the Pines	2,090 (80)	97	500
4	North San Juan	85 (9)	29	0
5	Gold Creek	44	0	0
6	Penn Valley	347 (14)	111	0
7	Mountain Lake Estates	40	6	0
8	Cascade Shores	86 (2)	19	0
9	Eden Ranch	27	4	2
11	Higgins Village (all commercial)	47.8 (47.8)	0	0
12	Valley Oak Court	5	5	0
Total EDUs		**5,687.8 (214.8)**	**923**	**1,234**

[1] Reserved EDUS are those which are held in reserve with a financial surety.

Source: Nevada County Sanitation District No. 1. Sewer EDUs per Zone. 2014.

Over the years some zones have merged into others or have been dissolved, so zone numbering is not always sequential. Since the previous MSR was published in 2004, Combie Plaza and Cascade Crossing have been constructed and connected to Lake of the Pines, and Dark Horse (previously a separate zone) was connected to the Lake of the Pines. Valley Oak Court is also new zone with ten EDUs.

There are a few islands within the former Glenbrook zone that remain in the City's SOI and directly outside/adjacent to the City's SOI. As a parcel within the former Glenbrook zone gets annexed to the City, LAFCo should ensure it is concurrently detached from the County Sanitation District Glenbrook zone. A determination to this effect is included in Chapter 5 *Grass Valley.*

Other than the approved but undeveloped Rincon del Rio and Higgins Marketplace in South County near Lake of the Pines, the Sanitation District is not aware of any new major projects under consideration that would require annexation into the District. One capital improvement project is anticipated in the

next five years: the conversion of the Cascade Shores wastewater treatment plant (WWTP) to a community leach field, with no additional capacity.

The ten zones for which the District is responsible are shown in Figure 8-1, Overview of Sanitation District Zones. Figures 8-2 through 8-11 illustrate the locations of individual zones.

Primary reference sources for this chapter include the 2012 Sewer System Management Plan for the details of sewer service and sewer infrastructure and the Request for Information provided by the Nevada County Department of Public Works' Wastewater Division.[2,3]

Location and Size of Sanitation District

Nevada County as a whole is 958 square miles in size.[4] The County straddles the crest of the Sierra Nevadas, and the crest provides a geographic dividing point separating eastern Nevada County from western Nevada County. The Sanitation District serves only a relatively small portion of western Nevada County covering a total of about 9 square miles (5,707 acres). Western Nevada County spans an area generally located north of Auburn, west of Donner Summit, east of Marysville, and south of Sierra County, as shown in Chapter 1 *Executive Summary,* Figure ES-1.

Zones-at-a-Glance

This section provides a summary of each of the ten zones in the Nevada County Sanitation District in tabular form. Table 8-2 summarizes general information about each zone. More detailed information is provided in Sections 8.4 to 8.8 of this chapter.

[2] Nevada County Sanitation District No. 1. Sewer System Management Plan. www.mynevadacounty.com. 2012.
[3] Nevada County Department of Public Works, Wastewater Division. Request for Information. 2014.
[4] Nevada County Executive Office. Nevada County Demographic and Statistical Profile, Fiscal Year 2012/2013.

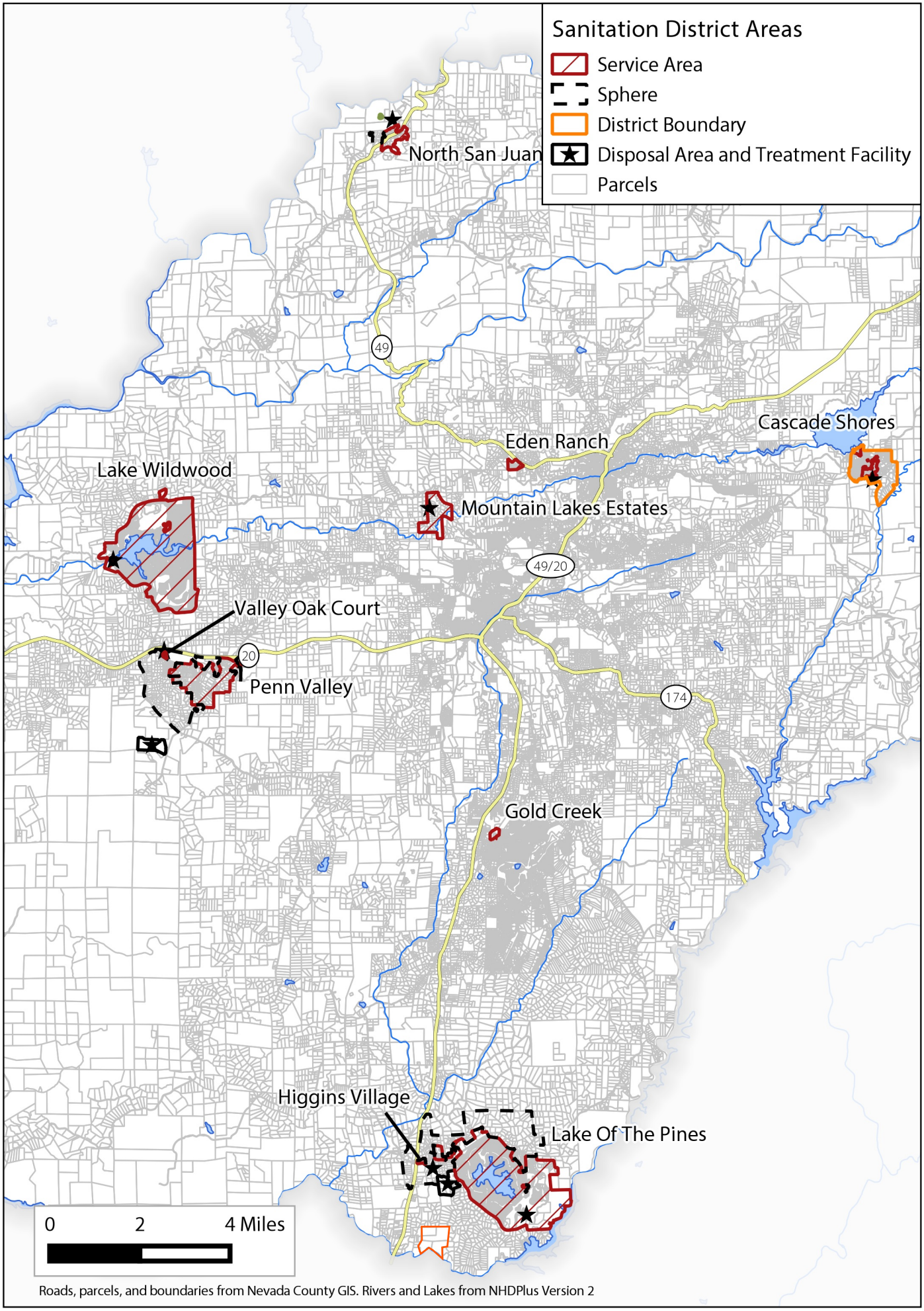


Figure 8-1 **NEVADA COUNTY SANITATION DISTRICT**

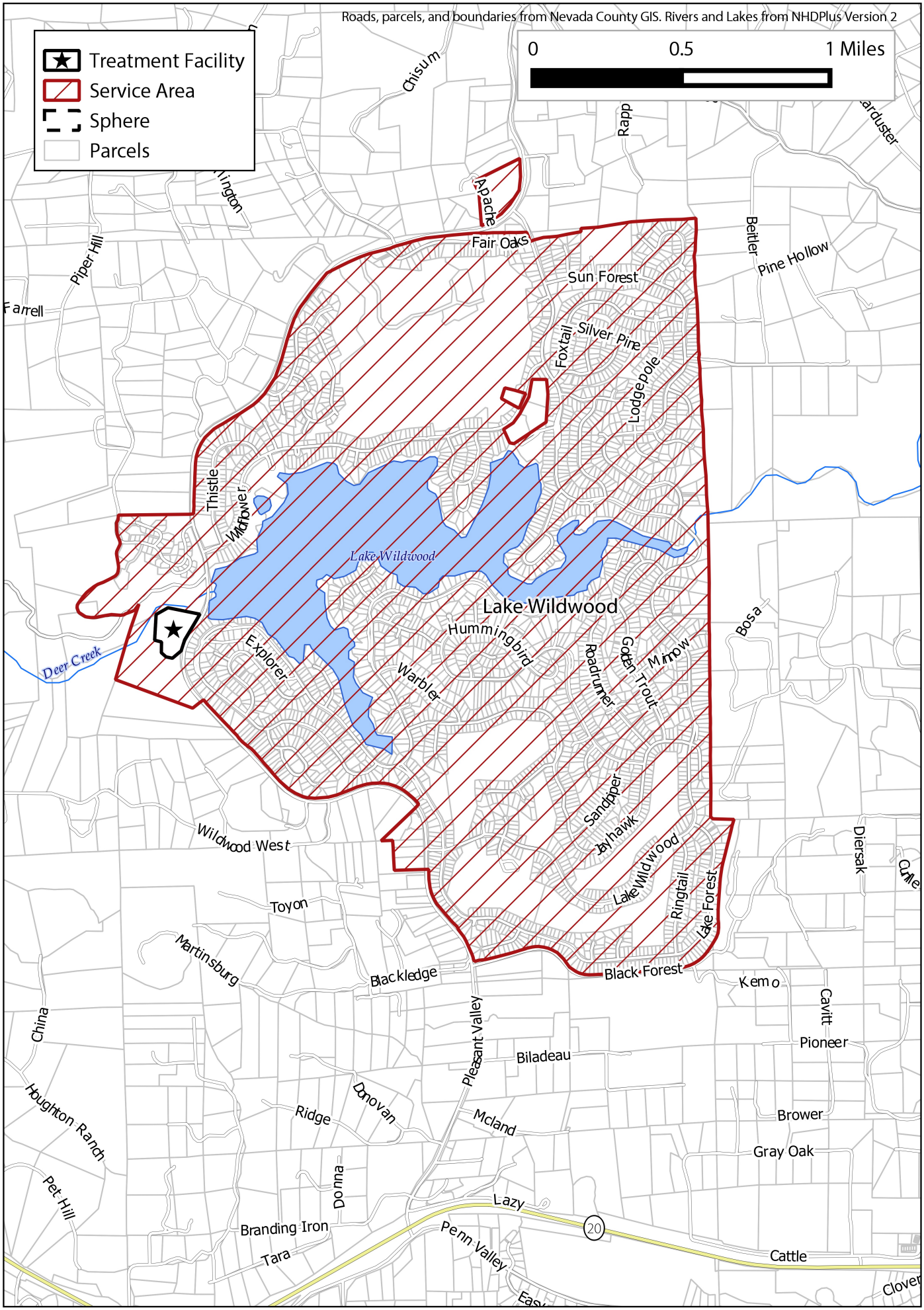


Figure 8-2

LAKE WILDWOOD, ZONE 1

NEVADA COUNTY SANITATION DISTRICT

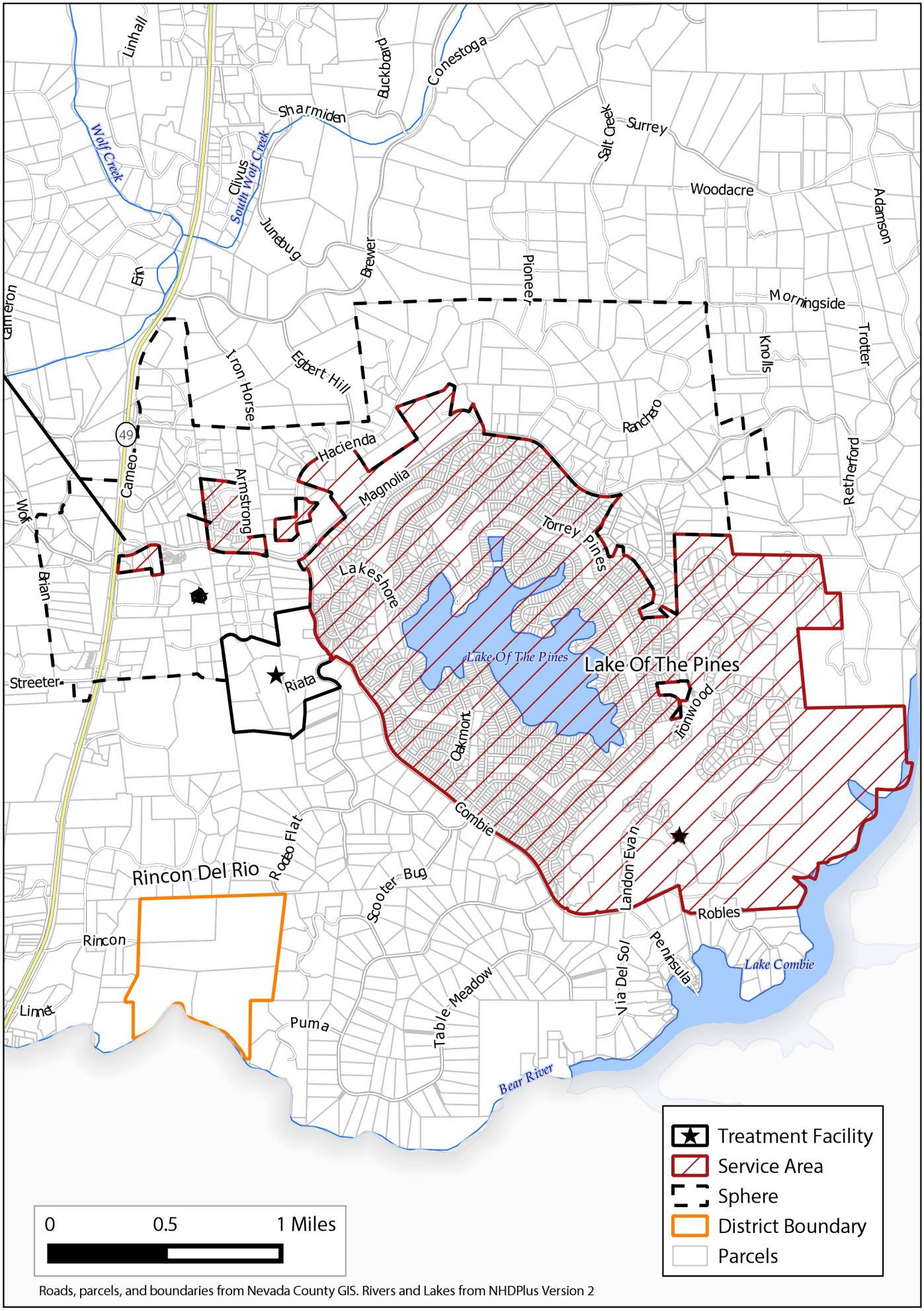


Figure 8-3

LAKE OF THE PINES, ZONE 2

NEVADA COUNTY SANITATION DISTRICT

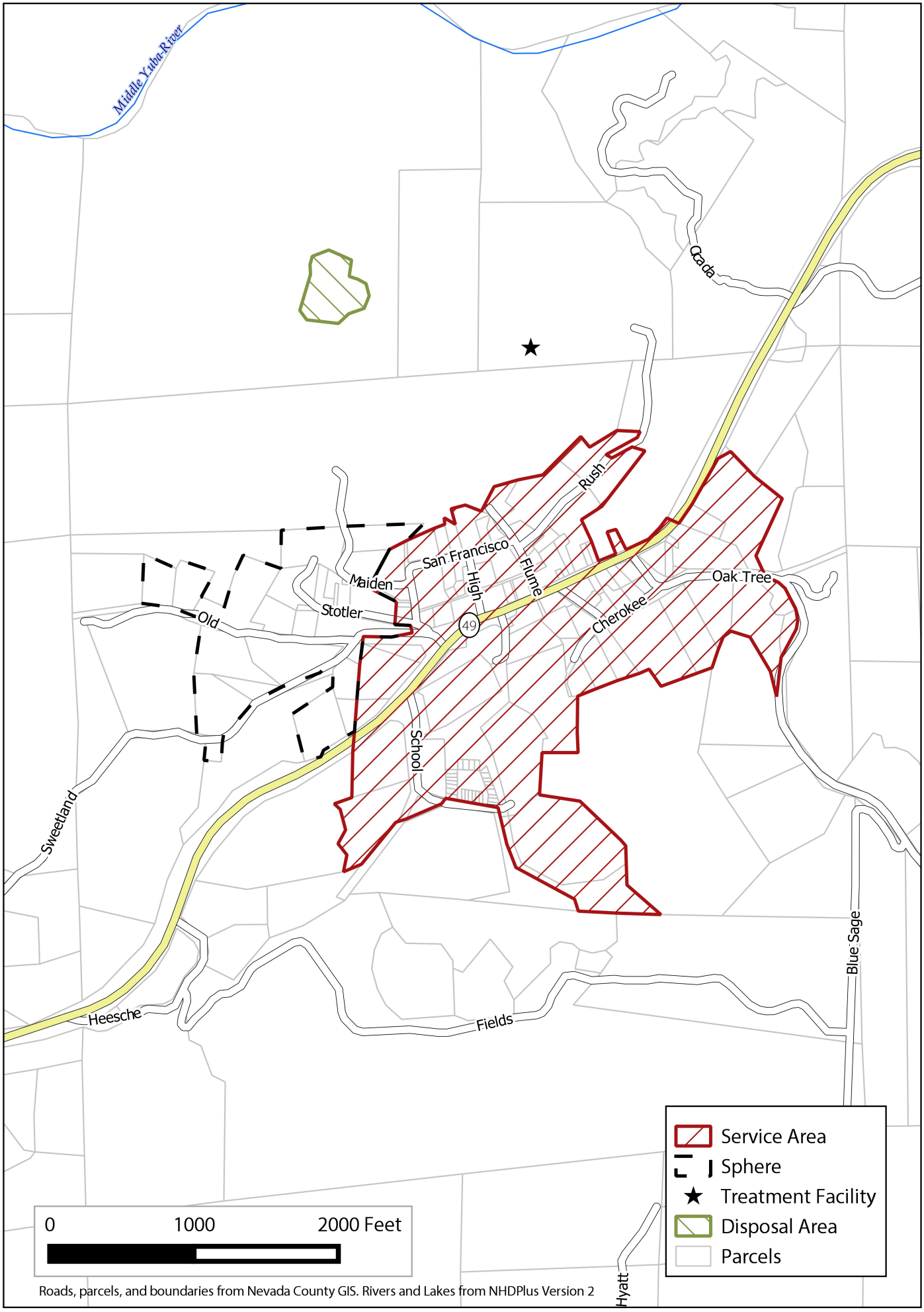


Figure 8-4

NORTH SAN JUAN, ZONE 4

NEVADA COUNTY SANITATION DISTRICT

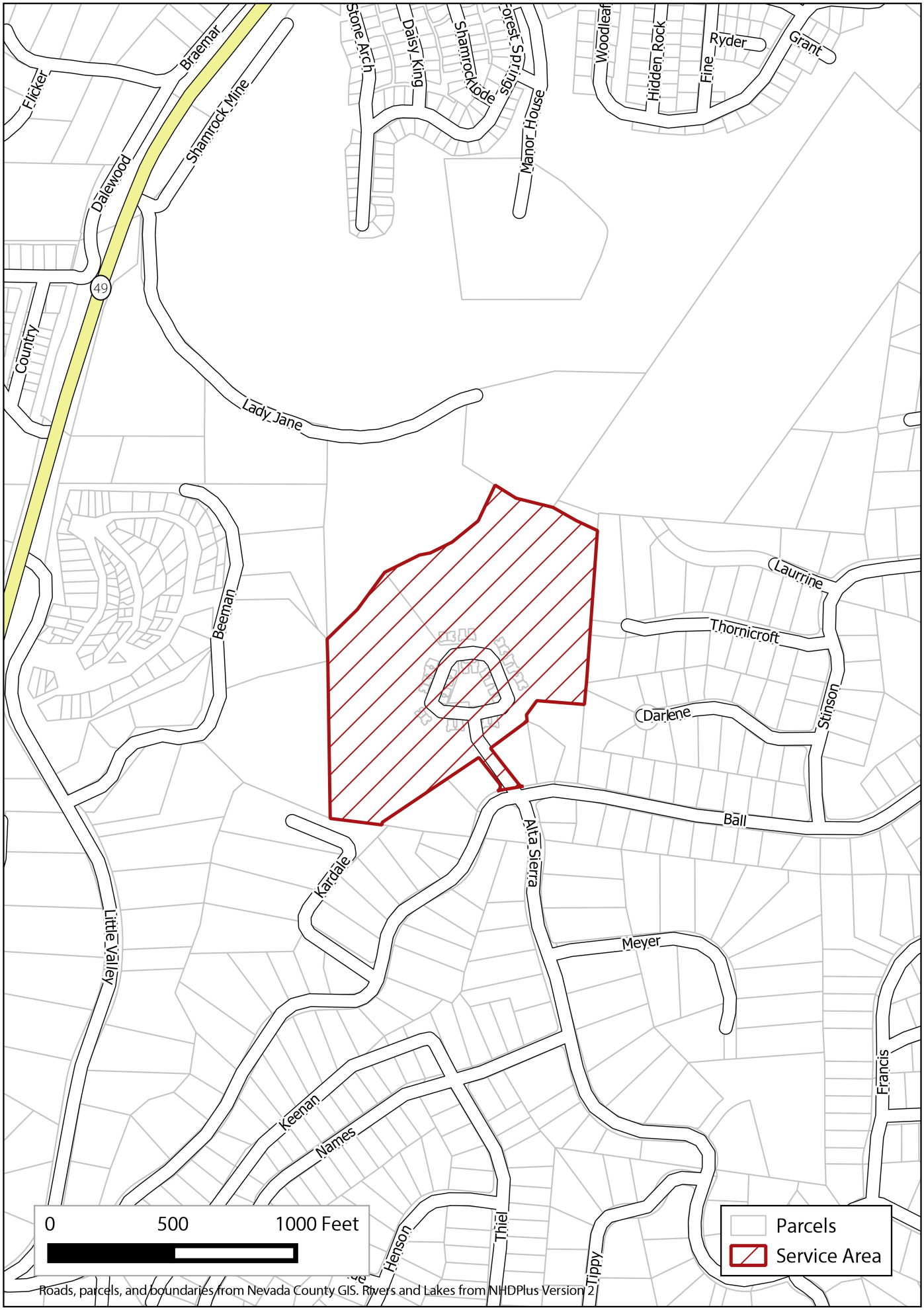


Figure 8-5

GOLD CREEK, ZONE 5

NEVADA COUNTY SANITATION DISTRICT

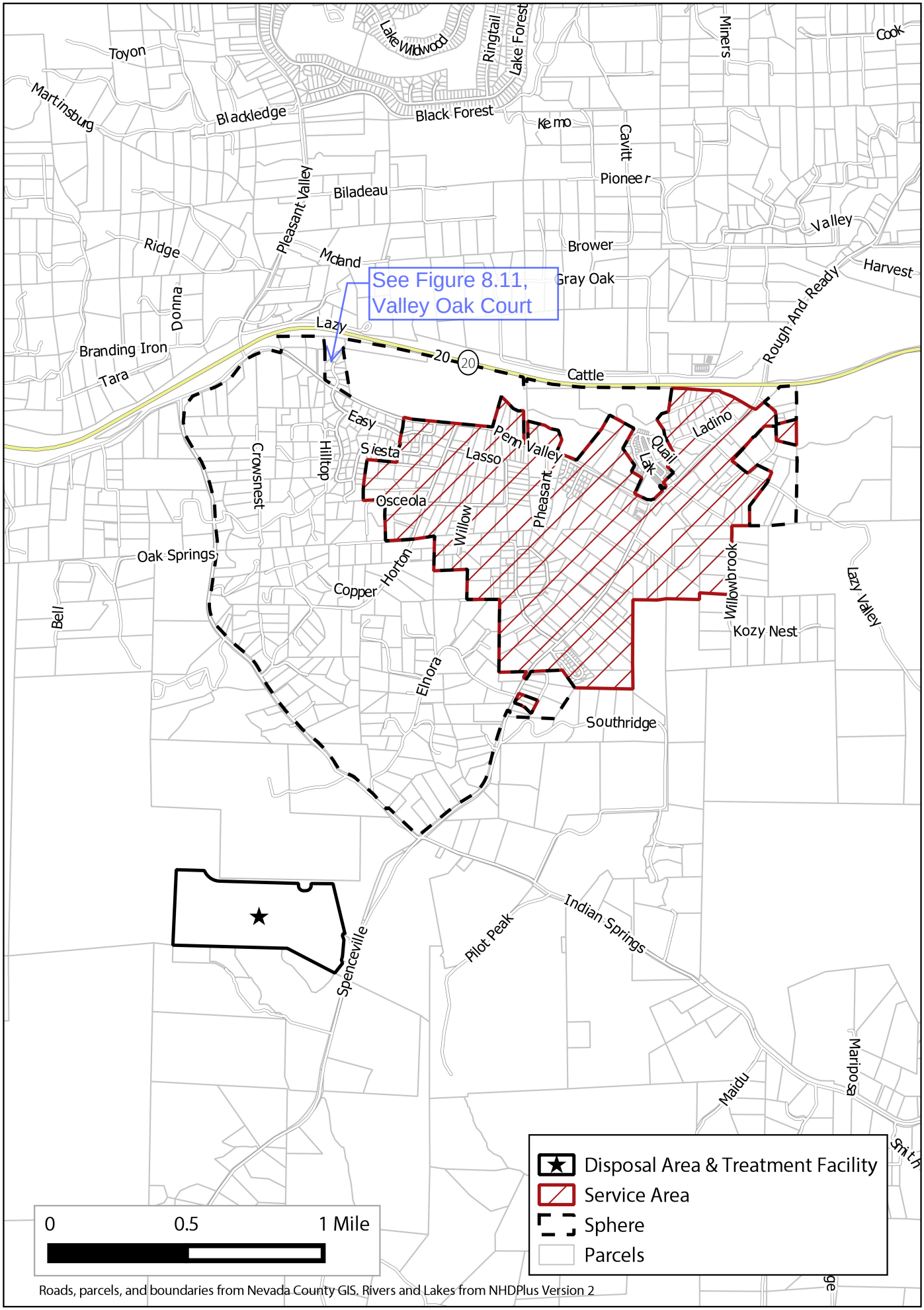


Figure 8-6

PENN VALLEY, ZONE 6

NEVADA COUNTY SANITATION DISTRICT

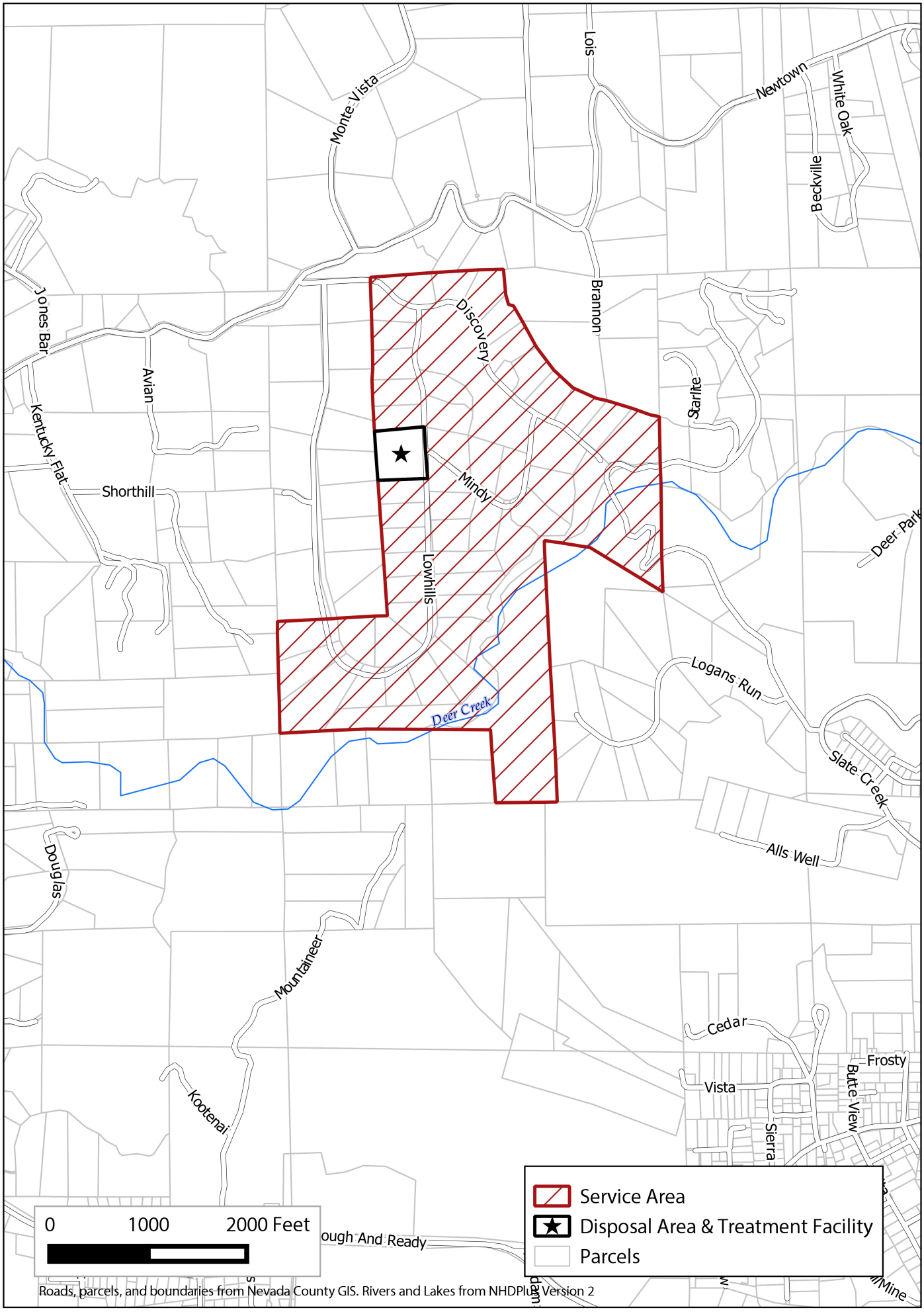


Figure 8-7

MOUNTAIN LAKES ESTATES, ZONE 7

NEVADA COUNTY SANITATION DISTRICT

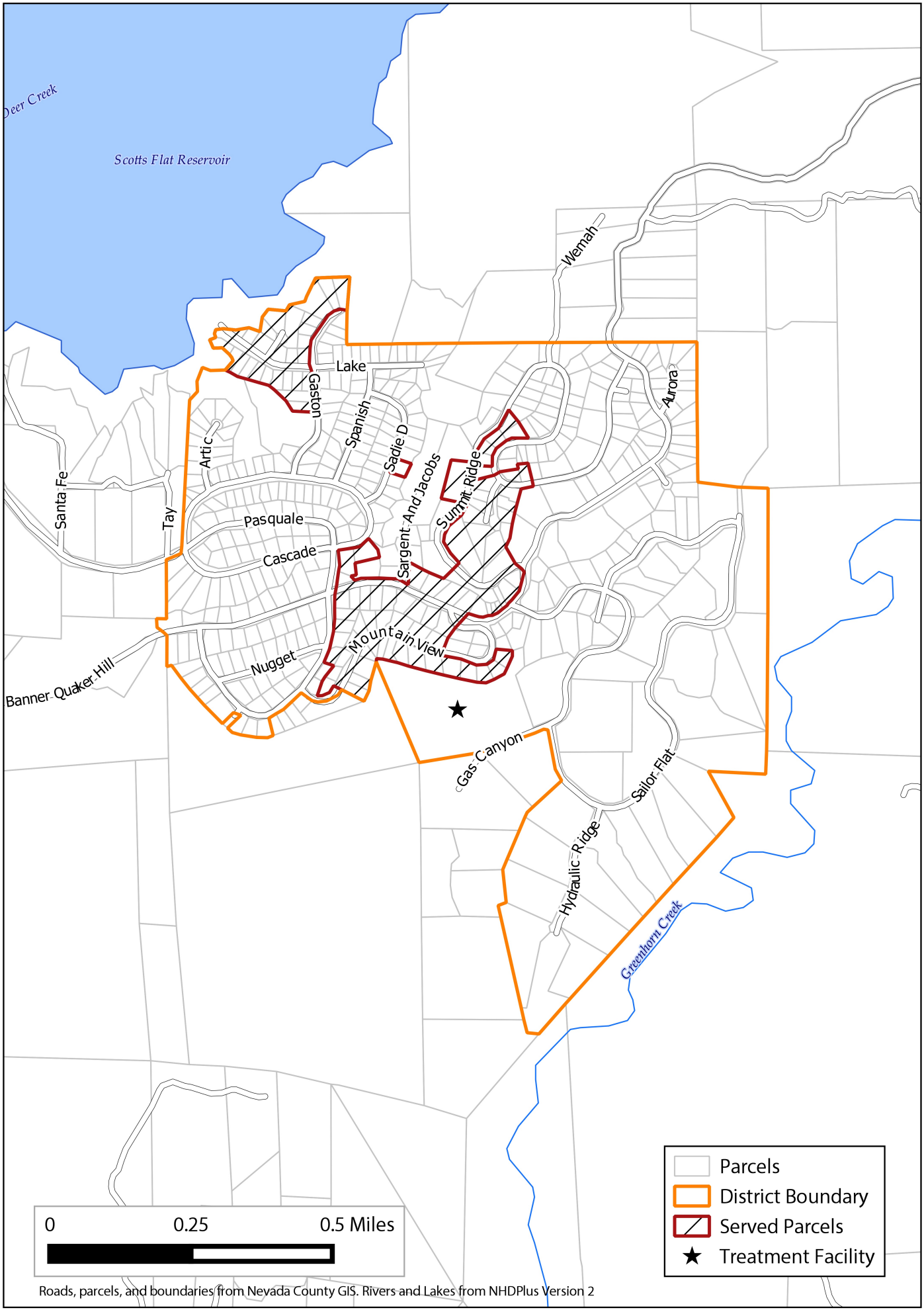


Figure 8-8

CASCADE SHORES, ZONE 8

NEVADA COUNTY SANITATION DISTRICT

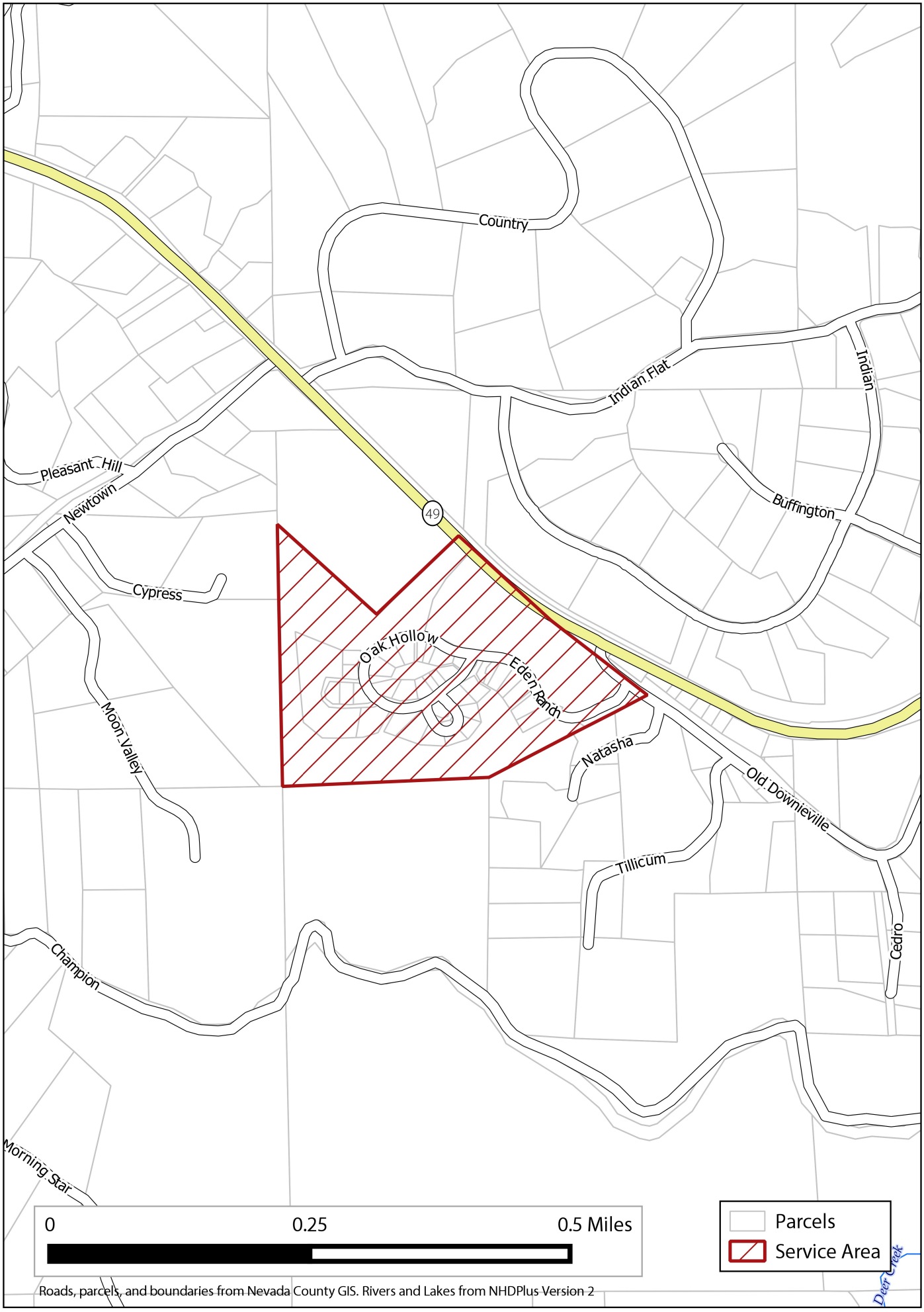


Figure 8-9

EDEN RANCH, ZONE 9

NEVADA COUNTY SANITATION DISTRICT

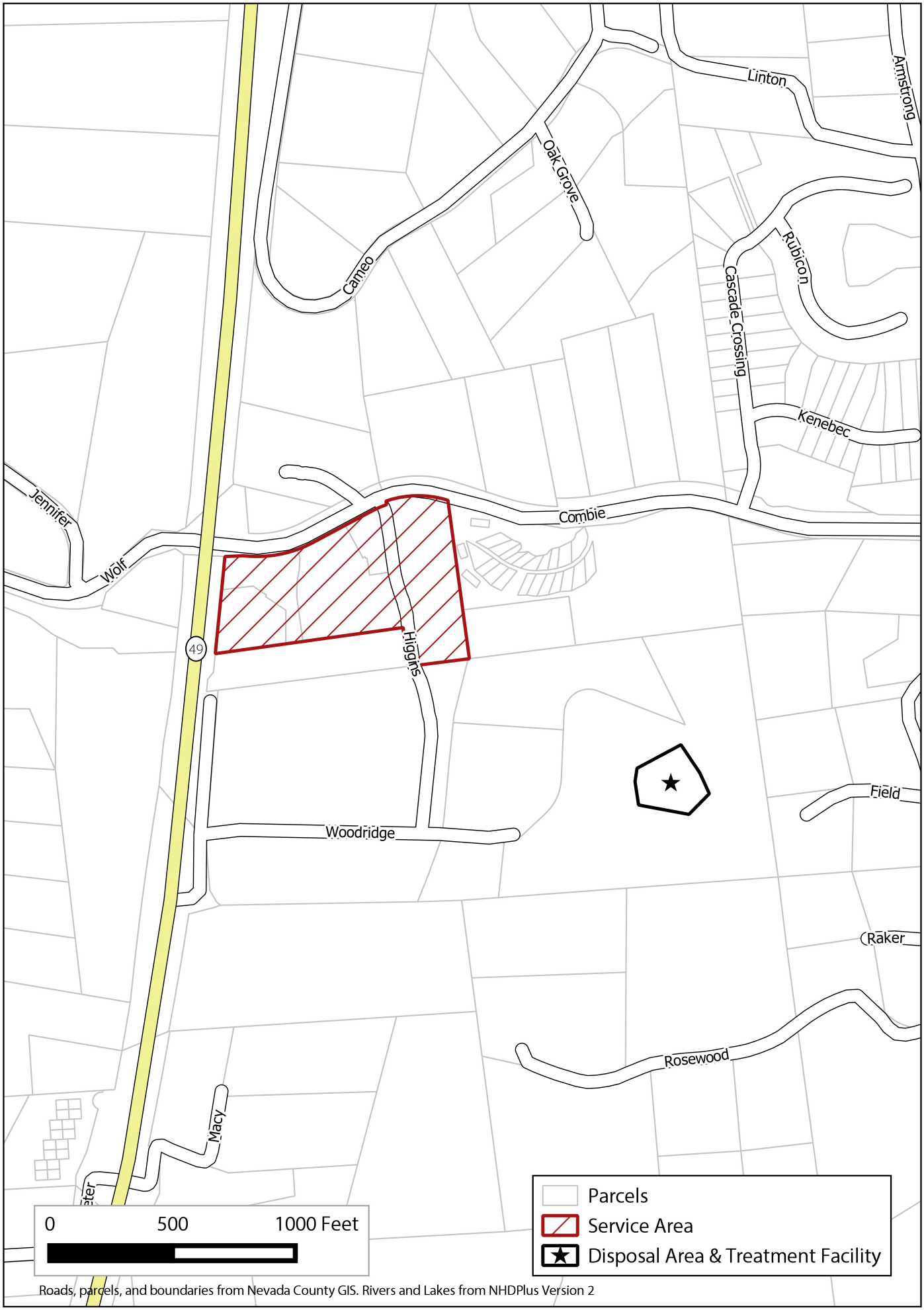


Figure 8-10

HIGGINS VILLAGE, ZONE 11

NEVADA COUNTY SANITATION DISTRICT

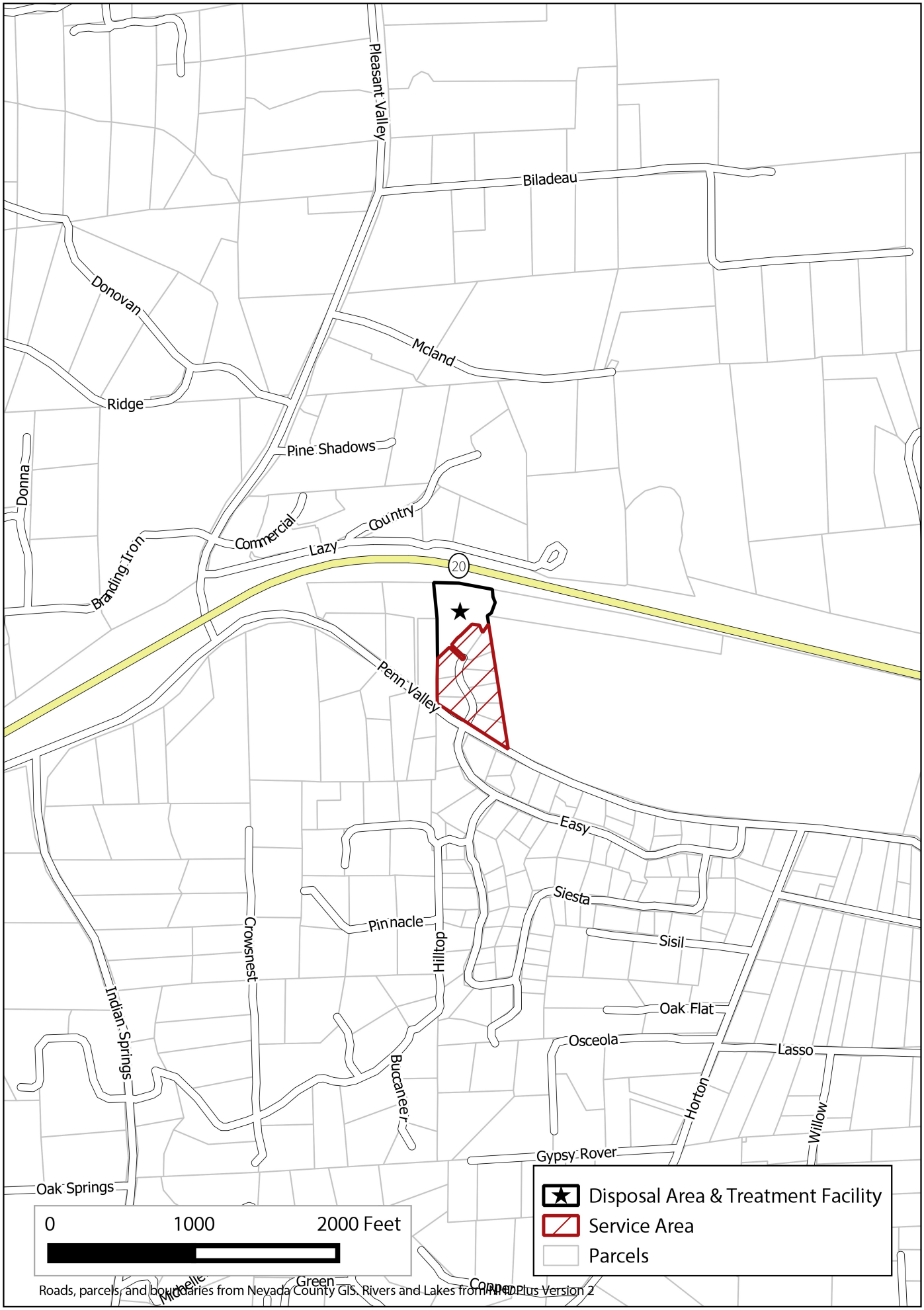


Figure 8-11

VALLEY OAK COURT, ZONE 12

NEVADA COUNTY SANITATION DISTRICT

Table 8-2: Zones At-A-Glance					
Location	Zone Acreage	Sphere of Influence	Population Served	Existing # Sewer Connections	Budget (FY 2014/2015)
Zone 1: Lake Wildwood					
The Lake Wildwood treatment facility is located within the subdivision of Lake Wildwood in the westernmost part of Nevada County, north of Highway 20 and Penn Valley. The service boundary encompasses the entire subdivision, as well as one parcel immediately adjacent to the subdivision to the north and several parcels and a smaller subdivision immediately to the west. The treatment facility is located on County-owned property immediately west of and outside the subdivision.	2,335	No exterior sphere	4,991[5]	2,916	$846,792
Zone 2: Lake of the Pines					
The Lake of the Pines treatment facility, on County-owned propert, is located in the Lake of the Pines subdivision in the southern area of Western Nevada County, east of Highway 49 near the border with Placer County. This zone serves the entire subdivision and some parcels immediately north and west of Lake of the Pines.	2,258	Exterior sphere	3,917[6]	2,090	$722,097
Zone 4: North San Juan					
The North San Juan zone services the rural community of North San Juan in the northern part of Western Nevada County, with Highway 49 serving as the spine of the sanitation zone. These treatment facilities were constructed in 1989 for the purpose of providing sewage treatment to the	121	Exterior sphere	Est. 179[7]	85	$22,229

[5] US Census Bureau. 2010 Census. American Fact Finder for Lake Wildwood CDP. factfinder2.census.gov.
[6] Ibid, for Lake of the Pines CDP.
[7] All estimated population figures are calculated using the number of EDUs minus the commercial EDUs, multiplied by the average household size for Nevada County according to the 2010 Census (2.35).

Table 8-2: Zones At-A-Glance					
Location	Zone Acreage	Sphere of Influence	Population Served	Existing # Sewer Connections	Budget (FY 2014/2015)
residents and businesses of North San Juan.					
Zone 5: Gold Creek					
The Gold Creek treatment facility serves a condominium complex of 44 units immediately north of the Alta Sierra subdivision. No standby or unallocated EDUs are available at this facility as there is no anticipated growth within the development.	22.3	No exterior sphere	Est. 103	44	$11,703
Zone 6: Penn Valley					
The Penn Valley facility serves the rural unincorporated community of Penn Valley, centered along Penn Valley Drive south of Highway 20 and Lake Wildwood. The treatment facility and disposal area are approximately one mile south of the service area.	599	Exterior sphere	Est. 783	347	$124,379
Zone 7: Mountain Lake Estates					
The Mountain Lake Estates zone is located south of Newtown Road off Lowhills Road, west of Nevada City and about two miles southwest of Highway 49. The disposal area and treatment facility are both located within the subdivision.	253	No exterior sphere	Est. 94	40	$12,800
Zone 8: Cascade Shores					
This zone is located six miles east of Nevada City and on Scotts Flat Reservoir. The treatment facility is located in the southern area of the subdivision.	66.1	No exterior sphere	Est. 202	86	$148,507
Zone 9: Eden Ranch					
The Eden Ranch zone is located southwest of Highway 49, north of Nevada City, off Eden Ranch Road and Oak Hollow Circle.	35.9	No exterior sphere	Est. 64	27	$11,088
Zone 11: Higgins Village					

Table 8-2: Zones At-A-Glance					
Location	Zone Acreage	Sphere of Influence	Population Served	Existing # Sewer Connections	Budget (FY 2014/2015)
This zone is located in the Lake of the Pines area, west of the Lake of the Pines subdivision and east of Highway 49 in the southern part of Nevada County.	10.7	No exterior sphere	0 (all commercial)	47.8	$28,779
Zone 12: Valley Oak Court					
This zone is located north of Penn Valley Drive and south of Highway 20, in the community of Penn Valley.	5.9	No exterior sphere	Est. 12	5	$3,365

8.3 FORMATION AND BOUNDARY

Nevada County Sanitation District No. 1 was formed on August 2, 1965, (Nevada County Board of Supervisor's Resolution BOS Res. 65-135) to provide for construction, operation, and maintenance of the Glenbrook Sewer Assessment District. The City of Grass Valley now operates, maintains, and administers the Glenbrook zone through an agreement with the District adopted on November 26, 1968, (Sanitation District Resolution SD Res. 68-4). This agreement was later amended by SD Res. 69-1 on March 18, 1969. An agreement dated March 1, 1972, (SD Res. 72-1) between the District and Nevada County directs County staff to provide operation, maintenance, and administration of all the District's facilities except the Glenbrook zone. This original agreement was supplemented by two subsequent agreements adopted in 1973 (SD Res. 73-12) and 1988 (SD Res. 88-6).

The next zone, Lake Wildwood, was annexed into the District on June 23, 1970 (SD Res. 70-1), and was followed by the Lake of the Pines zone on June 13, 1972 (SD Res. 72-3). Over the years, nine more zones (Kingsbury Greens, North San Juan, Gold Creek, Penn Valley, Mountain Lakes Estates, Cascade Shores, Eden Ranch, Higgins Village, Dark Horse, and Valley Oak Court) were annexed into the District. Kingsbury Greens was detached from the District in 1995, and Dark Horse was merged with Lake of the Pines in 2009.

On May 12, 1992, (SD Res. 92-7) the Sanitation District Advisory Committee was formed by the District Board to provide a vehicle for District zone customers to formally communicate their recommendations to the District Staff and Board of Directors. The Committee's activities include the annual review and recommendation of the proposed District budgets and sewer charges to the Board.

Each Zone has a sphere of influence. Three zones have spheres larger than their boundaries and may have growth: Penn Valley (soon merging into Lake Wildwood), Lake of the Pines, and North San Juan (which might have additional capacity to accept more customers). In 2009 LAFCo approved sphere of influence updates that included encompassing Higgins Village and Dark Horse in the Lake of the Pines sphere of influence. Dark Horse has since been incorporated into the Lake of the Pines zone as previously mentioned, and Higgins Village may be incorporated at a later date. [8]

8.4 GOVERNMENT STRUCTURE AND ACCOUNTABILITY

Governance of the Nevada County Sanitation District is provided by the Nevada County Board of Supervisors (BOS) acting in their capacity as the Board of Directors of the Sanitation District.

The County BOS is a five-member Board, elected by Supervisorial districts to four-year terms. Chair and Vice-Chair are elected by the Board to one-year terms.

There have been no contested elections in the past five years. The current BOS is as follows:

[8] Nevada Local Agency Formation Commission. Sphere of Influence Updates: Nevada County Sanitation District No. 1 and Kingsbury Greens Community Services District. 2009.

Name	Role	Term	Compensation
Nate Beason	District 1 Supervisor, Chair	2005-2016	$41,419
Ed Scofield	District 2 Supervisor, Vice Chair	2009-2016	$39,477
Dan Miller	District 3 Supervisor	2015 – 2019	$39,477
Hank Weston	District 4 Supervisor	2015 – 2019	$39,477
Richard Anderson	District 5 Supervisor	2013-2016	$39,477

Board member travel expense claims are placed on the BOS meeting agenda and need approval from the full BOS. County/District staff are paid per the County's compensation and benefits summaries, available at www.mynevadacounty.com/nc/hr/Pages/Memoranda-of-Understanding-(MOUs).aspx.

The BOS meets on the second and fourth Tuesday of the month at 9:00 a.m. in the Board Chambers at 950 Maidu Avenue, Nevada City, CA 95959. All meetings are open to the public and notices are publicly posted at least 72 hours prior to the meetings in accordance with the Brown Act (Government Code §§ 54950-54926). The agenda for each Board meeting includes a public comment period. Agendas are distributed via the County's website, fax, email and postal mail. The media is notified via email. The local newspaper (The Union) also publishes meeting notices. The website (www.mynevadacounty.com) is a communication vehicle for County meeting agendas, meeting minutes, and information on the Agency's services and programs. The County attorney is often present at meetings to ensure compliance with the Brown Act, the conflict-of-interest regulations set forth in the Political Reform Act (Government Code § 81000 et seq.), and other applicable laws. There is no record of violations of any of the government code sections listed above.

The County's relationship to the District and its operation is in accordance with California Health and Safety Code §§ 4700 through 4858. District policies and procedures have been established by ordinances adopted by the District Board of Directors. These ordinances were compiled into a code format and adopted by the District Board (SD Ordinance 28 effective February 9, 1995), now known as the Nevada County Sanitation District No. 1 Sanitation Code. All other District actions are adopted by resolution. The District has adopted comprehensive personnel policies and has allocated resources for improvements in mandatory programs, and facilities and technology.

During the preparation of this report the Nevada County Sanitation District No. 1 provided comprehensive information regarding the management structure and mission statement, as well as detailed budgets for all zones of the District.

Nevada County's website is established for communication with the public and for interagency communication and coordination. Budget forms are available for employees, and other information to maintain communication and coordination within the agency is also posted. No issues were noted or reported regarding interdepartmental relations, communication or coordination.

The Sanitation District maintains a hotline number (530-265-1555) in event of sewer emergencies such as sewer system overflows (SSOs). This line is answered by District personnel during the day and call-out answering service after business hours and weekends. The District has adopted formal procedures for

handling reports of SSOs for District collection systems, including an established chain of communication and other formal procedures.

8.5 MANAGEMENT EFFICIENCIES AND STAFFING

The Nevada County Department of Transportation and Sanitation provides employees to the Nevada County Sanitation District No. 1 through agreements between Nevada County and the Nevada County Sanitation District No. 1.

As previously mentioned, the Nevada County Board of Supervisors is also the Sanitation District's Board of Directors. The Public Works Director is under the direction of the Board of Directors, and manages several divisions within Public Works, one of which is the Sanitation Division. The head of the Sanitation Division is the Wastewater Operations Manager. Three general departments are under the direct supervision of the Wastewater Operations Manager: collections (including maintenance, construction and repair of collection facilities), operations of treatment plant facilities, and electrical and mechanical maintenance of treatment plant and collection facilities and equipment. A full-time laboratory coordinator performs compliance tests and implements environmental monitoring programs. Table 8-3 summarizes the type of personnel and their workload.

Table 8-3: Personnel Summary

Sanitation District Wastewater Function	FTE as of July 1, 2013
Management	1
Administration	0.5
Wastewater Operations and Maintenance	17
Other: Lab Coordinator	1
Total FTE	**19.5**

A more detailed description of each position is provided below, followed by an organizational chart.

Director of Public Works is under the administrative direction of the Board of Directors and is in charge of the operations, functions and administrative affairs of the District, and represents the Board's policies and programs with employees, community organizations and the general public.

Wastewater Operations Manager plans, organizes, directs and reviews the technical activities and operations of the Sanitation District. Can certify spill reports.

Wastewater Collection Supervisor plans, organizes, schedules, assigns and reviews the work of field crews in a variety of skilled and semi-skilled activities in general construction, repair and maintenance of wastewater collection system facilities, and has primary responsibility for the operation of equipment. Can certify spill reports.

Wastewater Service Workers (Collections System Operators) routinely monitor, maintain, adjust, and clean sewer pipes or lift stations in order to prevent spills, and to ensure the smooth operation of the

collection and storage systems. Monitors reservoirs, tanks, and retention ponds. Responds to customer's problems/complaints, and auto dialer alarms.

Plant Operations Supervisor organizes, directs and coordinates the activities of the Operations Department including the operation of the District's laboratory. Coordinates operation, and regulatory activities with other divisions and departments; and provides staff assistance.

Laboratory Coordinator performs routine lab testing (physical, biological, chemical, microbiological) to comply with federal regulations; implements environmental monitoring programs and facilities process controls for environmental, watershed, water, solids or wastewater.

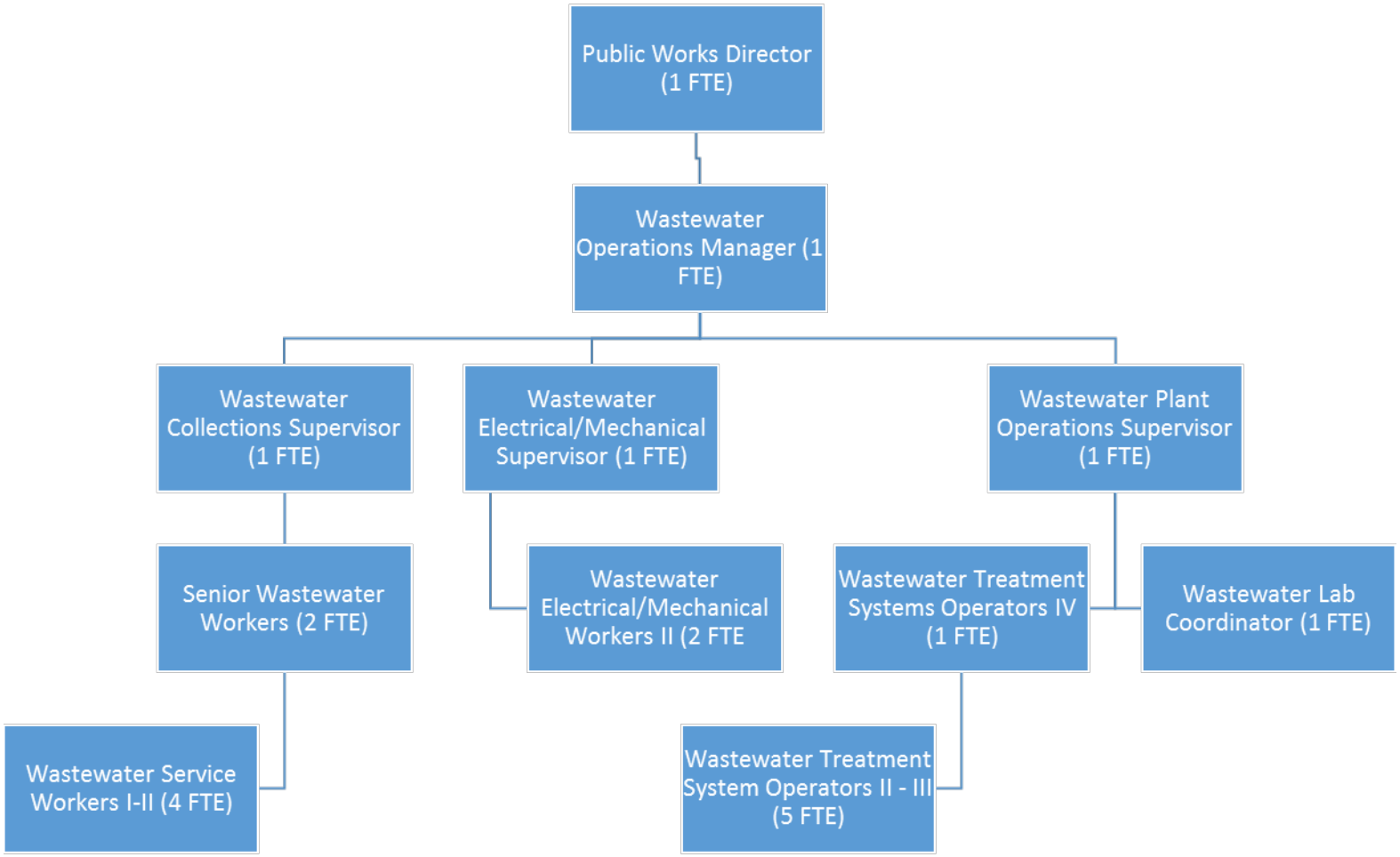
Electrical/Mechanical Supervisor and Electrical/Mechanical Workers perform electrical repair of pump stations and support Collection System Workers on mechanical repair if needed.

The District provides staffing with appropriate training and background, as follows:

- Wastewater collection system maintenance staff with background and/or training in plumbing, pipeline maintenance and repair, and pump station maintenance and repair.
- State-certified wastewater treatment operations staff with background and/or training in treatment and disposal facilities operation, maintenance, repair, and laboratory testing in State certified laboratories.
- Wastewater electrical/mechanical staff with background and/or training in motors, controls, pumps, and generators that provides support to both wastewater collections system maintenance and treatment operations.
- Appropriate training, tools, equipment, and vehicles.
- Administrative, management, financial, clerical, and engineering support staff to facilitate and support the wastewater collection system maintenance, treatment and disposal facilities operation, and electrical/mechanical functions.

Sanitation Division staff are heavily utilized, and there appears to be no excess of labor at this time.

Figure 8-12. Organizational Chart for Nevada County Sanitation District No. 1



Source: Department of Public Works, Wastewater Division. FY 2014/2015 Org Chart.

8.6 POPULATION AND GROWTH

As shown in Table 8-1, there are currently 5,687.8 connected EDUs in Nevada County Sanitation No. 1, 5,473 of which are residential. Approximately 10,000 people are currently served by the District, in addition to a number of commercial enterprises. In addition, 2,157 EDUs are reserved or unallocated. The District therefore has significant capacity for additional EDUs. Table 8-4 estimates population and potential population using available EDUs in the various EDUs. Table 8-5 provides an at-a-glance look at the design capacity versus peak flows.

Zone 1 – Lake Wildwood

Population

Lake Wildwood is a gated residential community with some commercial development outside the subdivision proper. It is also a census-designated place (CDP) and has therefore been tracked during the past US Censuses. According to Census documents the population increased between 2000 and 2010, rising from 4,868 to 4,991. There are currently 2,916 connected EDUs in the Lake Wildwood zone, 62 of which are commercial.

Projected Growth and Development

Projected growth within the Lake Wildwood zone will come from two areas: Penn Valley (Zone 6), which the Sanitation District plans to merge into the Lake Wildwood zone, and remaining lots that have yet to be built out within the Lake Wildwood subdivision. There are currently 652 reserve EDUs and 732 unallocated EDUs in Lake Wildwood.

The Lake Wildwood treatment facility is designed for 1.12 MGD during wet weather and 0.69 MGD during dry weather. Average dry weather flows are 0.38 MGD, well under the design capacity. A flow study conducted by Kennedy/Jenks Consultants in 2011 determined that Lake Wildwood is sized to meet anticipated growth for the next five to ten years in the Lake Wildwood and Penn Valley areas.[9]

[9] Kennedy/Jenks Consultants. Lake Wildwood WWTP Process and Hydraulic Modeling. June 20, 2011.

Table 8-4: Population, Growth, and DUC Status					
Zone	Name	Population	Population Potential[10]	Additional EDUs Available/ Change in status	DUC
1	Lake Wildwood	4,991[11]	8,243	• 1,384 additional EDUs available (=3,252 people) • Will annex Zones 6 and 12 in 2015-2016	No
2	Lake of the Pines	3,917[12]	5,320	• 597 additional EDUs available (=1,403 people) • Will annex Zone 11 in the long-term	No
4	North San Juan	Est. 179[13]	247	• 29 standby EDUs (=68 people)	Yes
5	Gold Creek	Est. 103	103	• None	No
6	Penn Valley	Est. 783	1,044	• Annexation into Zone 1 anticipated in 2015-2016 • 111 standby EDUs (= 261 people)	Yes
7	Mountain Lake Estates	Est. 94	108	• 6 standby EDUs (= 14 people)	No
8	Cascade Shores	Est. 202	247	• 19 standby EDUs (=45 people)	No
9	Eden Ranch	Est. 64	78	• 6 additional EDUs (=14 people)	No
11	Higgins Village	0 (all commercial)	0	• Annexation into Zone 2 anticipated in long-term	No
12	Valley Oak Court	Est. 12	24	• Annexation into Zone 6 anticipated in 2015-2016 • 5 standby EDUs (=12 people)	No

[10] Methodology: Uses additional EDUs to determine and assumes worst-case scenario of all EDUs as residential connections.
[11] US Census Bureau. 2010 Census. American Fact Finder for Lake Wildwood CDP. factfinder2.census.gov.
[12] Ibid, for Lake of the Pines CDP.
[13] All estimated population figures are calculated using the number of EDUs minus the commercial EDUs, multiplied by the average household size for Nevada County according to the 2010 Census (2.35).

Table 8-4: Population, Growth, and DUC Status					
Zone	Name	Population	Population Potential[10]	Additional EDUs Available/ Change in status	DUC
Totals		**Est. 10,345** (current population served)	**5,069** (estimated additional population to be served)		

Table 8-5: Treatment Capacity				
Zone	Name	Design capacity (mgd)	Average flow volume (mgd)	Peak flow within last year (mgd)
1	Lake Wildwood	1.12	0.38	0.53
2	Lake of the Pines	.55	0.523	1.339
4	North San Juan	0.024	0.012	0.015
5	Gold Creek	0.015	N/A	N/A
6	Penn Valley	0.1256	0.0897	0.1915
7	Mountain Lake Estates	0.0087	N/A	N/A
8	Cascade Shores	0.0265	0.0127	0.01502
9	Eden Ranch	0.0062	0.0015	N/A
11	Higgins Village	0.0119	0.006	N/A
12	Valley Oak Court	10 EDUs	N/A	N/A

Disadvantaged Unincorporated Communities

As described in Chapter 3 *Introduction*, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Lake Wildwood area. Neither Lake Wildwood nor adjacent areas are identified as DUCs. The 2008-2012 American Community Survey 5-year Estimates found the median income for a household (MHI) in Lake Wildwood was $66,438.[14] This is higher than the DUC threshold MHI of less than $48,706 (80 percent of the statewide MHI).

Zone 2 – Lake of the Pines

Population

Lake of the Pines is also a CDP per the US Census Bureau, and is a gated residential community. The population decreased from 3,956 in 2000 to 3,917 in 2010 according to Census documents. There are currently 2,090 connected EDUs in the Lake of the Pines zone, 80 of which are commercial and the remainder of which are residential.

Projected Growth and Development

Projected growth in Lake of the Pines is expected to come from the merging of the Higgins Village zone (which by the time of merging will have gained EDUs from Higgins Marketplace, a new development) into the Lake of the Pines zone, potentially new development one mile south (Rincon del Rio), and continued buildout of the remaining lots within Lake of the Pines.

The Lake of the Pines WWTP has a plant design flow of 0.55 MGD and a present average dry weather flow of 0.523 MGD. Although average flows are closely approaching the design flow limitations and peak flows far exceed them at 1.339 MGD, Lake of the Pines has a bypass system in place that diverts wastewater flow to ponds and then brings it back for treatment later. Additionally, according to Sanitation District staff, Lake of the Pines is sized to meet anticipated growth for the next five to ten years.

Disadvantaged Unincorporated Communities

As described in Chapter 3 *Introduction*, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Lake of the Pines area. Neither Lake of the Pines nor adjacent areas are identified as DUCs. The 2008-2012 American Community Survey 5-year Estimates found the median income for a household (MHI) in Lake of the Pines was $84,531.[15] This is higher than the DUC threshold MHI of less than $48,706 (80 percent of the statewide MHI).

[14] US Census Bureau. American Fact Finder. factfinder2.census.gov.
[15] US Census Bureau. American Fact Finder. factfinder2.census.gov.

Zone 4 – North San Juan

Population

North San Juan is also a CDP, and the 2010 Census found that the population was 269. Currently, there are 85 connected EDUs in the North San Juan zone, 9 of which are commercial. Therefore, the population within the North San Juan zone is estimated at approximately 179 (residential EDUs multiplied by 2.35 [average household size in Nevada County]).

Projected Growth and Development

According to the North San Juan Rural Center Area Plan, the rural center is not anticipated to expand; however, uses within the rural center have a flexible zoning designation which allows and encourages a mix of uses. Currently, the area consists mainly of commercial and residential uses. North San Juan has 85 connected EDUs and 29 reserve EDUs. There are currently no plans to expand the wastewater treatment system to provide EDUs, so significant growth in the immediate future is unlikely. The North San Juan treatment facility has a design flow of 0.024 MGD and a present dry weather average flow of 0.012. With a peak flow of 0.015 MGD, this plant has sufficient capacity at the present time and for additional growth of the reserve EDUs into the short-term future.

Disadvantaged Unincorporated Communities

As described in Chapter 3 *Introduction*, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the North San Juan area, and North San Juan has been identified as a DUC. The 2008-2012 American Community Survey 5-year Estimates found the median income for a household (MHI) in North San Juan was $28,500.[16] This is lower than the DUC threshold MHI of less than $48,706 (80 percent of the statewide MHI). North San Juan also meets the definition of a legacy community per SB 244, and the Department of Water Resources has identified North San Juan as a DUC.

Zone 5- Gold Creek

Population

Gold Creek is not a CDP, so no Census data is availability for this area. However, the population can be estimated at around 103 (44 residential units multiplied by 2.35, the average household size in Nevada County during 2010 US Census).

Projected Growth and Development

There are no reserve or unallocated EDUs in the Gold Creek system, and the District does not maintain records on wastewater capacity for the Gold Creek zone. However, the Gold Creek zone is not expected

[16] US Census Bureau. American Fact Finder. factfinder2.census.gov.

to grow given that the sewer system was designed specifically for the Gold Creek condominium complex, and all units within the complex have been constructed.

Disadvantaged Unincorporated Communities

As described in Chapter 3 Introduction, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Gold Creek area. Neither Gold Creek nor adjacent areas are identified as DUCs because Gold Creek is not a CDP, and no Census figures were available for this area. Similar to Eden Ranch, Cascade Shores, and Mountain Lake Estates, Gold Creek is not considered a "community" in the context of Nevada County but is simply a small subdivision of homes without integrated support services such as schools, parks, jobs, and commercial development.

Zone 6 – Penn Valley

Population

Penn Valley is a CDP with a population of 1,621 as of the 2010 Census. However, within the Penn Valley sanitation zone, the population is estimated at 783 (333 residential connections multiplied by 2.35, the average household size in Nevada County). The Penn Valley sewer system services 347 connections, 14 of which are commercial.

Projected Growth and Development

Penn Valley is a small rural community dominated by residential, commercial, recreational, and agricultural uses. The "village center," an area at the center of the CDP studied by the Nevada County Planning Department in the Penn Valley Village Center Area Plan, contains a 120-unit mobile home park, a community shopping center, a business park, an elementary school, and firehouse, as well as scattered single-family residential homes. Adjacent to the village center is Western Gateway Park, an 80-acre regional park. The Penn Valley area contains tracts of land that may be developed under current zoning with higher residential density, business park, or commercial uses. The area therefore is anticipated to grow and develop into the future, though one of the goals of the Village Center Area Plan is to protect the agricultural and rural nature of the area.[17]

Among existing uses, the mobile home park may be connected to the Penn Valley sewer within the next three to five years.

Currently, however, there is currently a development moratorium area in Penn Valley based on the lack of capacity in the treatment system. The Penn Valley WWTP has a design flow of 0.1256 MGD and a present average dry weather flow of 0.0897 MGD. Peak flow in the last year was 0.1915 MGD. On days when the flow is higher than treatment capacity, wastewater does not receive treatment. Capacity is compromised during extended periods of precipitation as rain increases the level of the storage basin.

[17] Nevada County. Penn Valley Village Center Area Plan. 2000.

The Sanitation District has been awarded a $5 million grant from the RWQCB to fund pipeline construction from Penn Valley to Lake Wildwood, during which the pipeline will also tie into Zone 12, Valley Oak Court.[18] This aggregation of zones will facilitate the resolution of water quality and treatment issues at the Penn Valley WWTP, and will release the current development moratorium in the service area.

Disadvantaged Unincorporated Communities

As described in Chapter 3 *Introduction*, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Penn Valley area, and Penn Valley was identified as a DUC. The 2008-2012 American Community Survey 5-year Estimates found the median income for a household (MHI) in Penn Valley was $41,855.[19] This is lower than the DUC threshold MHI of less than $48,706 (80 percent of the statewide MHI). It is also considered a legacy community under SB 244, which is a geographically isolated community that is inhabited and has existed for at least 50 years.

Zone 7 – Mountain Lake Estates

Population

Mountain Lake Estates is not a CDP, but with 40 residential units currently connected to the sewer system, the estimated population is 94 (2.35 [average household size in Nevada County] multiplied by 40 units). Six EDUs are also on reserve.

Projected Growth and Development

The Mountain Lake Estates system was designed to serve only the Mountain Lake Estates subdivision. The Mountain Lake Estates WWTP serves 40 EDUs, with 6 EDUs in reserve. No additional growth or development is therefore anticipated beyond the six additional connections available.

Disadvantaged Unincorporated Communities

As described in Chapter 3 Introduction, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Gold Creek area. Mountain Lake Estates is not identified as a DUC because it is not a CDP, and no Census figures were available for this area. Mountain Lake Estates is not considered a "community" in the context of Nevada County but is simply a small subdivision of homes without integrated support services such as schools, parks, jobs, and commercial development. Zone 8 – Cascade Shores

[18] KNCO, Penn Valley Wastewater Grant Approved, knco.com/penn-valley-wastewater-grant-approved/, 19 May 2014.
[19] US Census Bureau. American Fact Finder. factfinder2.census.gov.

Population

Cascade Shores is not a CDP, but with 84 residential EDUs currently connected, the population is estimated at 202 (2.35 [average household size in Nevada County] multiplied by 84 units).

Projected Growth and Development

The Cascade Shores system was designed to serve only the Cascade Shores subdivision. No additional growth or development is therefore anticipated beyond the 19 reserve EDUs currently available. With a design flow of 0.265 MGD and an average flow of 0.127 MGD and peak flow in the last year of 0.01502 MGD, the system has enough design capacity to accommodate the 19 reserve EDUs.

Disadvantaged Unincorporated Communities

As described in Chapter 3 *Introduction*, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Cascade Shores area. Cascade Shores is not identified as a DUC because it is not a CDP, and no Census figures were available for this area. Cascade Shores is not considered a "community" in the context of Nevada County but is simply a small subdivision of homes without integrated support services such as schools, parks, jobs, and commercial development.

Zone 9 – Eden Ranch

Population

Eden Ranch is not a CDP, but with 27 residential EDUs, the population can be estimated at 64 (2.35 [average household size in Nevada County] multiplied by 27 units).

Projected Growth and Development

The Eden Ranch system was designed to serve only that subdivision. No additional growth or development is therefore anticipated beyond the 4 reserve and 2 unallocated EDUs. Eden Ranch has a design flow of 0.0062 MGD and an average flow of 0.0015 MGD, demonstrating sufficient capacity to serve the additional reserve and unallocated EDUs.

Disadvantaged Unincorporated Communities

As described in Chapter 3 *Introduction*, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Eden Ranch area, and Eden Ranch was not identified as a DUC because it is not a CDP, and no Census figures were available for this area. Eden Ranch is not considered a "community" in the context of Nevada County but is simply a small subdivision of homes without integrated support services such as schools, parks, jobs, and commercial development.

Zone 11 – Higgins Village

Population

Higgins Village is an entirely commercial zone; the population is zero.

Projected Growth and Development

Higgins Village is anticipated to grow with new commercial development near the intersection of Combie Road and Highway 49 ("Higgins Marketplace"). Peak flow in the last year was 0.010 MGD, nearing the design flow of 0.0119 MGD. However, the Sanitation District plans to merge Higgins Village into the Lake of the Pines zone (Zone 2), though no firm date nor funding has been secured for this project.

Disadvantaged Unincorporated Communities

Higgins Village is not a residential community and is therefore not considered a DUC.

Zone 12 – Valley Oak Court

Population

Valley Oak Court is a 10-unit residential subdivision near the Penn Valley zone, in the community of Penn Valley. It is not a CDP, but it can be assumed that the population is around 12 (five units currently connected multiplied by 2.35 [average household size in Nevada County]).

Projected Growth and Development

The Valley Oak Court sewer system was designed to serve just the new subdivision of Valley Oak Court, so no additional growth or annexation into its system is anticipated beyond the five additional EDUs for the five remaining lots in the subdivision. However, Valley Oak Court will be merged into the Penn Valley zone in the near future, and Penn Valley is planned to be annexed into the Lake Wildwood zone.

Disadvantaged Unincorporated Communities

As described in Chapter 3 Introduction, LAFCo is required to consider the provision of public services to disadvantaged unincorporated communities (DUCs). Nevada LAFCo's policy on DUCs and relevant data were reviewed for the Valley Oak Court area, and Valley Oak Court was not identified as a DUC because it is not a CDP, and no Census figures were available for this area. Valley Oak Court is not considered a "community" in the context of Nevada County but is simply a small subdivision of homes. However, Valley Oak Court is located within Penn Valley, which is considered a DUC, as discussed above.

8.7 WASTEWATER SERVICES

A customer of the District must be able to secure a connection to the specific zone which is tracked through the County APN. The District has historically only provided service to customers within the specific zone, unless the customer is in close proximity and can become annexed into the zone through

the LAFCo process. The District does have some interagency agreements and can provide assistance if needed with either the Nevada City or Grass Valley WWTP systems in an emergency.

Nevada County Sanitation District No. 1 currently serves a total of 5,687.8 EDUs, 5,473 of which are residential EDUs. Approximately 10,000 people are currently served by the District, in addition to a number of commercial enterprises.

According to the District's Sewer System Management Plan, service requests are initiated by customers, staff, or outside entities, and are prioritized by the nature of the request and initiated by any of the following actions: placement on priority schedule, CCTV of the line, public outreach/educational information, referral for further evaluation, or referral directly to District engineering staff for replacement. Once the collections system staff receives the service request, they investigate the request and complete it by the required due date.[20]

The District administers, operates, and maintains wastewater collection systems, treatment and disposal facilities in compliance with Nevada County Department of Environmental Health, California Department of Health Services, California Regional Water Quality Control Board- Central Valley Region, and Federal Environmental Protection Agency rules, regulations, certifications, and permits.

The District's Annexation Policy indicates that the preferred service arrangement for new public wastewater systems (PWS) is annexation into an existing zone. If this is not a viable option then the PWS may become its own zone only if findings of financial, operational, and technical viability can be made. The District retains the right to deny annexation of a new zone.[21]

The reader is directed to the subsection "Adequacy and Challenges in Provision of Wastewater Service and Infrastructure," under each zone in Section 8.8, for more information on challenges with regard to provision of wastewater services.

Summary of Services

Each collection and treatment system was constructed by the developer of the area which it serves. Many of the collection and treatment systems operate differently. The method of disposal may also vary by system. The District has four different types of collection systems which all demand different operations and maintenance practices, as follows:

- The District has five treatment zones with traditional gravity sewers, manholes, and lift stations with discharge force mains. The zones with this type of system are Lake Wildwood, Lake of the Pines, North San Juan, Cascade Shores, and Gold Creek.
- The District has four Septic Tank Effluent Pump (STEP) systems. STEP systems have a septic tank at each property and then a pump that discharges septic tank effluent into a force main

[20] Nevada County Sanitation District No. 1. Sewer System Management Plan. 2012.
[21] Board of Directors of Nevada County Sanitation District. No. 1. Ordinance No. SD-65: "An Ordinance Adding Chapter 8 to the Sanitation District Code [Establishing an Annexation Policy]." April 28, 2009.

collection system. The zones with this type of system are Penn Valley, Mountain Lakes Estates, Higgins Village, and Valley Oak Court.

- Eden Ranch is a Septic Tank Effluent Gravity (STEG) system. A STEG system is similar to a STEP system except the effluent from the septic tank flows by gravity through the collection system.
- The Dark Horse area, which is part of Lake of the Pines zone, is a grinder pump force main system. The force main discharges to the Lake of the Pines gravity collection system.

Table 8-6, Sewer System Summary by Zone, provides a tabular summary of the narrative information presented in this section.

Table 8-6: Sewer System Summary by Zone							
Zone No.	Zone Name	Collection System	Treatment System	Cleaning and Maintenance	Liquids Disposal	Solids Disposal	Challenges
1	Lake Wildwood (LWW)	Vitrified clay pipe gravity with some force mains, 14 lift stations, manholes	WWTP with headworks screening, secondary clarifiers, UV disinfection	Gravity sewers inspected on 3-yr cycle, CCTV 6-yr cycle	Discharge to Deer Creek under RWQCB Order No. Order R5-2009-0004 and TSO R5-2009-0005	Dewatered solids hauled to Austin Road landfill in Wheatland	UV disinfection may become a challenge
2	Lake of the Pine (LOP)	Polyvinyl chloride (PVC) gravity with some force mains, 12 lift stations, manholes	WWTP with membrane reactor, UV disinfection	Gravity sewers inspected on 3-yr cycle, CCTV 6-yr cycle	Discharge to Magnolia Creek under RWQCB Order No. R5-2009-0031	Dewatered solids hauled to Austin Road landfill in Wheatland	UV disinfection may become a challenge
2	Dark Horse (part of LOP)	Individual septic grinder tanks, then pumped to PVC force main to LOP gravity system	See LOP	Pigging of force main on 10-yr cycle	See LOP	District pumps septic tanks and hauls septage to LOP or LWW WWTP	None identified
4	North San Juan	PVC gravity with 1 force main, 1 lift station, manholes	Community septic system	Gravity sewers inspected on 3-yr cycle, CCTV 6-yr cycle	Community leach field under RWQCB MRP No. 87-190	District pumps septic tanks and hauls septage to LOP or LWW WWTP	None identified
5	Gold Creek	PVC gravity	Community septic system	Gravity sewers inspected on 3-yr cycle, CCTV 6-yr cycle	Community leach field with EH permit	District pumps septic tanks and hauls septage to LOP or LWW WWTP	None identified

Table 8-6: Sewer System Summary by Zone							
Zone No.	Zone Name	Collection System	Treatment System	Cleaning and Maintenance	Liquids Disposal	Solids Disposal	Challenges
6	Penn Valley	STEP[22] (Individual septic tanks to PVC force main)	Residential septic tank, then aerated lagoons	Individual septic tanks inspected annually starting 3 yrs after tanks pumped	Final effluent conveyed from aerated lagoons to storage reservoir for disposal. Liquids then spray-irrigated to pasture under RWQCB Order No. 5-01-210 and Cease and Desist Order No. R5-2009-0077	District pumps septic tanks and hauls septage to LOP or LWW WWTP	High flows during rain events lead to pump break down at individual connections
7	Mountain Lake Estates	STEP (Individual septic tanks to PVC force main)	Residential septic tank, then conventional community septic system	Individual septic tanks inspected annually starting 3 yrs after tanks pumped	Community leach field with EH permit	District pumps septic tanks and hauls septage to LOP or LWW WWTP	None identified
8	Cascade Shores	PVC gravity, 1 lift station, manholes	WWTP consisting of fine screening to flow equalization tank to moving bed biofilm reactor (MBBR) process to UV disinfection	Gravity sewers inspected on 3-yr cycle, CCTV 6-yr cycle	Discharge to Gas Canyon Creek under RWQCB Order No. R5-2008-0111 and TSO R5-2010-0909	Waste sludge is transported to LWW WWTP	Surface water discharge requirements; soon to convert to land-based leach field effluent disposal UV

[22] A STEP system consists of sewage being pumped to individual residential or business septic tanks, and then being transferred in some fashion to either a community septic system or some other type of treatment system. In STEP systems, the individual septic tanks provide part of the sewage treatment.

Table 8-6: Sewer System Summary by Zone							
Zone No.	Zone Name	Collection System	Treatment System	Cleaning and Maintenance	Liquids Disposal	Solids Disposal	Challenges
							disinfection may become problematic
9	Eden Ranch	STEG (Individual septic tanks to PVC gravity pipes)	Residential septic tanks	Septic tanks inspected annually starting 3 yrs after being pumped	Community pressure-dosed leach field with EH permit	District pumps septic tanks and hauls septage to LOP or LWW WWTP	Individual residential septic tanks trap FOG
11	Higgins Village	STEP (Individual septic tanks to PVC force main)	Individual septic tanks, then to WWTP with activated sludge, nitrification and denitrification, tertiary filtration, and chlorine disinfection	Septic tanks inspected annually	Land-based drip irrigation under RWQCB Order No. R5-2003-0048	District pumps septic tanks and hauls septage to LOP or LWW WWTP	None identified
12	Valley Oak Court	STEP (Individual septic tanks to PVC force main)	Residential septic tank, then community septic tank, then pretreatment unit	Septic tanks inspected annually starting 3 yrs after being pumped	Community pressure-dosed leach field with EH permit	District pumps septic tanks and hauls septage to LOP or LWW WWTP	None identified

Zone 1 – Lake Wildwood

Service Overview

Lake Wildwood's connections are primarily residential. Lake Wildwood currently has 2,916 connected EDUs, 62 of which are commercial and the rest residential. A total of 1,384 additional EDUs are either in reserve or unallocated. The Lake Wildwood zone consists of a gravity collection system with tertiary (advanced) treatment and discharge to Deer Creek. Solids are hauled offsite for disposal.

Penn Valley (Zone 6) and Valley Oak Court (Zone 12) are both planned for annexation into Zone 1, with construction anticipated from 2015-2016. While some funds for this construction could be used for plant upgrades like odor controls, the District does not plan any increase in capacity with this construction project.

Treatment Systems

Up until December 31, 2012, effluent was disinfected in with chlorine gas and dechlorinated with sulfur dioxide gas. A new ultraviolet (UV) disinfection system and effluent monitoring equipment was installed in 2012 and is now operational.

Treatment begins with headworks screening to the equalization tank where influent is stored. Influent is then denitrified and sent to the oxygenation ditch for nitrification. The effluent then flows to the secondary clarifiers for sludge settling and to the tertiary filters for filtering of the remaining solids.

Chemicals added during treatment include sodium hypchlorite for plant water, polymer for coagulation/filtration, and NaOH for pH control. Other chemicals that may be added on an as-needed basis include caustic soda for pH control and sodium bisulfate, though neither of these chemicals was added during the 2013 treatment year.[23]

Effluent discharges to Deer Creek. The Lake Wildwood WWTP operates under the Central Valley RWQCB's Waste Discharge Requirements (WDRs) Order R5-2009-0004, effective March 27, 2009, and Time Schedule Order (TSO) R5-2009-0005, adopted February 5, 2009. The WDRs establish effluent limitations for Deer Creek and require that the discharger collect samples, record data, and submit reports electronically to the RWQCB.

[23] State Water Resources Control Board. Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Lake Wildwood WWTP. Signed February 24, 2014.

Solids Disposal

The solids removed from the activated sludge process travel to the aerobic digester for bio-solids treatment prior to dewatering in the plant centrifuge, and the dewatered solids are then hauled offsite to the Austin Road landfill in Wheatland for daily cover.

Adequacy and Challenges in Provision of Wastewater Service

The most recent compliance evaluation inspection by the Central Valley RWQCB noted that the Lake Wildwood treatment facility complied fully with the monitoring and reporting requirements of the WDRs and the requirements of TSO R5-2009-0005, but that dichlorobromomethane effluent limitations were violated up until December 2012, when Lake Wildwood transferred to a UV system for disinfection. The District notes, however, that while there haven't been any violations yet for these systems, the UV systems are not as effective as once thought.[24]

Zone 2 – Lake of the Pines

Service Overview

The Lake of the Pines WWTP serves a large residential community similar to the Lake Wildwood community. This zone has 2,090 connected EDUs, 80 of which are commercial, as well as 597 unused EDUs either in reserve or unallocated. Most connections are residential.

Treatment Systems

The LOP WWTP uses a membrane reactor (MBR) with both coarse and fine screening of solids. After screening, the influent is denitrified in tanks, and the deactivated sludge is sent to the membrane reactor where the permeate is drawn through the membranes and sent to UV disinfection. The final effluent is discharged to Magnolia Creek.[25] The treatment plant was last significantly upgraded in 2008 when the plant was essentially rebuilt from the ground up as a tertiary treatment facility with a membrane reactor (MBR) that screens solids and treats the permeates with UV disinfection. Final effluent is discharged to Magnolia Creek, a tributary to the Bear River. Solids are dewatered and hauled offsite to the McCourtney Road transfer station where they are used for daily cover. A gravity collection system is utilized.

[24] Central Valley Regional Water Quality Control Board. Compliance Evaluation Inspections, Nevada County Sanitation District No. 1, Lake Wildwood Wastewater Treatment Plant, Nevada County. February 4, 2013.

[25] State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Lake of the Pines WWTP. Signed February 24, 2014.

The Lake of the Pines WWTP operates under the Central Valley RWQCB's WDRs Order R5-2009-0031, effective June 13, 2009. The WDRs establish effluent limitations and require that the discharger collect samples, record data, and submit reports electronically to the RWQCB.

The Dark Horse residential subdivision and golf course facilities were recently connected to the Lake of the Pines treatment facility. Dark Horse uses a grinder pump force main system to convey its wastewater to the Lake of the Pines treatment facility. Once the effluent is masticated in individual septic systems in Dark Horse, it is then conveyed by force main to the Lake of the Pines gravity collection system.

Cascade Crossing, a new development, most recently tied into Lake of the Pines, while Higgins Corner is in the process of doing so. Higgins Village in Zone 11 is tentatively planned to be merged into the Lake of the Pines system if and when Higgins Marketplace is constructed, but there are no firm plans or construction start date as of this writing to do so. Another approved but as-yet-unconstructed development, an elderly care facility, approximately one mile to the south (Rincon del Rio) may also connect to the Lake of the Pines treatment plant. If they do connect, they must purchase additional membranes for the plant to provide additional capacity.

Solids Disposal

Septic tank solids from Dark Horse are pumped and taken to the LOP WWTP for dewatering. The activated sludge waste at the LOP WWTP is pumped to the aerated digester and thickened, and then is sent through a centrifuge dewatering process. Dewatered bio-solids are hauled offsite to the Austin Road landfill in Wheatland where they are used for daily cover.

Adequacy and Challenges in Provision of Wastewater Service

There is only one known capacity restriction in the collection system. Lift station 7 sometimes reaches the high-level float during severe rain storms. When a bad storm is expected, the District parks a vactor truck next to the lift station so that in the event of a high-level alarm the District can pump out additional wastewater. The lift station is small, has a small contributing area, and is shallow, so trucking wastewater has been effective at preventing a spill. In general even during the worst rain storms the other lift stations run with only one pump and there are no repeat overflow locations. Wastewater service workers will continue to investigate and monitor infiltration and inflow (I&I) to ensure continued reliable operation even during the worst rain storms.

According to the most recent compliance evaluation report by the RWQCB, the Lake of the Pines facility has no effluent limitation compliance issues and fully complies with the limitations set forth in the WDRs. As of the February 4, 2013 compliance inspection, however, the Sanitation District had not completed the Supplemental Environmental Project (SEP) as part of Administrative Civil Liability Order R5-2009-0552.[26]

[26] Central Valley Regional Water Quality Control Board. Compliance Evaluation Inspection, Nevada County Sanitation District No. 1, Lake of the Pines Wastewater Treatment Plant, Nevada County. February 4, 2013.

Lake of the Pines uses UV disinfection. While this type of disinfection has not yet led to water quality violations, it does not appear to be as effective as originally thought.

Zone 4 – North San Juan

Service Overview

The North San Juan zone provides sanitary sewer service in the North San Juan community area using a conventional septic tank system with land-based effluent disposal to a leach field. Commercial connections are isolated to one area. This zone services 85 EDUs, all but 9 of which are residential connections, and provides an additional 29 standby EDUs.

Collection System

A gravity collection system is utilized.

Treatment Systems

The North San Juan treatment facility provides mechanical treatment using a conventional septic tank system with land-based effluent disposal to a leach field. Waste is reduced via anaerobic processes, and effluent is discharged to leach field system.[27]

The North San Juan treatment plant operates under Central Valley RWQCB Monitoring and Reporting Program (MRP) Revised Order No. 87-190. This Order requires the District to test the septic tank annually; monitor effluent monitoring on a monthly or quarterly basis, depending on the constituent; and monitor the leachfield. Monitoring of the groundwater monitoring wells is also required on a quarterly basis. Monthly, quarterly, and annual reports must be submitted to the Central Valley RWQCB for the various MRP components.

Solids Disposal

The District pumps individual septic tanks and hauls the septage to either the LOP or LWW WWTP for dewatering and ultimate disposal at the Austin Road landfill in Wheatland.

Adequacy and Challenges in Provision of Wastewater Service

There are no known capacity restrictions in the collection system. In general even during the worst rain storms the lift station runs with only one pump and there are no repeat overflow locations. Wastewater service workers will continue to investigate and monitor I&I to ensure continued reliable operation even during the worst rain storms.

[27] State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: North San Juan WW Facility.

Zone 5- Gold Creek

Service Overview

The Gold Creek zone provides sewage collection and treatment to the 44 condos located immediately north of Alta Sierra. Gold Creek utilizes a standard septic system, two community septic tanks, and a community land-based leach field. No EDUs are in reserve.

Collection System

Collection occurs via a gravity system.

Treatment Systems

Gold Creek utilizes a standard septic system with a gravity collection system and two community septic tanks. Liquid effluent is discharged to a community land-based leach field.

The Nevada County Environmental Health Department regulates the Gold Creek treatment plant through a 1985 permit. The permit requires quarterly and semi-annual testing for various constituents, as well as monitoring of three groundwater monitoring wells, the septic tanks, the stand pipes, and effluent in each leach field line. The septic tanks are to be pumped every three years at a minimum, and water usage must be recorded and evaluated in relationship to leach field usage. Monitoring data must be submitted to the Environmental Health Department on a quarterly basis. The permit also incorporates a contingency plan in the event of failure of any of the system parts, such as sewer stoppage or leach field overflow.

Solids Disposal

The District pumps individual septic tanks and hauls the septage to either the LOP or LWW WWTP for dewatering and ultimate disposal at the Austin Road landfill in Wheatland.

Adequacy and Challenges in Provision of Wastewater Service

There are no known capacity restrictions in the collection system, nor has the District identified any challenges in providing wastewater service or infrastructure specific to this zone.

Zone 6 – Penn Valley

Service Overview

The Penn Valley WWTP serves mostly residential connections, though the community consists a variety of uses, including commercial, office, and agricultural uses. The treatment facilities were constructed in 1990 to provide sewage collection and treatment to the community of Penn Valley. The Penn Valley Zone will soon be merging into Zone 1 (Lake Wildwood), along with Zone 12 (Valley Oak Court). The Penn Valley mobile home park is also considering annexation into Zone 1 at such time as construction starts, but there are no concrete plans to do so as of this writing. There is currently a development moratorium area in Penn Valley based on the lack of capacity in the treatment system, but this lack of

capacity does not affect existing customers. There are 347 connections, 14 of which are commercial, as well as 111 standby EDUs.

Treatment Systems

The system is a Septic Tank Effluent Pump (STEP) force main collection system in which sewage first flows to individual residential septic tanks. Sewage is then pumped from the individual septic tanks through a pressurized collection system to aerated lagoons and then to a storage reservoir. [28] Wet solids accumulate in the bottom of the lined lagoons, and the lagoons are dredged and sludge hauled offsite periodically as needed. Final effluent is spray-irrigated onto pastures, and groundwater is monitored in these irrigated fields. The Penn Valley treatment facility is within the jurisdiction of the Central Valley RWQCB and has been operating under Cease and Desist Order R5-2009-0077 since 2009 to address capacity problems at the WWTP related to high groundwater levels within the disposal areas, inflow and infiltration from leaking sewer laterals from homes, and from the collection and retention of storm water runoff from the disposal areas.

Solids Disposal

Wet solids accumulate in the bottom of the lined lagoons, and the lagoons are dredged and sludge hauled to the LOP or LWW WWTP periodically as needed for dewatering and ultimate disposal at the Austin Road landfill in Wheatland.

Adequacy and Challenges in Provision of Wastewater Service

There is currently a development moratorium area in Penn Valley based on the lack of capacity in the treatment system. The Penn Valley WWTP has a design flow of 0.1256 MGD and a present average dry weather flow of 0.0897 MGD. Peak flow in the last year was 0.1915 MGD. On days when the flow is higher than treatment capacity, wastewater does not receive treatment. During periods of high rain when the ground get saturated, infiltration into the individual septic tanks can cause high flows to get pumped to the treatment plant. At times individual home pumps stations (7 to 15 gpm) are not able to keep up with the infiltration, and a high-level alarm causes the property resident to call the District to investigate. Typically this indicates the pump is worn out and needs to be replaced. The dam in the irrigation reservoir has a freeboard limit which has also historically been surpassed on occasion.

For these reasons and because capacity is compromised during extended periods of precipitation as rain increases the level of the storage basin, the RWQCB issued Cease and Desist Order R5-2009-0077 in 2009. The RWQCB requires the Penn Valley WWTP to draw down the irrigation storage reservoir by October 1 of each year in order to protect surrounding water quality during 100-year storm events.

The Sanitation District has been awarded a $5 million grant from the RWQCB to fund pipeline construction from Penn Valley to Lake Wildwood, during which the pipeline will also tie into Zone 12,

[28] State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Penn Valley WWTP. Signed January 18, 2011.

Valley Oak Court.[29] This aggregation of zones will facilitate the resolution of water quality and treatment issues at the Penn Valley WWTP. The District is also planning on developing a hydraulic model of the Penn Valley collection system during the design portion of the proposed pipeline from Penn Valley to the Lake Wildwood wastewater treatment plant. The model will be used to determine the design parameters of the pipeline.

Zone 7 – Mountain Lake Estates

Service Overview

The Mountain Lake Estates treatment facilities were constructed in 1990 to provide sewage collection and treatment to the new residential community of Mountain Lake Estates. Mountain Lake Estates services only residential uses with 40 connected EDUs with six standby EDUs. The treatment facility uses a STEP force main collection system, similar to the STEP system described under Zone 6, in Penn Valley, above.

Treatment Systems

Step system tanks located on customer properties pump to treatment plant septic tanks and then to a subsurface leach field. The Environmental Health Department regulates the Mountain Lake Estates system. On January 25, 1999, the Environmental Health Department approved a request to reduce monitoring requirements from monthly to quarterly. The Sanitation District is required to test for several constituents when water is observed in the monitoring wells. Flow meters are also monitored on a monthly schedule, and the depth of tank sludge is measured annually.

Solids Disposal

The District pumps individual septic tanks and hauls the septage to either the LOP or LWW WWTP for dewatering and ultimate disposal at the Austin Road landfill in Wheatland.

Adequacy and Challenges in Provision of Wastewater Service

There are no knows capacity restrictions in the individual house pump stations or other known issues or challenges with wastewater service in the Mountain Lake Estates zone.

[29] KNCO, Penn Valley Wastewater Grant Approved, knco.com/penn-valley-wastewater-grant-approved/, 19 May 2014.

Zone 8 – Cascade Shores

Service Overview

The Cascade Shores treatment facilities were constructed in 1996 to provide sewer services to the residential community of Cascade Shores, which is now comprised of a mix of primary and vacation homes around Scotts Flat Reservoir. This plant serves 86 EDUs (two of which are commercial connections) and has 19 reserve EDUs. It provides tertiary treatment via a package plant, and final effluent is discharged to Gas Canyon Creek.

Treatment Systems

The District provides tertiary treatment via a package plant using activated sludge and UV disinfection. Sewage is collected via gravity flow. Influent is processed through a fine screen/grit removal system to the biological process of nitrification. The influent is then transferred to the flow equalization tank, which equalizes flow and provides an anoxic environment that utilizes carbon for denitrification. The influent then flows to stainless steel treatment tanks where a moving bed biofilm reactor (MBBR) process is used. This process is a hybrid of conventional suspended growth activated sludge with the addition of polyethylene biofilm carriers to provide a fixed-film substrate. During tertiary treatment, ultrafiltration is applied to the secondary clarifier effluent, and UV light disinfects the effluent.

Final effluent is discharged to the surface waters of Gas Canyon Creek, which contains water only during periods of precipitation or snowmelt.[30]

The Cascade Shores WWTP operates under the Central Valley RWQCB's WDRs Order R5-2008-0111, effective July 31, 2008, and TSO R5-2010-0909, adopted December 10, 2010. Treatment plant operators must comply with effluent limitation established by the WDRs and collect samples, record data, and submit reports electronically to the RWQCB.

Solids Disposal

Waste sludge is hauled to the Lake Wildwood WWTP for processing, where the solids are dewatered and ultimately disposed of at the Austin Road landfill in Wheatland.

[30] State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Cascade Shores WWTP. Signed February 24, 2014.

Adequacy and Challenges in Provision of Wastewater Service

There are no known capacity restrictions in the collection system. However, on May 9, 2005, a landslide displaced sewage effluent line. As a result, the treatment facility was placed under RWQCB's Cleanup and Abatement Order R5-2005-0714. Currently, a high-density polyethylene sewage line transports raw sewage down the face of a cliff, and erosion control has been established that diverts surface water from the hill and nets the cliffside to prevent further cliffside failure. There is also emergency storage to collect sewage at the top of the cliff in the event of another failure of the sewage line. Wastewater service workers continue to investigate and monitor I&I to ensure continued reliable operation even during the worst rain storms.

Since December 14, 2010, the Cascade Shores WTTP has had a TSO (R5-2010-0909) in effect. This TSO places limits on the amount of copper in effluent discharge. The most recent compliance evaluation noted that the facility is meeting the TSO effluent limitation for copper.[31]

The 2004 MSR made a determination that "meeting current and future regulatory requirements will continue to be a concern of the Nevada County SD No. 1," and the District has recently indicated that meeting the regulatory requirements at Cascade Shores continues to be a problem. One issue is the UV tertiary treatment, which, although it has not yet led to violations, might not be as effective as envisioned. Furthermore, shortly after the landslide damaged the effluent sewage line and it was rebuilt, the discharge requirements changed. The plant was upgraded again, and again the discharge requirements changed. The District's current plan is to abandon the plant and build a community leach field, which discharges onto land and so does not carry the stringent requirements that discharge to surface water does.

The plant is still operational but has been fined and given a time schedule to fix it. The District has recently closed escrow on the purchase of 40 acres on which to build the leach field. The County will attempt to obtain a grant to build the leach field once the property has been purchased.

Zone 9 – Eden Ranch

Service Overview

These treatment facilities were constructed in 2000 for the purpose of providing sewage collection and treatment to the residential subdivision of Eden Ranch. The Sanitation District provides service to the 27 single-family homes that currently exist in the Eden Ranch zone. The facilities use a STEG system: sewage first flows to individual residential septic tanks and effluent is pressure-dosed to community land-based leach fields. Solids from the septic tanks are hauled offsite for disposal.

Eden Ranch's sewage system currently has 27 connected EDUs and 4 standby EDUs.

[31] Central Valley Regional Water Quality Control Board. Compliance Evaluation Inspection, Nevada County Sanitation District No. 1, Cascade Shores Wastewater Treatment Plant, Nevada County. February 8, 2013.

Treatment Systems

Individual residential septic tanks trap FOG. Effluent is pressure-dosed to community land-based leach fields.

The Eden Ranch system is operated under the purview of the Nevada County Environmental Health Department. The Environmental Health permit, issued November 6, 1998, requires semi-annual monitoring of fecal coliform constituents, as well as inspection of the liquid level in monitor wells, the pump tank, pump screens, pumps, alarm function, back-up generator, and general leach field surface condition. Individual septic tanks and the collection system also require monitoring. The Sanitation District must submit records of these inspections and monitoring routines on a semi-annual basis.

Solids Disposal

The District pumps individual septic tanks and hauls the septage to either the LOP or LWW WWTP for dewatering and ultimate disposal at the Austin Road landfill in Wheatland.

Adequacy and Challenges in Provision of Wastewater Service

There are no known capacity restrictions or other issues related to adequacy of wastewater service provision within Eden Ranch.

Zone 11 – Higgins Village

Service Overview

Higgins Village services only commercial connections. These treatment facilities were last upgraded in 2003 for the purpose of providing sewage collection and treatment to the commercial development at Higgins Corner. Higgins Village services only commercial connections, with 47.8 EDUs and no standby or unallocated EDUs. This zone uses a STEP force main collection system, an activated sludge treatment process, and a community subsurface disposal field.

Treatment Systems

The Higgins Village WWTP is a small package treatment plant with no screening. Influent flows from STEP system pumps at the individual business locations and is then pumped up to the treatment plant. The treatment process uses activated sludge treatment with denitrification, aerobic digestion, tertiary filtration, chlorine disinfection.[32] Effluent discharges via a community subsurface disposal field.

The Higgins Village treatment plant is regulated by the Central Valley RWQCB. The Higgins Village treatment plant is regulated by the Central Valley RWQCB under WDRs Order No. R5-2003-0048, which includes discharge specifications, effluent limitations, solids disposal specifications. Monitoring and Reporting Program No. R5-2003-0048 requires annual septic tank monitoring, monthly grease trap

[32] State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Higgins Village WWTP.

monitoring, monthly and quarterly influent and effluent monitoring for flow and constituents, monthly leach field monitoring, annual sludge monitoring, quarterly groundwater monitoring, and annual water supply monitoring.

Solids Disposal

The District pumps the individual business septic tanks and hauls the septage to the LOP or LWW WWTP. During the winter sludge is pumped from the holding tank (digester) and sent to Lake of the Pines and processed as influent for retreatment.

Adequacy and Challenges in Provision of Wastewater Service

There are no knows challenges in the provision of wastewater services to Higgins Village.

Zone 12 – Valley Oak Court

Service Overview

Valley Oak Court is a STEP system where individual house pump stations discharge through a PVC force main to the community tank. Valley Oak Court is a new zone since the 2004 MSR, but is anticipated to be regionalized into the Penn Valley zone (Zone 6) in 2015-2016, simultaneous with construction of infrastructure to the Penn Valley plant.

Collection System

Waste from the homes serviced in Valley Oak Court is first collected in individual septic tanks and then is conveyed via force main to a 4,000-gallon processing septic tank and pretreatment unit.

Treatment Systems

Treatment occurs first in individual residential septic tanks and then in a community biological treatment tank and pretreatment unit. Effluent is pumped out to a subsurface leach field. The Environmental Health Department regulates this treatment facility under a permit approved on February 26, 2007. The permit allows 6,000 gpd maximum flow and requires quarterly sampling of three to four monitoring wells for numerous constituents, with reporting required within 15 days of sampling.

Solids Disposal

The District pumps individual residential septic tanks and hauls the septage to LOP or LWW WWTP.

Adequacy and Challenges in Provision of Wastewater Service

There are no knows challenges in the provision of wastewater service to Valley Oak Court.

8.8 WASTEWATER INFRASTRUCTURE AND PUBLIC FACILITIES

Infrastructure and Facilities Overview

Sewage is collected by gravity flow or pressurized force main. The District has two types of gravity collection systems: standard gravity collection of "raw" sewage and STEG systems which collect only the clarified wastewater from septic tanks at individual properties. The District monitors solids in these tanks and pumps the tanks once levels reach 30 percent or more of the tanks' holding capacity. Eden Ranch is the only STEG system in the District. There are three types of pressurized sewers: force mains conveying the wastewater from a sewage pump station to a gravity sewer at the top of a hill, low pressure sewers, and solids handling sewers. Force mains are designed so that the pump discharge maintains a scouring velocity in the sewer and maintenance is generally not needed. Pressurized sewers generally do not cause SSOs.

Low pressure sewers (STEP systems such as Penn Valley, Mountain Lakes Estates, Higgins Village, and Valley Oak Ct.) are similar to STEG systems except that once the solids are removed, a pump conveys the remaining clarified wastewater into a pressurized sewer maintained by the sewer District.

The District is responsible for removal of solids from the individual septic tanks in the STEP and STEG systems, and removes these to the Lake Wildwood or Lake of the Pines treatment plants. Dewatered sludge from the District's treatment plants is conveyed to the Austin Road landfill in Wheatland for alternative daily cover.

The District also owns vehicles for staff transportation, cleaning trucks, backhoes, vacuum trucks, crane trucks, a tow-behind cleaning trailer, and CCTV equipment. This equipment is used across zones as needed.

The District maintains record drawings of each collection system. Full size collection system maps (1 inch equals 400 ft. scale) of each zone are posted on the wall in the treatment plant Operations Buildings and stored in the service trucks. There are also copies of 11x17 map books which have the same information. The Collections Supervisor has a set of record drawings in the take home truck in case there is an after-hours service call. The sewer maps identify sewer mains, manholes, lateral stubs, and lift stations.

Sanitation District meetings are held in the County-owned Board of Supervisors chambers, so no separate meeting facilities are required.

Preventative Maintenance

The District employs a preventative maintenance program for its sewer lift stations and collections system. Lift stations use pumps to lift the collected sewage from low spots in the collection system to a higher elevation so that wastewater and continue to flow by gravity to the treatment plant. If there is an electrical or mechanical failure in a lift station, it can cause an SSO. Lift stations are monitored by autodialers which call the 24-hour District emergency phone number if there is a power outage or other alarm which could lead to a SSO. The auto dialer is checked five days a week at the end of the day by a phone call from a District administrative person to make sure the phone line works, there are no

unanswered alarms, and the building alarm is set. If there is something abnormal about the phone check, the administrative person calls the on-call Wastewater Service Worker to investigate.

Wastewater service workers perform routine inspections of lift stations twice per month, one of the emergency generator (checking such items as fluid levels, pump totalizer readings, wet well levels, instrumentation, and generator operations) and another of the actual lift station. Maintenance performed, station statistics, and observations are recorded on the generator log record kept at the station.

Lift stations are also cleaned twice per month. Lift station cleaning consists of pressure washing the inside of the station to dislodge fats, oil and grease (FOG) and prevent buildup of potentially odorous biological layers. A vactor truck may be used to suck out floating FOG or other debris if the accumulation has the potential to create sewer operations problems. Annually each lift station also receives a full electrical and mechanical inspection, including pumps.

Greenbelts and undeveloped natural lands are checked daily for evidence of overflows. This is a "windshield" inspection of areas that may not get visited by local residents, so there is the potential of spills which could go undiscovered.

Gravity collection systems are cleaned using high pressure water sent through a hose that is pushed up the sewer line. A nozzle at the end of the hose scours the inside of the sewer pipe washing debris and grease down to the lower manhole where it is vacuumed into the vactor truck for disposal at the treatment plant. In the case of roots, a rotating cutter can be attached to the nozzle that will cut away the roots intruding into the pipe through a joint or crack.

The District also performs cyclic cleaning based on the branching structure of its gravity collections system. Starting from the ends of the sub-areas and working toward the wastewater treatment plant, each sub area of the system is cleaned on a rotating three-year schedule. As cleaning is completed and condition assessments made, potential trouble areas are documented and prioritized for increased cleaning or remedial action as required.

Pressurized sewers are designed so that discharge maintains a scouring velocity in the sewer, and maintenance is generally not needed. However, the grinder pump force mains in Dark Horse can accumulate solids, and as such they are "pigged" as needed to maintain efficiency. A "Pipe Pig" is a shaped piece of foam rubber that scrubs the inside of the pipe, removing any buildup and forcing it through the pipe by pressure.

Routine maintenance in STEP systems consists of a regular survey and cleaning of septic tanks. Annually the collections department measures the sludge depth in each septic tank that has not been cleaned within the last three years. If the combined sludge and scum is more than 30 percent of the tank volume, the septic tank is scheduled for cleaning.

Maintenance performed on both gravity and pressure sewers is documented in the computerized maintenance management system, Job Cal+. The section of line cleaned or CCTVed are also highlighted with the date of service on the master schedule sewer map. After cleaning the sewer or CCN, observations about the cleaning are recorded in completed work orders that can be referenced later.

Focused or prioritized sewer cleaning is scheduled based on findings from inspections. Focused cleaning may include root control or hydro-jetting of the line. If the condition of the pipe requires cleaning more frequently than once a year, it is considered a "hot spot" and can be cleaned as frequently as once a month. Non-hot spots, depending on their age, condition and environmental consequence of a spill, may be cleaned from yearly to once every three years. Annual or more frequent cleanings are documented in the Hot Spot Binder maintained by the collection systems workers.

The District uses two methods of root control, root cutting and root control foam. Root cutting physically removes the root intrusion so it will not cause a blockage in the sewer when needed. Root control herbicide foam is flushed down the sewer pipe, attaches to the roots, and is absorbed into them. Within a few weeks, the roots die back from the sewer joint or crack, eliminating growth for two or more years. When used properly, the herbicide will not harm the plant (usually trees) or the wastewater treatment plant. The procedure is generally performed every two years. Sewers with known root problems are monitored more frequently with CCTV inspections.

According to the Sanitation District, septic tank failures are rare and, when they do occur, are due to ground water leakage. They are typically repaired but not replaced.[33]

Facilities Improvements and Rehabilitation Process

Lake Wildwood, Lake of the Pines, and Cascade Shores have all undergone improvements in the last five years. New treatment plants were constructed at Cascade Shores and Lake of the Pines in 2008, while Lake Wildwood underwent an upgrade from chlorine disinfection to UV disinfection.

The District has a six-year plan for developing a rehabilitation and replacement program by 2018 that identifies and prioritizes system deficiencies and implements appropriate short-term or long-term actions to address each deficiency.

Identification of collection system deficiencies are identified by several means.

- Review of CCTV surveys.
- During the process of cleaning a mainline. Manholes are regularly inspected for structural integrity, roots, or I&I problems during the pipeline cleaning process.
- The District's lift stations are continually monitored during routine inspections by Wastewater Service Workers. Defects discovered are reported to supervisors and/or directly to the District's electrician and mechanics.

Facilities that are not in danger of immediate failure, but need rehabilitation or are near the design life expectancy, are either repaired by District crews or are placed in the five-year budget. Facilities that are larger in scope, requiring engineering design, analysis or planning, are also placed in the budget. Once deficiencies are found, short- and long-term rehabilitation measures can be scheduled.

[33] Nevada County Sanitation District No. 1. Sewer System Management Plan. 2012.

Ongoing Efforts

Some of the ongoing challenges with regard to the ability of the District to provide wastewater service include limited staff, limited budget and limited opportunity for regionalization of treatment systems, coupled with increased discharge quality requirements.

Flow monitoring in the collection system has been conducted in the past as part of a Sanitation Sewer Evaluation Study (SSES). The District is investigating the ability to do small in-house flow monitoring studies to evaluate I&I, general conditions of sewers, and the benefit/feasibility of sewer repair in locations with high I&I. Information from the flow monitoring study will contribute to the Rehabilitation and Replacement Plan.

The District is currently electronically mapping the Penn Valley collection system for improved operation and maintenance. Prior to electronic mapping, maintenance of the District's larger collection systems was documented by highlighting recently cleaned sewers and noting the day of service on full size copies of the sewer system maps. Conversion from "paper GIS mapping" to a geo-referenced database system (GIS) represents a significant expense which the District can only implement slowly, however. After Penn Valley is mapped and documented with GIS, the cost effectiveness of mapping other zones will be considered.

Following a landslide at the Cascade Shores facility that resulted in direct discharge of sewage into Gas Canyon Creek and mandatory minimum penalties (MMPs) from the RWQCB, the Nevada County Grand Jury released an investigative report on the status of wastewater treatment plants within the Sanitation District's service areas. The report was prompted by the Cascade Shores incident but applied to all zones of the Sanitation District. All Grand Jury recommendations were implemented by the Sanitation District Board of Directors. These included the creation of a Principal Civil Engineer position to oversee the Sanitation Division (a position which has since been dissolved); lobbying the state government for more equitable fines for facilities serving a low number of EDUs; developing a monitoring system to analyze violations, examine what failures have occurred, and take appropriate action to ensure they do not occur again; and establishing clearer communication protocols with the state for more effective coordination during emergency events.[34]

Both the staff and the BOD for the County Sanitation District have worked diligently to provide continued good service to customers and to respond to emerging issues in a timely manner. Like other sanitation districts in California, the District faces a situation with limited staff, limited budget and increased discharge water quality requirements. Additionally, due to geographic and financial constraints, there is limited opportunity for regionalization of treatment systems. Together, these factors influence the District's ability to supply and/or deliver wastewater service to their customers. The BOD does have the authority to raise service fees to augment the budget and staff as needed, and the BOD is cautious to ensure that any increase in rates is justified. Although the District sometimes finds that the cost associated with meeting water quality requirements is expensive, when that discharge

[34] Nevada County Civil Grand Jury. "Small-Time Sewage is a Big-Time Challenge." May 2006.

occurs into surface water and travels downstream, the state's laws serve a role to protect downstream water users. The District's BOD and staff do have opportunities to interact with and share information with state regulators on a regular basis through direct meetings, conferences, the legislative process, and through local watershed councils and participation in the Integrated Regional Water Management Plan process.

Opportunities for Shared Facilities

The 2004 MSR found that the Sanitation District should examine future opportunities for collaboration with other agencies in regional wastewater and watershed programs. The District has indicated that a proposed JPA or MOU with Lincoln resulted in protests from Alta Sierra residents. Other than the specific intra-regional opportunities for shared facilities discussed in more detail below (Higgins Village and Lake of the Pines; Penn Valley and Valley Oak Court with Lake Wildwood), the isolated nature of most of the zones, as well as public perception of regionalization, makes regional collaboration difficult.

The following sections provide more details about the collection, treatment, and disposal systems of each zone, as well any challenges in provision of service and opportunities for shared facilities specific to each zone.

Zone 1 – Lake Wildwood

Collection Infrastructure

On behalf of the Lake Wildwood zone, the Sanitation District owns and manages the collection system, consisting of a clay pipe gravity sewer system with manholes, 14 lift stations, and force mains. All wastewater is conveyed to the Lake Wildwood WWTP for treatment.

All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. Hot spots may be cleaned semiannually, quarterly, or monthly depending on the frequency of problems experienced and based on examinations using CCTV. Grease-generating food establishments and commercial kitchens have grease traps.

Treatment Infrastructure

Originally constructed in 1970, the District owns the WWTP and the land it sits upon. The tertiary treatment facility includes the headworks screening, secondary clarifiers, and the UV disinfecter. This system is associated with 2 miles of pressure line and 41 miles of gravity sewer lines.

Solids Infrastructure

The District owns and manages the aerobic digester and the plant centrifuge on behalf of the zone.

Opportunities for Shared Facilities

The District has plans to consolidate Penn Valley (Zone 6) and Valley Oak Court (Zone 12) with Zone 1, with construction anticipated from 2015-2016.

Zone 2 – Lake of the Pines

Collection Infrastructure

On behalf of the Lake of the Pines zone, the Sanitation District owns and manages the collection system consisting of PVC gravity pipes with manholes, and 12 pump stations with force mains that convey wastewater to the LOP WWTP. The Dark Horse area of Lake of the Pines has a grinder pump force main system.

All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. Hot spots may be cleaned semiannually, quarterly, or monthly, depending on the frequency of the problems experienced and based on examinations using CCTV. Grease-generating food establishments have grease traps, and homeowners' association facilities with kitchens all have grease traps.

The Dark Horse grinder pump force main system can accumulate solids. In order to maintain efficiency, cleaning is performed by forcing a "Pipe Pig" through the pipe. A "Pipe Pig" is a shaped piece of foam rubber that scrubs the inside of the pipe removing any buildup and forcing it through the pipe by water pressure.

Treatment Infrastructure

Infrastructure consists of a membrane reactor, UV disinfecter, 2 miles of pressure line and 26 miles of gravity pipes. The District also owns the WWTP facility and the property on which it is situated.

Solids Infrastructure

Infrastructure includes an aerated digester and a centrifuge.

Opportunities for Shared Facilities

The District plans to merge Higgins Village into Lake of the Pines at some point in the future, but currently there are no firm plans to do so. Cascade Crossing most recently tied into Lake of the Pines, while Higgins Corner is in the process of doing so. The Dark Horse area was recently connected to the Lake of the Pines treatment facility and uses a grinder pump force main system to convey its wastewater to the Lake of the Pines treatment facility. Another approved development, an elderly care facility approximately one mile to the south (Rincon del Rio), may also connect to the Lake of the Pines treatment plant. If they do connect, they must purchase additional membranes for the plant to provide additional capacity.

Zone 4 – North San Juan

Collection Infrastructure

North San Juan is a PVC gravity system with manholes, one pump station, and a force main to the treatment plant. Maintenance of the infrastructure includes cleaning all gravity sewers on a three-year cycle and CCTV on a six-year cycle. There are no hot spots in the North San Juan pipes requiring cleaning more frequently than once a year. Grease-generating food establishments have grease traps.

Treatment Infrastructure

Conventional community septic system is the treatment infrastructure.

Solids Infrastructure

There is no infrastructure associated with treatment of solids at the North San Juan treatment facility as accumulated solids in the septic tank are hauled to a wastewater treatment plant solids handling facility for disposal.

Opportunities for Shared Facilities

There are no other facilities in the general vicinity of the North San Juan system, and no observed opportunities for shared facilities

Zone 5- Gold Creek

Collection Infrastructure

Gold Creek, Zone 5, is an all gravity PVC system from the apartment complex to two community septic tanks and discharge to a community-based leach field. Maintenance of the gravity sewer pipes is conducted on a three-year cycle and CCTV on a six-year cycle. There are no hot spots in the Gold Creek zone.

Treatment Infrastructure

A conventional community septic system is the primary infrastructure.

Solids Infrastructure

There is no infrastructure associated with treatment of solids at the Gold Creek treatment facility as sludge is removed to an offsite location for processing.

Opportunities for Shared Facilities

The Gold Creek zone provides sewage collection and treatment to a condominium complex immediately north of Alta Sierra. Alta Sierra does not have a sewage treatment facility (all residents in Alta Sierra have individual septic systems), and the closest facilities are 3.5 miles away in the City of Grass Valley. Therefore, Gold Creek currently has no opportunities for shared facilities.

Zone 6 – Penn Valley

Collection Infrastructure

On behalf of the Penn Valley zone, the Sanitation District owns and manages a treatment system consisting of a STEP force main collection system. Individual house septic tank pumps discharge into a PVC pressure collection system that flows to the pump station. Penn Valley's facilities do not allow for cleaning or CCTV of the force main. However, the individual septic tanks are inspected annually starting

three years they are cleaned and pumped, when more than 30 percent of the tank volume consists of sludge.

Treatment Infrastructure

The treatment facilities were constructed in 1990 to provide sewage collection and treatment to the community of Penn Valley. Treatment infrastructure includes the pressurized collection system, aerated lagoons, and storage reservoir. Residential septic tanks are owned by the individual residential property owners but are maintained by the District.

Solids Infrastructure

Infrastructure for this aspect includes two lined lagoons located in the disposal area.

Opportunities for Shared Facilities

Along with Zone 12 (Valley Oak Court) the Penn Valley Zone will soon be merging into Zone 1 (Lake Wildwood). The Penn Valley mobile home park is also pursuing annexation into Zone 1 at such time as construction starts, but there are no established plans to do so as of this writing.

Zone 7 – Mountain Lake Estates

Collection Infrastructure

Mountain Lakes Estates uses a STEP system where individual house septic tank pumps discharge into a PVC pressure collection system that discharges directly to a sub-surface disposal system. There are no facilities that allow for cleaning or CCTV of the force main. The individual septic tanks are inspected annually starting three years after they are cleaned and pumped, when more than 30 percent of the tank volume consists of sludge.

Treatment Infrastructure

These treatment facilities were constructed in 1990 to provide sewage collection and treatment to the new residential community of Mountain Lake Estates. Infrastructure consists of individual residential septic tanks which are connected via pipes to the conventional community septic system. Flow meters and the leach field are also part of the treatment infrastructure.

Solids Infrastructure

There is no infrastructure associated with treatment of solids at the Mountain Lake Estates treatment facility as accumulated solids in the septic tank are hauled to a wastewater treatment plant solids handling facility for disposal.

Opportunities for Shared Facilities

There are no nearby regional facilities and therefore no opportunities for shared facilities.

Zone 8 – Cascade Shores

Collection Infrastructure

On behalf of Cascade Shores, the District owns and maintains a PVC gravity system with manholes and one lift station that lead to a tertiary treatment plant. All gravity sewers are cleaned on a three-year cycle and CCTV on a six-year cycle. There are no hot spots in the Cascade Shores zone.

Treatment Infrastructure

These treatment facilities were constructed in 1996 for the purpose of providing sewage collection and treatment to the residential subdivision of Cascade Shores. Infrastructure consists of fine screening to a flow equalization tank to a moving bed biofilm reactor (MBBR) process to UV disinfection.

Solids Infrastructure

There is no infrastructure associated with treatment of solids at the Cascade Shores treatment facility as sludge is transported to the LWW WWTP for dewatering and ultimate disposal at the Austin Road landfill in Wheatland.

Opportunities for Shared Facilities

Cascade Shores is a relatively isolated system. The nearest sewer facilities are five miles away in Nevada City. Therefore, there is no opportunity for shared facilities at this time.

Zone 9 – Eden Ranch

Collection Infrastructure

Eden Ranch collection and treatment facilities were constructed in 2000 for the purpose of providing sewage collection and treatment to the small residential subdivision of Eden Ranch. Collection facilities at Eden Ranch includes a STEG system where individual house septic tanks discharge to a community lift station.

Treatment Infrastructure

District-owned infrastructure includes the gravity pipes and community pressure-dosed septic system. Septic tanks are owned by individual property owners but maintained by the District via easements. Maintenance includes annual inspections starting three years after the septic tanks are cleaned and pumped. Tanks are pumped when more than 30 percent of the tank volume consists of settled or floating sludge.

Solids Infrastructure

There is no infrastructure associated with treatment of solids at the Eden Ranch treatment facility as accumulated solids in the septic tanks are hauled to a wastewater treatment plant solids handling facility for disposal.

Opportunities for Shared Facilities

The Nevada City treatment facility is the closest regional facility to Eden Ranch and is approximately two miles away. However, there are currently no plans to join these facilities, and no perceived need to do so.

Zone 11 – Higgins Village

Collection Infrastructure

The collection and treatment facilities were last upgraded in 2003 for the purpose of providing sewage collection and treatment to the commercial development at Higgins Corner.

The District does not own the individual business's septic tanks but does access them via an easement and maintains them. The District owns the rest of the collection infrastructure, including the PVC pressurized collection system that discharges directly to the treatment plant. The District annually inspects the individual septic tanks and pumps them when more than 30 percent of the tank volume consists of settled or floating sludge. Property owners are responsible for cleaning their grease traps before the septic tanks.

Treatment Infrastructure

Treatment infrastructure includes the force main and small package treatment plant. The District does not own the property on which the plant sits.

Solids Infrastructure

There is no infrastructure associated with treatment of solids at Higgins Village as accumulated solids are hauled to LWW WWTP for disposal.

Opportunities for Shared Facilities

At the earliest opportunity, this zone will be merged with the Lake of the Pines zone (Zone 2). However, there are no concrete plans to do so at the time of this writing.

Zone 12 – Valley Oak Court

Collection Infrastructure

Valley Oak Court is a STEP system where individual house pump stations discharge through a PVC force main to the community tank. Property owners own the septic tanks and the District maintains them. The District inspect the individual septic tanks annually starting three years after they are cleaned and pumped when more than 30 percent of the tank volume consists of settled or floating sludge.

Treatment Infrastructure

Residential septic tanks are pumped to a conventional biological treatment plant, which includes a 4,000-gallon processing septic tank and pretreatment unit. Effluent is pumped out to a community leach field system.

Solids Infrastructure

There is no infrastructure associated with treatment of solids at Valley Oak Court as accumulated solids in the septic tanks are hauled to a wastewater treatment plant solids handling facility for disposal.

Opportunities for Shared Facilities

Along with Penn Valley (Zone 6), Valley Oak Court will soon (2015-2016) be merged into the Lake Wildwood zone (Zone 1).

8.9 FINANCING

Because financing for individual zones is largely done on an aggregated basis by the Sanitation District, this section will integrate individual zone discussion, as applicable, under each header. If a specific zone is not mentioned, the information applies to all zones.

Revenues and Expenses

Revenues are collected through a special assessment on residential and business property taxes and are therefore subject to Proposition 218 parameters for raising taxes. District revenues and expenses are provided in the Operations and Capital Financial Proforma. The Proforma for FY 2014/2015 is shown in Table 8-7 *Revenues* and Table 8-7 *Expenditures*.[35]

As can be seen in Table 8-8, all zones have balanced budgets or excessive cash reserves except Cascade Shores, which will lose $54,473 during FY 2014/2015. Very few capital improvements are planned for FY 2014/2015. Administrative costs (including salaries and benefits) exceed O&M costs.

Table 8-8 shows that the greatest single O&M cost is utilities, which accounts for 30 percent of the O&M expenditures. The second highest cost is shared O&M, which accounts for 25 percent of the budget. Shared O&M is a shared account used among different zones for equipment and labor that is used in multiple zones.

The bulk of capital improvement money will be expended on Lake of the Pines and Lake Wildwood for debts and interest. Debts and interest on capital improvement projects accounted for $2,035,656, or 30 percent of the total expenditures in the FY 2014/2015 budget.

[35] Nevada County Department of Public Works. Sanitation District No. 1, Operations and Capital Financial Proforma, FY2013/2014 – FY 2017/2018.

Table 8-6: Operations and Capital Financial Proforma, FY 2014-2015: Revenue											
	Total	Lake Wildwood	Lake of the Pines	North San Juan	Gold Creek	Penn Valley	Mtn Lake Estates	Cascade Shores	Eden Ranch	Higgins Village	Valley Oak Ct
6/30/14 cash balance	$4,977,775	$1,175,129	$2,856,178	$168,763	$29,942	$438,912	$35,560	$59,224	$53,328	$117,295	$43,444
O&M Rev.	$4,633,063	$2,161,890	$1,725,568	$69,803	$10,499	$321,117	$23,588	$197,669	$31,878	$80,925	$10,126
Capital Rev.	$1,941,965	$1,008,329	$851,940	$0	$0	$52,440	$0	$29,256	$0	$0	$0
Total 14/15 Programmable Rev.	$6,575,028	$3,170,219	$2,577,508	$69,803	$10,499	$373,557	$23,588	$226,925	$31,878	$80,925	$10,126
Total	**$11,552,803**										

Table 8-7: Operations and Capital Financial Proforma, FY 2014-2015: Expenditures											
Activity	Total	Lake Wildwood	Lake of the Pines	North San Juan	Gold Creek	Penn Valley	Mtn Lake Estates	Cascade Shores	Eden Ranch	Higgins Village	Valley Oak Ct
ADMINISTRATION:											
Salaries & Benefits	$2,099,555	$1,017,509	$658,552	$14,769	$2,749	$184,342	$8,537	$154,379	$17,559	$41,159	$0
Admin Support	$609,282	$312,136	$223,796	$9,209	$4,712	$37,264	$4,283	$9,316	$2,891	$5,140	$535
Total Admin	**$2,708,837**	$1,329,645	$882,348	$23,978	$7,461	$221,606	$12,820	$163,695	$20,450	$46,299	$535
OPERATIONS & MAINTENANCE											
Maintenance Equipment - Equip	$138,850	$64,600	$50,000	$250	$100	$10,000	$3,500	$6,400	$300	$2,500	$1,200
Maintenance Equip - Infrast	$69,000	$40,000	$20,000	$0	$0	$5,000	$0	$4,000	$0	$0	$0
Capital Assets - Minor Project	$199,000	$106,206	$66,924	$3,741	$1,313	$13,632	$1,373	$3,144	$935	$1,433	$299
Professional Services (Hauling/Labs/Bio)	$195,285	$74,160	$53,560	$1,030	$206	$7,304	$1,324	$41,200	$773	$15,450	$278
Rents & Leases	$41,402	$24,468	$10,250	$474	$197	$3,100	$236	$1,809	$273	$579	$16
Spec Dept (Chemicals & Permits)	$187,234	$82,400	$49,440	$9,763	$5,837	$15,965	$2,575	$11,530	$4,325	$4,288	$1,111
Utilities	$612,440	$270,624	$247,731	$4,954	$0	$35,700	$0	$52,207	$1,224	$0	$0
Judgments & Damages (MMPs)	$19,000	$6,000	$0	$0	$0	$0	$0	$13,000	$0	$0	$0
Other O&M	$73,887	$31,106	$31,827	$1,101	$0	$1,648	$111	$7,210	$773	$111	$0
Shared O&M	$523,714	$268,299	$192,366	$7,916	$4,050	$32,031	$3,681	$8,008	$2,485	$4,418	$460
Total O&M	**$2,059,812**	$967,863	$722,098	$29,229	$11,703	$124,380	$12,800	$148,508	$11,088	$28,779	$3,364
CAPITAL IMPROVEMENTS											
Debt & Interest	$2,035,656	$846,792	$1,160,444	$0	$0	$0	$0	$28,420	$0	$0	$0
Capital Projects - Infrastructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital Improvements	$2,035,656	$846,792	$1,160,444	$0	$0	$0	$0	$28,420	$0	$0	$0
Available Revenue	$11,552,803	$4,345,348	$5,433,686	$238,566	$40,441	$812,469	$59,148	$268,149	$85,206	$198,221	$53,570
Total 14/15 Expenditures	$6,804,305	$3,144,300	$2,764,890	$53,207	$19,164	$345,986	$25,620	$340,623	$31,538	$75,078	$3,899
End Cash Balance	**$4,748,498**	**$1,201,048**	**$2,668,796**	**$185,359**	**$21,277**	**$466,483**	**$33,528**	**-$72,474**	**$53,668**	**$123,143**	**$49,671**

Asset Maintenance and Repair

The District dedicates approximately $5,000 each for Lake Wildwood and Lake of the Pines collection systems for annual rehabilitation and repair. This funding is in addition to any major line replacement or lift station upgrades identified in the five-year capital improvement program. The funding has been established to make prioritized line repairs identified during the six-year CCTV condition assessments of the large gravity collection systems. This program prioritizes the repair of structural defects to ensure the system can consistently provide improved service and also prioritizes repair defects such as protruding taps and roots that cause SSOs.

Other infrastructure maintenance and repair is provided through the O&M expenditures portion of the Proforma.

Capital Improvements

The District maintains a five-year Proforma budget which is updated annually. This budget acts as a Capital Improvement Plan in the financial planning for capital improvements. Timing of construction of both new and replacement facilities is based on priority, deficiency, and input from operations staff. Risk assessment, financing, and staffing are also considered in the long-term management of District facilities.

Capital improvements are funded through wastewater rates, wastewater facility connection charges, and municipal bonds. The composition of the finance package for each project is based upon the percentage of new and existing customers that will be served by the new or upgraded facility. The budget is developed from the sewer system rehabilitation and replacement plan and required treatment plant projects.

The District is currently planning the following major capital improvements:

- Penn Valley pipeline to Lake Wildwood.
- Cascade Shores plant conversion to land-based leach field.

The Sanitation District has been awarded a $5 million grant from the RWQCB to fund pipeline construction from Penn Valley to Lake Wildwood, during which the pipeline will also tie into Zone 12, Valley Oak Court.[36]

After the effluent sewage line at the Cascade Shores plant was damaged in a landslide and rebuilt, the discharge requirements changed. The plant was upgraded to meet the new requirements, but the discharge requirements again became more stringent. The District now plans to abandon the plant and build a community land-based leach field that does not carry the stringent requirements that discharge to surface water does. The District has negotiated to purchase 40 acres on which to build the leach field. Since the proposed leach field property has recently closed escrow, the County will now be able to seek

[36] KNCO, ibid.

grant funding for building the leach field. Currently there are 86 connected EDUs at Cascade Shores, so not only is the cost share per customer very high, but the cost to run the plant is also 50 percent more than its annual revenue. The cost for operating a community leach field is about 10 percent of the cost of a plant, so this capital improvement will result in long-term savings.

Long-term Liabilities and Debts

The Sanitation District carries the follows loans as identified in Capital Acquisition and Improvement Budget for FY 2014/2015.

- Zone 1, Lake Wildwood SRF Loan: $762,198
- Zone 1, Lake Wildwood LaSalle Loan: $84,595
- Zone 2, Lake of the Pines LaSalle Loan: $211,486
- Zone 2, Lake of the Pines SRF Loan: $948,958
- Zone 4, NSJ Sewer Assessment: $4,814
- Zone 8, Cascade Shores Debt Assessment: $16,958

Debts and interest on capital improvement projects accounted for $2,035,656, or 30 percent of the total expenditures in the FY 2014/2015 budget. Debts and interest continue to hover around the $2 million mark into the foreseeable future, up though the FY 2017/2018 Proforma.

Cost Avoidance

To save money, lower expenses or improve services at the same costs, the District has brought maintenance and repair operations in-house, employed competitive bidding, and provided more direct oversight of field and supervisory staff. Within the next year or so, the District will also be constructing an in-house water system at Lake of the Pines whereby effluent water will be UV-treated and defoamed and then reused for the treatment process rather than discharged. This project is anticipated to reduce PG&E bills by half, from approximately $20,000 to $10,000.

The 2004 MSR found that the District “should examine additional means of avoiding costs by regionalizing facilities and services as is currently being done with the Placer/Nevada Wastewater Authority.” The District has begun to implement regionalization with Dark Horse being added to Lake of the Pines, and plans to continue to do so with Penn Valley and Valley Oak Court annexed to Lake Wildwood. Also on the horizon but without firm plans as of this writing is the integration of Rincon del Rio and Higgins Marketplace into the Lake of the Pines facility. Because of geographic isolation of most of the other districts, additional regionalization is not considered feasible.

To reduce overhead and operational costs, the District would like to get stormwater permit requirements relaxed or lifted at Lake Wildwood to reduce sampling and monitoring costs, and would like to regionalize all available plants to allow for more efficient operation of remaining facilities.

Rate Restructuring

Customers are billed by EDU. Single-family residential units are therefore be charged for one EDU, for example. Rates vary by zone and are shown in Table 8-9 below. Table 8-9 also shows the rates that are needed in order to balance expenditures with income.

As shown in Table 8-9, the District is currently undercharging some zones and overcharging others. When balanced with needed O&M and capital improvement costs, the rates would be nearly identical to what they are now, taken in sum. However, a more equitable arrangement of rates may be advised once the Cascade Shores conversion to a leach field is implemented.

The District's rate-setting capability is in accordance with Health and Safety Code § 5470 through 5474.10 and subject to Proposition 218. Already high rates in the Cascade Shores Zone 8 in particular make rate increases and likelihood of a passing a Proposition 218 vote unlikely. Please note that the higher rates charged by the Cascade Shores zone are due to economies of scale. Since only 85 EDU's are served, there are fewer households to share the burden of costs.

Table 8-9: Current FY 2014/2015 Sewer Rates and Needed Sewer Rates[37]

Zone No.	Zone Name	O&M	2014/2015 Capital Improvements	2014/2015 Total Current Rate	Needed O&M and Capital	Difference between current and needed rate[38]
1	Lake Wildwood	$712	$283	**$995**	$895	**+$100**
2	Lake of the Pines	$810	$375	**$1,185**	$1,340	**-$155**
4	North San Juan	$785	$0	**$785**	$508	**+$277**
5	Gold Creek	$235	$0	**$235**	$371	**-$136**
6	Penn Valley	$880	$115	**$995**	$865	**+$130**
7	Mountain Lake Estates	$565	$0	**$565**	$499	**+$66**
8	Cascade Shores	$2,231	$214	**$2,445**	$3,520	**-$1,075**
9	Eden Ranch	$1,148	$0	**$1,148**	$1,017	**+$131**
11	Higgins Village (all commercial)	$1,675	$0	**$1,675**	$1,559	**+$116**
12	Valley Oak Court	$2,000	$0	**$2,000**	$1,017	**+$983**
Totals		**$11,041**	**$987**	**$12,028**	**$11,591**	**+$437**

[37] Nevada County Department of Public Works, ibid.; Nevada County Department of Public Works, Sanitation District Sewer Rates, FY 2011/2012- 2012/2013.

[38] A positive number indicate a surplus for the County, while a negative amount indicates a deficit for the County.

8.10 DETERMINATIONS

Growth and Population Projections

1. The Sanitation District currently serves 5,473 residential and 214.8 commercial sewer service connections. The estimated population served is approximately 10,000 people.

2. The population served by the District is largely comprised of residential customers.

3. The District has adequate capacity in all zones except Zone 6 (Penn Valley), but this zone will be merged into the Lake Wildwood treatment facility in Zone 1 in 2015-2016.

4. The District has capacity to serve an additional population of approximately 5,000.

5. Since the 2004 MSR, Zone 12 (Valley Oak Court) was formed with 10 EDUs and Zone 10 (Dark Horse) was dissolved and merged into Zone 2 (Lake of the Pines). Combie Plaza and Cascade Crossing were also constructed and connected to Lake of the Pines.

6. Other than the approved but undeveloped Rincon del Rio in South County near Lake of the Pines, the Sanitation District is not aware of any new major projects under consideration that would require annexation into the District.

7. Rough and Ready, a Disadvantaged Unincorporated Community (DUC) in western Nevada County, has not requested annexation into the Sanitation District. It is four miles from Penn Valley, so any infrastructure improvements to connect these communities would be very costly.

Present and Planned Capacity of Public Facilities

8. Nevada County Sanitation District No. 1 was formed on August 2, 1965, to provide for construction, operation, and maintenance of the Glenbrook Sewer Assessment District. Over the intervening years, the District has created 12 zones supplying wastewater services to various parts of the County.

9. The District currently provides wastewater service to customers in all of its zones.

10. Repairs, maintenance, and replacements will be necessary on an ongoing basis for both wastewater collection and treatment infrastructure.

11. The District operates the following zones with surface water discharge: Zones 1 (Lake Wildwood) under WDR Order R5-2009-0004 and TSO Order R5-2009-0005; Zone 2 (Lake of the Pines) under WDR Order R5-2009-0031; and Zone 8 (Cascade Shores) under WDR Order R5-2008-0111 and TSO Order R5-2010-0909. These orders requires monthly monitoring, testing, and reporting, while the TSOs place a time schedule on the effluent limitations for various constituent compounds.

12. The Penn Valley plant is currently operating under Cease and Desist Order R5-2009-0077 as the plant is now at capacity. However, the Sanitation District has been awarded a $5 million grant from the RWQCB to fund pipeline construction from Penn Valley to Lake Wildwood, during which the pipeline will also tie into Zone 12, Valley Oak Court.

13. The District operates under State regulations for Zones 6 (Penn Valley) and 11 (Higgins Village).

14. For all other zones (4, 5, 7, 9, and 12), which utilize land-based leach fields, the regulatory agency is the Nevada County Environmental Health Department.

15. The District presently has no plans to expand its wastewater treatment facilities.

16. Greater efficiency through regionalization is a high priority, so smaller facilities may be integrated into existing facilities if it is considered feasible to do so, as with consolidation of Penn Valley and Valley Oak Court into Lake Wildwood.

17. LAFCo has adopted has a sphere of influence for each zone. Three zones have spheres larger than their boundaries and may be expanded: Penn Valley, Lake of the Pines, and North San Juan. Although capacity at Penn Valley is currently limited, the pending merger with the Lake Wildwood zone will make an expanded level of capacity available to serve additional connections.

18. Average and peak flows for several zones (Gold Creek, Mountain Lake Estates, Eden Ranch, Higgins Village, and Valley Oak Court) were not readily available from the County during preparation of this MSR update (as shown in Table 8-5). Within the next three years, the County should determine the average and peak flows for these zones and provide a memorandum to Nevada LAFCo with this information.

Financial Ability of Agency to Provide Services

19. The District's sewer rates are collected through a special assessment on residential property taxes for properties within the various service zones.

20. The FY 20141/2015 budgets demonstrates adequate finances for the continued ability of the District to provide services.

21. The current rate structure is adequate to deliver services to all zones on an aggregated basis, but the District has indicated that it would like to redistribute costs more equitably (with needed rates more in line with actual costs for each zone). This action is advised.

22. Funding for capital improvements is planned within the five-year budget, which essentially acts as a Capital Improvement Plan (CIP).

23. The five-year budget identifies infrastructure components that will need to replaced or upgraded in the next four years.

24. The District has implemented cost savings measures and continues to seek opportunities save costs. An in-house water system will soon be constructed at Lake of the Pines. To save money, lower expenses or improve services at the same costs, the District has brought maintenance and repair operations in house, employed competitive bidding, and provided more direct oversight of field and supervisory staff. The District indicates that staffing levels are very lean and that there is no overstaffing in any division.

25. Given the high costs of energy (at 30 percent of the overall budget), the District may also want to consider additional energy savings in the form of renewable energy sources or additional water recycling and sale for irrigation purposes.

26. Rates should continue to be reviewed and adjusted as necessary to fund District costs and provide for capital improvements as needed.

27. The District fees are set through a public process. A nexus study linking new fees to the cost of providing services should be prepared as part of this process. No nexus study was requested or provided as part of this service review.

28. When adopting new fees or assessments for capital improvements, or when increasing rates, the District should consider including escalators and maximum rate provisions in the tax ordinance submitted for voter approval, in order to avoid having to seek voter approval for any future tax increases.

Opportunities for Shared Facilities

29. The 2004 MSR recommended that the District "investigate the potential benefits, if any, of developing sub-regional wastewater treatment facilities for its service area to avoid the reliance on onsite systems." The District has addressed this recommendation by placing a high priority on shared facilities, and intends to regionalize as many facilities as financially and physically feasible. It has begun to do so with incorporation of Dark Horse, Combie Plaza, and Cascade Crossing into the Lake of the Pines facility, and will continue to do so with the 2015-2016 integration of Penn Valley and Valley Oak Court into the Lake Wildwood system. The Higgins Village plant is also planned for incorporation into the Lake Wildwood facility, though funding and planning have not begun. Geographically viable new developments such as Rincon del Rio will also connect to existing facilities (Lake of the Pines).

30. Meetings of the Sanitation Board are held in the Nevada County Board of Supervisors (BOS) chambers during BOS meetings. The Sanitation Board of Directors is comprised of the same members as the BOS. These staff and facility-sharing actions result in cost-savings to residents in the District.

31. All of the Sanitation District's treatment facilities are located on District-owned property with the exception of the North San Juan plant, which is on USDA-owned property, and the Higgins Village plant, which is on private property belonging to the developer of Higgins Village.

Accountability for Community Service Needs, Including Governmental Structure and Operational Efficiencies

32. District staff have indicated that apart from the above-discussed regionalization of facilities, government and operational restructuring is unnecessary at this time.

33. The District is in the process of building an in-house treatment system at Lake of the Pines that will recover effluent water and use it during the treatment process in order to conserve water and energy costs.

34. The District may also want to consider re-use of water for irrigation purposes at Lake Wildwood and Lake of the Pines, which are both golf course communities that use large quantities of water for turf irrigation.

Disadvantaged Unincorporated Communities

35. There are two DUCs which are also legacy communities in the District: North San Juan and Penn Valley. These communities would be eligible for grants that are available only to DUCs that aim to improve quality of effluent.

Any Other Matter Relative to Service Delivery as Required by Commission Policy

36. There are no other aspects of the District's wastewater service that are required by Commission policy to be addressed in this MSR.

REFERENCES

Board of Directors of Nevada County Sanitation District No. 1. Ordinance No. SD-65: "An Ordinance Adding Chapter 8 to the Sanitation District Code [Establishing an Annexation Policy]." April 28, 2009.

Central Valley Regional Water Quality Control Board. Compliance Evaluation Inspection, Nevada County Sanitation District No. 1, Cascade Shores Wastewater Treatment Plant, Nevada County. February 8, 2013.

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Central Valley Regional Water Quality Control Board. Compliance Evaluation Inspections, Nevada County Sanitation District No. 1, Lake Wildwood Wastewater Treatment Plant, Nevada County. February 4, 2013.

Kennedy/Jenks Consultants. Lake Wildwood WWTP Process and Hydraulic Modeling. June 20, 2011.

KNCO. Penn Valley Wastewater Grant Approved, knco.com/penn-valley-wastewater-grant-approved/. May 19, 2014.

Nevada County Board of Supervisors. Staff Report: One Appointment and Two Reappointments to the Kingsbury Greens Community Services District. November 12, 2013.

Nevada County Civil Grand Jury. "Small-Time Sewage is a Big-Time Challenge." May 2006.

Nevada County Department of Public Works, Sanitation District No. 1. Operations and Capital Financial Proforma, FY2013/2014 – FY 2017/2018.

Nevada County Department of Public Works, Wastewater Division. FY 2014/2015 Org Chart.

Nevada County Department of Public Works, Wastewater Division. Request for Information, 2014

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Nevada County Sanitation District No. 1. Sewer EDUs per Zone. 2014.

Nevada County Sanitation District No. 1. Sewer System Management Plan. www.mynevadacounty.com. 2012.

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Nevada Local Agency Formation Commission. Sphere of Influence Updates: Nevada County Sanitation District No. 1 and Kingsbury Greens Community Services District. 2009.

State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Lake Wildwood WWTP. Signed February 24, 2014.

State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Lake of the Pines WWTP. Signed February 24, 2014.

State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: North San Juan WW Facility.

State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Penn Valley WWTP. Signed January 18, 2011.

State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Cascade Shores WWTP. Signed February 24, 2014.

State Water Resources Control Board, Office of Operator Certification. Wastewater Treatment Plant Classification Data Form: Higgins Village WWTP.

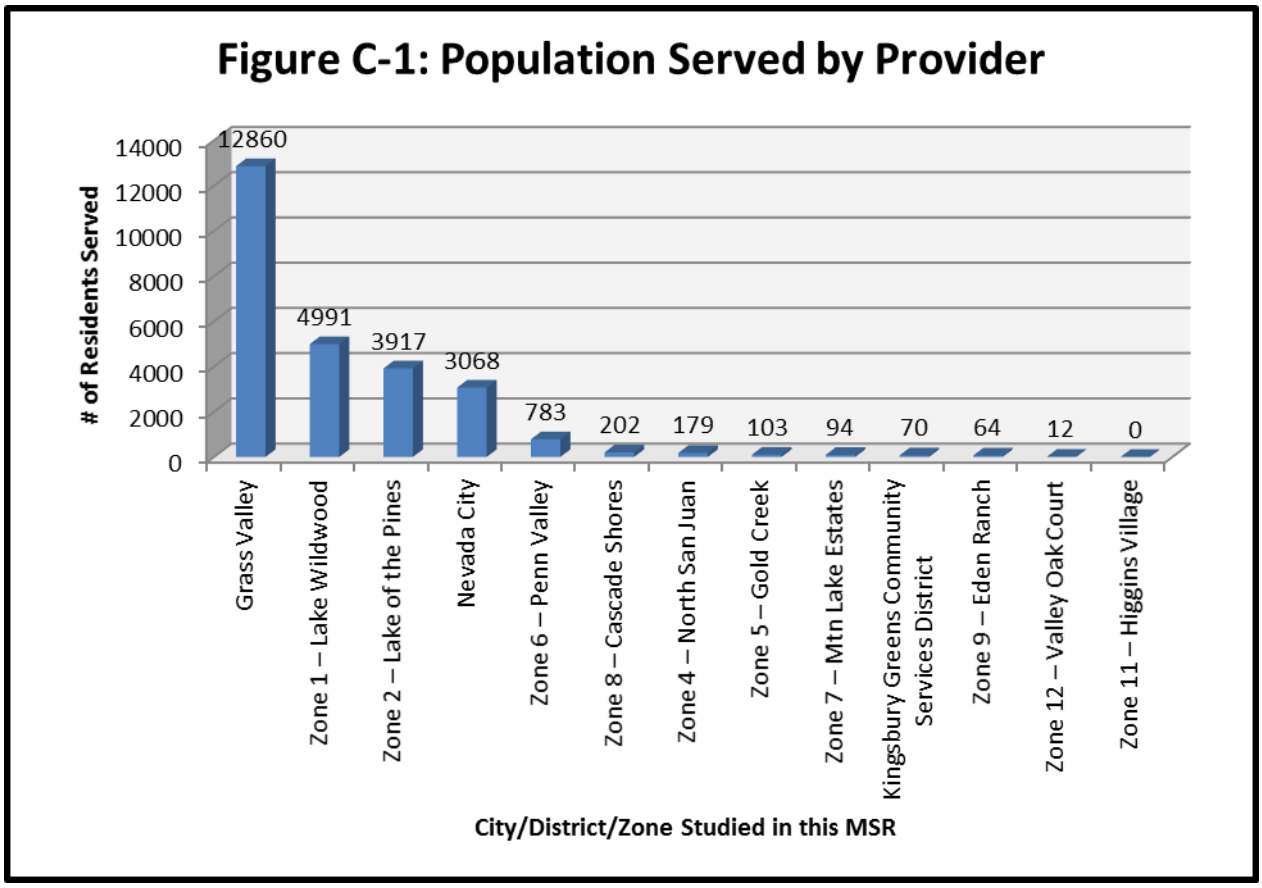
US Census Bureau, American Fact Finder. factfinder2.census.gov.

Chapter 9
CONCLUSIONS AND SUMMARY OF DETERMINATIONS

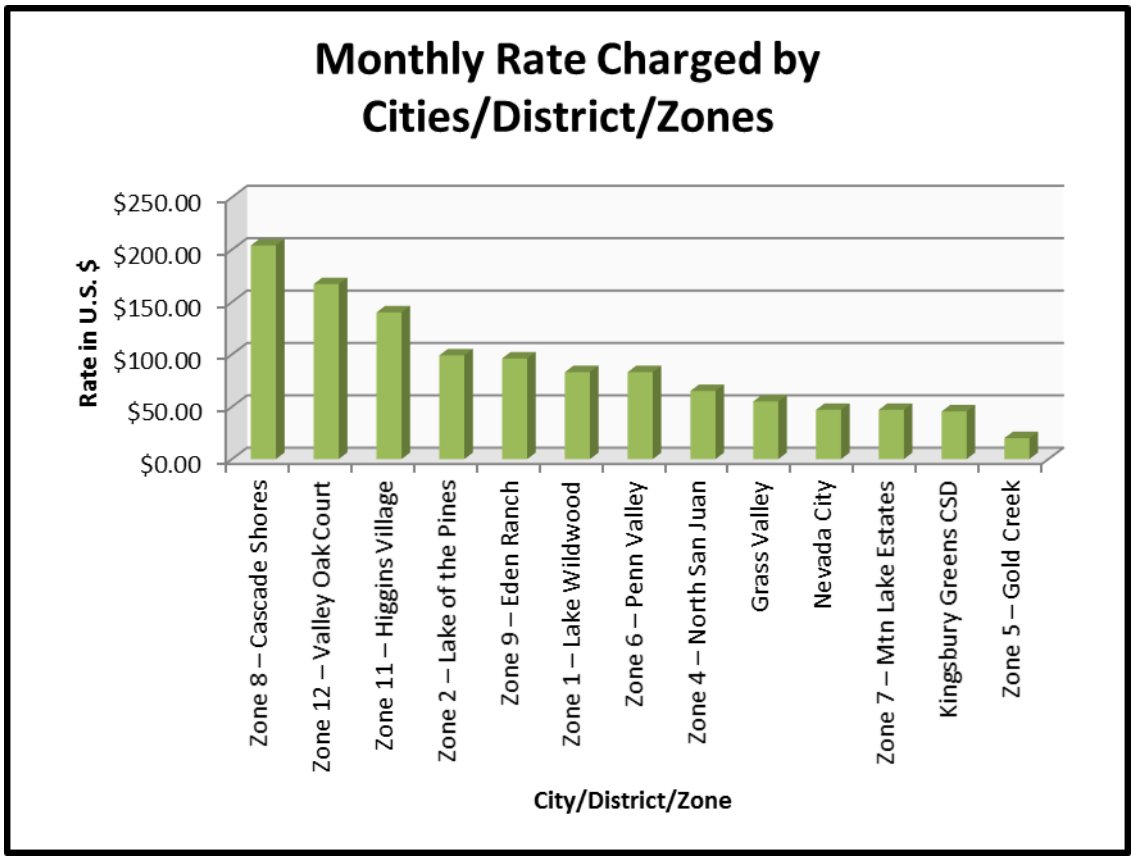
This Municipal Service Review has been prepared in accordance with Section 56430 of the California Government Code. The previous MSR for these four agencies was approved by the Commission in 2004. A sphere of influence is defined by Government code Section 56425 as "a plan for the probable physical boundary and service area of a local agency or municipality." Previous updates to the SOI's for the four agencies were approved by LAFCo as follows:

- County Sanitation District - 2009
- Kingsbury Greens CSD – 2009
- City of Grass Valley – 2011
- City of Nevada City – October 2008

This report presents the findings and conclusions for a Municipal Service Review and Sphere of Influence Update for four agencies: City of Nevada City, City of Grass Valley, Kingsbury Greens CSD, and Nevada County Sanitation District. The largest agency/district considered in this report is the County Sanitation District, which serves ten zones in a discontiguous 8.9-square mile area. The City of Grass Valley serves the largest contiguous area at 5.42 square miles. The smallest district is Kingsbury Greens CSD, which serves 0.013 square mile area. In terms of population, the City of Grass Valley serves the largest population at 12,860 persons. The County Sanitation District serves a total of 10,415 persons. However, it should be noted that Zone 11 (Higgins Village) of the County Sanitation District serves only commercial properties and therefore has no permanent residents, as shown in Figure C-1 below.



There is a large variability in rates charged by the service providers studied in this MSR. The County Sanitation District has the distinction of charging both the highest and the lowest rate for wastewater services. The highest rate, $207 per month, is paid by residents in Sanitation District Zone 8, Cascade Shores. The lowest rate at $20 per month is charged by Sanitation District Zone 5, Gold Creek. The overall rate variability is shown in Figure C-2, below:



Interestingly, the two cities analyzed, Grass Valley and Nevada City, respectively rank first and fourth in terms of population, but rank ninth and tenth in terms of rates charged. The ability to serve a lot of people at a reasonable rate may relate to efficiency in service provision to central urban populations compared to the more rural populations that the County serves.

An amendment to the Sphere of Influence for the subject four agencies is not proposed at this time. However, Appendix 2 does provide options based upon wastewater service provision for future consideration.

The Commission held a public meeting on the Draft MSR/SOI Update on February 19, 2015. The Commission and the public were encouraged to provide comments for staff to review and possibly incorporate into the final document. However, no letters or other public comments on the Draft MSR/SOI Update were received during the public comment period. A second public meeting was held on April 23, 2015.

This MSR/SOI Update was prepared to ensure current information for analysis. The major issues that arose during the analysis are summarized in the Executive Summary and are discussed in detail in the associated service provider review chapters. The analysis presented in this MSR supports the following determinations:

NEVADA CITY DETERMINATIONS

Growth and Population Projections

1. The current (year 2014) population of Nevada City is 3,016 permanent residents, which represents a decline of 57 persons (1.8 percent) from the previous year.

2. Since the year 1990, the City's residential population has remained fairly stable, hovering around 3,000 persons.

3. In addition to the residential population, the City's infrastructure also supports a significant daytime worker population and an evening/weekend festival population.

4. Projections of future population in Nevada City were not readily available. This MSR calculates an average annual future growth rate of 0.0089 percent, consistent with the City's Housing Element. This provides a calculated estimate of future population level of 3,152 residents in the year 2020.

Disadvantaged Unincorporated Communities

5. The median household income (MHI) in the City in 2010 was $55,192. This is higher than the DUC threshold MHI of less than $48,706 (80 percent of the Statewide MHI).

6. No disadvantaged unincorporated communities have been identified within Nevada City, its SOI, or adjacent areas.

Present and Planned Capacity of Public Facilities

7. The City serves 1,380 sewer connections. One-third of the connections serve commercial/institutional users. The remaining two-thirds are associated with residences.

8. Parts of Nevada City's sewer faclities and infrastructure were installed in the mid-1800s. Accordingly, preventative maintenance and scheduled replacement of aging infrastructure is critical. For example, sewer lines used for collection within the City have a broad range of ages and sizes. Since some lateral and trunk lines are older and/or smaller, replacement infrastructure will be needed in the upcoming years.

9. In 2006, Nevada City completed a comprehensive upgrade and expansion of its WWTP. The WWTP now has a permitted average dry weather capacity of 0.69 mgd. Current average dry weather flow ranges from 0.38 to 0.47 mgd, significantly lower than permitted capacity. The 2006 expansion and upgrade increased treatment efficiency and converted the process to continuous flow activated sludge.

10. The WWTP has sufficient capacity to serve its existing customers and new customers for the next ten years (through the year 2025). It is recommended that within the next ten years, the

City conduct an analysis, with associated documentation, to consider the capacity of the WWTP in light of the City's annexation schedule, general plan projected buildout, and projected population. Alternatively, the City could consider improvement to its aging sewer infrastructure with the goal of greatly reducing the inflow and infiltration resulting in lower flow requirements at the WWTP.

11. The City is planning to prepare a sewer specific capital improvement plan which will prioritize needed infrastructure upgrades and replacements. These actions will help the City actively plan for and perform replacement and maintenance of its collection and treatment systems to stay current with state regulations and service needs.

Financial Ability of Agency to Provide Services

12. On an annual basis, the City adopts a comprehensive budget and receives an audited financial statement.

13. The Wastewater Enterprise Fund is managed efficiently. However, it is not clear whether current revenues and the current rate structure are sufficient to provide for necessary capital improvements to upgrade aging and/or undersized infrastructure. To address this issue, the City is preparing a Wastewater Rate Restructuring Methodology and Study to the City Council.

14. Within the next several years, the City plans to develop a sewer specific Capital Improvement Plan to prioritize infrastructure upgrades. It is recommended that this plan be considered in light of any rate restructuring proposal and other potential funding sources to ensure that the scope of the proposed projects is congruent with funding availability.

Opportunities for Shared Facilities

15. No opportunities for shared facilities were identified by staff or in the preparation of this MSR. Nevada City has a solid track record of working cooperatively with neighboring local agencies on other issues.

Accountability for Community Service Needs

16. Nevada City has a five-member City Council elected at large to staggered four-year terms of office. City Council meets in the downtown City Hall on a regular basis. City meetings (including the Council and the Planning Commission) are noticed according to the Brown Act and the meetings provide regular public comment opportunities.

17. The City has greatly improved its communications and transparency through the development of its website (www.nevadacityca.gov/). The website is one tool that the City uses to disseminate information and to encourage participation.

Any Other Matters Related to Service Delivery as Required by LAFCo Policy

18. There are no other aspects of wastewater service required to be addressed in this report by LAFCo policies that would affect delivery of services.

CITY OF GRASS VALLEY DETERMINATIONS

Growth and Population Projections

19. The City bases growth and population projections on its General Plan.

20. Although the City has experienced a slight decrease in population since 2010, overall average growth rates for the next 20 years are estimated at two percent, which is consistent with the City's General Plan and Housing Element.

21. The City is in the beginning phases of updating its Housing Element and SSMP, which will include updating population and service projections.

Disadvantaged Unincorporated Communities

22. The MHI for Grass Valley was $35,385 in 2010, which qualifies the community as a disadvantaged community per the State Water Code.

23. Within its sphere of influence, the City has identified the Alta Hill area as a "Fringe Community" or DUC. Nearly all of the homes in this fringe community have private septic systems. The City's Wastewater Master Plan includes a plan to serve this area in the future. Although the area is well-served with basic infrastructure and no health or safety issues have been identified, the City does plan to provide sewer service to this DUC if there is need to do so in the future.

Present and Planned Capacity of Public Facilities

24. Since the adoption of the 2004 MSR, the City has completed a comprehensive upgrade and expansion of its WWTP, including installation of a UV disinfection system (2009). The WWTP now has a permitted average dry weather capacity of 2.78 mgd, which is equivalent to 14,555 EDUs.

25. The City's 2009 upgrade to the WWTP included the addition of UV disinfection to the process and an upgrade to the biological nitrogen removal process.

26. The City's current WWTP capacity has between 4,000 and 4,400 EDUs available based on average annual flows, and has sufficient capacity to serve the City's population. Additionally,

once the discharges received from the Drew Tunnel are diverted to Newmont USA's own treatment facility, the City's WWTP capacity will increase to approximately 6,000 EDUs.

27. The WWTP is currently adequate to accommodate treatment capacity for the projected 2020 General Plan, which includes the buildout plans for the three major SDAs within the SOI.

Financial Ability of Agency to Provide Services

28. The City prepares a comprehensive annual budget and financial statement, and has adopted financial policies and procedures to ensure adequate funds concurrent with need.

29. The Wastewater Enterprise Fund operates in a cost effective manner. Revenues and the current rate structure are adequate to operate the wastewater system and allow for necessary capital improvements.

30. The City annually updates its CIP and identifies collection and treatment projects and potential funding sources.

31. A small number of parcels within the Glenbrook Basin are still included in the County Sanitation District Glenbrook Zone. As these parcels are annexed to the City, LAFCo should ensure they are concurrently detached from the County Sanitation District Glenbrook Zone.

Opportunities for Shared Facilities

32. No opportunities for shared facilities were identified by staff or in the preparation of this MSR.

Accountability for Community Service Needs

33. The City Council is locally accountable, and adheres to applicable government code sections, has open and accessible meetings, disseminates information, and encourages participation.

34. The City demonstrates accountability through its public meeting and transparency policies, adherence to applicable government code sections, has open and accessible meetings, disseminates information, and encourages public participation through establishment of regular public comment opportunities.

35. Because portions of the City's sewer faclities and infrastructure date back to the mid-20th century, both preventative maintenance and scheduled replacement of aging infrastructure is critical. The City actively plans for and performs replacement and maintenance of its collection and treatment systems to stay current with state regulations and service needs.

Any Other Matter Relative to Service Delivery as Required by Commission Policy

36. There are no other aspects of the District's wastewater service that are required by Commission policy to be addressed in this MSR.

KINGSBURY GREENS CSD DETERMINATIONS

Growth and Population Projections

1. Kingsbury Greens CSD currently serves 45 residential sewer service connections. Estimated population within the service area is 70.
2. The population served by the District is largely comprised of residential rentals.
3. The District currently has the capacity for a flow rate of 11,500 gallons per day (gpd), while the average existing flow rate is 3,100 gpd, and last year's peak flow was 5,100 gpd.
4. The District is projected to have a zero population growth rate. Since the 2004 MSR, no new area has been annexed, and the service area includes an existing development with no additional room for more development.

Disadvantage Unincorporated Communities

5. In August 2013 the Nevada County Planning Department, in consultation with Nevada LAFCo staff, evaluated 42 potential legacy communities within Nevada County. Of the original list of 42 potential legacy communities, the County found that five met the definition of a DUC per SB 244. Additionally, the Department of Water Resources has identified the same five DUCs in Nevada County as the Planning Department and LAFCo. Kingsbury Greens was not one of these five because it did not meet the definition of a DUC.

Present and Planned Capacity of Public Facilities

6. The District was established in 1978 to provide sewer service to the Kingsbury Condominium project, a 45-unit complex of 2-bedroom single-family attached condominium units in northern Alta Sierra.
7. The District currently provides wastewater service to its customers.
8. Repairs and replacements will be necessary on an ongoing basis for both wastewater collection, treatment, and infrastructure.
9. The District operates under Reporting and Monitoring Program No. 95-238, which requires monthly monitoring, testing, and reporting. The Central Valley RWQCB does not routinely

inspect the facility, which is found to be in compliance and has not received any cease and desist orders.

10. The District has no plans to expand its wastewater treatment facility, and serves customers only within its service area.

Financial Ability of Agency to Provide Services

11. The District's operations and maintenance activities are funded through a special assessment on residential property taxes for properties within the service area.

12. The FY 2011-2012 through 2014-2015 budgets demonstrates adequate finances for the continued ability of the District to provide services, with no substantial surplus.

13. The District reported that the current financing level is adequate to deliver services presently.

14. Funding for capital improvements to the wastewater treatment plant comes from the District's general fund, which consists of unassigned monies not reserved for any specific purpose other than operational needs.

15. The June 2014 Capital Improvement Plan (CIP) identifies structural components that will need to replaced in the next four years. The CIP should be expanded to include further future dates of capital replacement and repair needs.

16. Rates should continue to be reviewed and adjusted as necessary to fund District costs and provide for capital improvements as needed.

17. The District fees are set through a public process, and it is assumed that a nexus study for linking new fees to the cost of providing services has been prepared. No nexus study was requested or provided as part of this service review.

18. To improve operational efficiency and strengthen internal controls, a Board member should initial and date invoices prior to payment, include the fund balance in the Nevada County Treasury and the accounting records, and report the balance regularly at Board meetings. These actions can help to prevent fraudulent activity and errors in the account.

19. The District should hire an accountant knowledgeable about generally accepted accounting principles to prepare the District's financial statements rather than relying on the auditor to do that.

20. When adopting new fees or assessments for capital improvements, or when increasing rates, Kingsbury Greens CSD should consider including escalators and maximum rate provisions in the tax ordinance submitted for voter approval, in order to avoid having to seek voter approval for any future tax increases.

Opportunities for Shared Facilities

21. The District does not share facilities, staff, or other resources with other districts, but it does share some components with the Kingsbury Greens Homeowners Association, such as the

meeting facility and an umbrella insurance policy. The treatment plant and related collection system is also located on HOA property. This sharing results in cost savings to the CSD.

22. The revenue per EDU for the District is high due in part to increased costs associated with operating and maintaining a small district. For smaller agencies, it is generally more difficult to reach economies of scale and still comply with regulatory requirements.

Accountability for Community Service Needs

23. In 1979 LAFCo approved annexation of the territory to the County Sanitation District in order to comply with Central Valley RWQCB requirements, and in 1995 the territory was detached from the Sanitation District and a CSD formed. In 2007 the CSD applied for re-annexation to the County Sanitation District but the application was deemed incomplete.

24. The District has difficulty recruiting members to the Board of Directors. One position has remained vacant for some time and another has recently become vacant. Several CSD Board members are also on the HOA Board.

25. Without a quorum on the Board of Directors, the District will have difficulty maintaining operational status.

26. The CSD would achieve greater certainty of continued operations by transferring administrative responsibility to the County Sanitation District. The CSD Board should consider applying to LAFCo for re-annexation to the County Sanitation District.

27. Though not the recommended alternative due to the infrastructure (piping) costs, and the uncertainty or willingness of the City of Grass Valley to participate, the Board of Directors may also consider piping untreated effluent to the City of Grass Valley wastewater treatment facility (3.5 miles to the north) for treatment and disposal. The District may also be eligible for grant and/or loan funds for this purpose.

Any Other Matter Relative to Service Delivery as Required by Commission Policy

28. There are no other aspects of the District's wastewater service that are required by Commission policy to be addressed in this MSR.

NEVADA COUNTY SANITATION DISTRICT DETERMINATIONS

Growth and Population Projections

29. The Sanitation District currently serves 5,473 residential and 214.8 commercial sewer service connections. The estimated population served is approximately 10,000 people.

30. The population served by the District is largely comprised of residential customers.

31. The District has adequate capacity in all zones except Zone 6 (Penn Valley), but this zone will be merged into the Lake Wildwood treatment facility in Zone 1 in 2015-2016.

32. The District has capacity to serve an additional population of approximately 5,000.

33. Since the 2004 MSR, Zone 12 (Valley Oak Court) was formed with 10 EDUs and Zone 10 (Dark Horse) was dissolved and merged into Zone 2 (Lake of the Pines). Combie Plaza and Cascade Crossing were also constructed and connected to Lake of the Pines.

34. Other than the approved but undeveloped Rincon del Rio in South County near Lake of the Pines, the Sanitation District is not aware of any new major projects under consideration that would require annexation into the District.

35. Rough and Ready, a Disadvantaged Unincorporated Community (DUC) in western Nevada County, has not requested annexation into the Sanitation District. It is four miles from Penn Valley, so any infrastructure improvements to connect these communities would be very costly.

Present and Planned Capacity of Public Facilities

36. Nevada County Sanitation District No. 1 was formed on August 2, 1965, to provide for construction, operation, and maintenance of the Glenbrook Sewer Assessment District. Over the intervening years, the District has created 12 zones supplying wastewater services to various parts of the County.

37. The District currently provides wastewater service to customers in all of its zones.

38. Repairs, maintenance, and replacements will be necessary on an ongoing basis for both wastewater collection and treatment infrastructure.

39. The District operates the following zones with surface water discharge: Zones 1 (Lake Wildwood) under WDR Order R5-2009-0004 and TSO Order R5-2009-0005; Zone 2 (Lake of the Pines) under WDR Order R5-2009-0031; and Zone 8 (Cascade Shores) under WDR Order R5-2008-0111 and TSO Order R5-2010-0909. These orders requires monthly monitoring, testing, and reporting, while the TSOs place a time schedule on the effluent limitations for various constituent compounds.

40. The Penn Valley plant is currently operating under Cease and Desist Order R5-2009-0077 as the plant is now at capacity. However, the Sanitation District has been awarded a $5 million grant from the RWQCB to fund pipeline construction from Penn Valley to Lake Wildwood, during which the pipeline will also tie into Zone 12, Valley Oak Court.

41. The District operates under State regulations for Zones 6 (Penn Valley) and 11 (Higgins Village).

42. For all other zones (4, 5, 7, 9, and 12), which utilize land-based leach fields, the regulatory agency is the Nevada County Environmental Health Department.

43. The District presently has no plans to expand its wastewater treatment facilities.

44. Greater efficiency through regionalization is a high priority, so smaller facilities may be integrated into existing facilities if it is considered feasible to do so, as with consolidation of Penn Valley and Valley Oak Court into Lake Wildwood.

45. LAFCo has adopted has a sphere of influence for each zone. Three zones have spheres larger than their boundaries and may be expanded: Penn Valley, Lake of the Pines, and North San Juan. Although capacity at Penn Valley is currently limited, the pending merger with the Lake Wildwood zone will make an expanded level of capacity available to serve additional connections.

46. Average and peak flows for several zones (Gold Creek, Mountain Lake Estates, Eden Ranch, Higgins Village, and Valley Oak Court) were not readily available from the County during preparation of this MSR update (as shown in Table 8-5). Within the next three years, the County should determine the average and peak flows for these zones and provide a memorandum to Nevada LAFCo with this information.

Financial Ability of Agency to Provide Services

47. The District's sewer rates are collected through a special assessment on residential property taxes for properties within the various service zones.

48. The FY 20141/2015 budgets demonstrates adequate finances for the continued ability of the District to provide services.

49. The current rate structure is adequate to deliver services to all zones on an aggregated basis, but the District has indicated that it would like to redistribute costs more equitably (with needed rates more in line with actual costs for each zone). This action is advised.

50. Funding for capital improvements is planned within the five-year budget, which essentially acts as a Capital Improvement Plan (CIP).

51. The five-year budget identifies infrastructure components that will need to replaced or upgraded in the next four years.

52. The District has implemented cost savings measures and continues to seek opportunities save costs. An in-house water system will soon be constructed at Lake of the Pines. To save money, lower expenses or improve services at the same costs, the District has brought maintenance and repair operations in house, employed competitive bidding, and provided more direct oversight

of field and supervisory staff. The District indicates that staffing levels are very lean and that there is no overstaffing in any division.

53. Given the high costs of energy (at 30 percent of the overall budget), the District may also want to consider additional energy savings in the form of renewable energy sources or additional water recycling and sale for irrigation purposes.

54. Rates should continue to be reviewed and adjusted as necessary to fund District costs and provide for capital improvements as needed.

55. The District fees are set through a public process. A nexus study linking new fees to the cost of providing services should be prepared as part of this process. No nexus study was requested or provided as part of this service review.

56. When adopting new fees or assessments for capital improvements, or when increasing rates, the District should consider including escalators and maximum rate provisions in the tax ordinance submitted for voter approval, in order to avoid having to seek voter approval for any future tax increases.

Opportunities for Shared Facilities

57. The 2004 MSR recommended that the District "investigate the potential benefits, if any, of developing sub-regional wastewater treatment facilities for its service area to avoid the reliance on onsite systems." The District has addressed this recommendation by placing a high priority on shared facilities, and intends to regionalize as many facilities as financially and physically feasible. It has begun to do so with incorporation of Dark Horse, Combie Plaza, and Cascade Crossing into the Lake of the Pines facility, and will continue to do so with the 2015-2016 integration of Penn Valley and Valley Oak Court into the Lake Wildwood system. The Higgins Village plant is also planned for incorporation into the Lake Wildwood facility, though funding and planning have not begun. Geographically viable new developments such as Rincon del Rio will also connect to existing facilities (Lake of the Pines).

58. Meetings of the Sanitation Board are held in the Nevada County Board of Supervisors (BOS) chambers during BOS meetings. The Sanitation Board of Directors is comprised of the same members as the BOS. These staff and facility-sharing actions result in cost-savings to residents in the District.

59. All of the Sanitation District's treatment facilities are located on District-owned property with the exception of the North San Juan plant, which is on USDA-owned property, and the Higgins Village plant, which is on private property belonging to the developer of Higgins Village.

Accountability for Community Service Needs, Including Governmental Structure and Operational Efficiencies

60. District staff have indicated that apart from the above-discussed regionalization of facilities, government and operational restructuring is unnecessary at this time.

61. The District is in the process of building an in-house treatment system at Lake of the Pines that will recover effluent water and use it during the treatment process in order to conserve water and energy costs.

62. The District may also want to consider re-use of water for irrigation purposes at Lake Wildwood and Lake of the Pines, which are both golf course communities that use large quantities of water for turf irrigation.

Disadvantaged Unincorporated Communities

63. There are two DUCs which are also legacy communities in the District: North San Juan and Penn Valley. These communities would be eligible for grants that are available only to DUCs that aim to improve quality of effluent.

Any Other Matter Relative to Service Delivery as Required by Commission Policy

64. There are no other aspects of the District's wastewater service that are required by Commission policy to be addressed in this MSR.

Chapter 10
COMMENTS RECEIVED AND RESPONSES TO COMMENTS

This Chapter was reserved to discuss any public comments received on this document during the public comment period. However, no public comments were received. The Preliminary Draft MSR/SOI Update was distributed to the four service providers described in this MSR and it was posted to LAFCo's website in early February 2015. The Commission held a public meeting on the Preliminary Draft MSR/SOI Update on February 19, 2015. The public was encouraged to provide comments for staff to review and possibly incorporate into the final document. However, no letters or other public comments on the Draft MSR/SOI Update were received. At the February 19, 2015 public meeting, several Commissioners provided minor comments which were addressed via supplemental text to appendices 2, 3, and 4. An updated Public Review Draft MSR was posted to LAFCo's website in early April 2015. The Commission held its second public meeting on this MSR on April 23, 2015.

Chapter 11
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Chapter 12
GLOSSARY

Annexation: The annexation, inclusion, attachment, or addition of territory to a city or district.

Average base flow (ABF): Flow in the sanitary sewer during dry-weather months, measured when no appreciable rain is falling. Base flow consists of sanitary flow plus groundwater infiltration.

Average dry-weather flow (ADWF): The 30-day rolling average wastewater flow from May through October.

Average wet-weather flow (AWWF): The 30-day rolling average wastewater flow from November through April.

Bond: An interest-bearing promise to pay a stipulated sum of money, with the principal amount due on a specific date. Funds raised through the sale of bonds can be used for various public purposes.

Buildout: The maximum development potential when all lands within an area have been converted to the maximum density allowed under the General Plan.

Board of Directors: The legislative body or governing board of a district.

Board of Supervisors: The elected board of supervisors of a county.

City: Any charter or general law city.

Community Services District (CSD): A geographic subarea of a county used for planning and delivery of parks, recreation, and other human services based on an assessment of the service needs of the population in that subarea. A CSD is a taxation district with independent administration.

Consolidation: The uniting or joining of two or more districts into a single new successor district. In the case of consolidation of special districts, all of those districts shall have been formed pursuant to the same principal act.

Contiguous: In the case of annexation, territory adjacent to an agency to which annexation is proposed. Territory is not contiguous if the only contiguity is based upon a strip of land more than 300 feet long and less than 200 feet wide.

Cost avoidance: Actions to eliminate unnecessary costs derived from, but not limited to, duplication of service efforts, higher than necessary administration/operation cost ratios, use of outdated or deteriorating infrastructure and equipment, underutilized equipment or buildings or facilities, overlapping/inefficient service boundaries, inefficient purchasing or budgeting practices, and lack of economies of scale.

Crown (of the sewer): The upper portion of the sewer pipes.

Design flow: The selected flow condition for wastewater collection system design, determined by adding corresponding peak sanitary flow and peak groundwater infiltration. This is also referred to as peak dry-weather flow.

Design storm: An abstraction based on historical data that determines the amount of stormwater inflow and rainfall-dependent infiltration.

Detachment: The detachment, deannexation, exclusion, deletion, or removal from a city or district of any portion of the territory of that city or district.

Development Fee: A fee charged to the developer of a project by a county, or other public agency as compensation for otherwise-unmitigated impacts the project will produce. California Government Code Section 66000, et seq., specifies that development fees shall not exceed the estimated reasonable cost of providing the service for which the fee is charged. To lawfully impose a development fee, the public agency must verify its method of calculation and document proper restrictions on use of the fund.

Dissolution: The dissolution, disincorporation, extinguishment, and termination of the existence of a district and the cessation of all its corporate powers, except for the purpose of winding up the affairs of the district.

District or special District: An agency of the state, formed pursuant to general law or special act, for the local performance of governmental or proprietary functions within limited boundaries. "District" or "special district" includes a county service area.

District of limited Powers: An airport district, community services district, municipal utility district, public utilities district, fire protection district, harbor district, port district, recreational harbor district, small craft harbor district, resort improvement district, library district, local hospital district, local health district, municipal improvement district formed pursuant to any special act, municipal water district, police protection district, recreation and park district, garbage disposal district, garbage and refuse disposal district, sanitary district, or county sanitation district.

Dissolution: The termination of the existence of a district.

Dry-weather flow: Wastewater flow monitored during the dry season, occurring May through October. Consists of sanitary flow and groundwater infiltration.

Excessive infiltration and inflow: The quantities of infiltration/ inflow that can be economically eliminated from a wastewater collection system by rehabilitation, as determined by a cost-effective analysis.

Formation: The formation, incorporation, organization, or creation of a district.

Function: Any power granted by law to a local agency or a county to provide designated governmental or proprietary services or facilities for the use, benefit, or protection of all persons or property.

Functional revenues: Revenues generated from direct services or associated with specific services, such as a grant or statute, and expenditures.

FY: Fiscal year.

General plan: A document containing a statement of development policies including a diagram and text setting forth the objectives of the plan. The general plan must include certain state mandated elements related to land use, circulation, housing, conservation, open-space, noise, and safety.

General revenues: Revenues not associated with specific services or retained in an enterprise fund.

Groundwater: Water under the earth's surface, often confined to aquifers capable of supplying wells and springs.

Incorporation: The incorporation, formation, creation, and establishment of a city with corporate powers. Any area proposed for incorporation as a new city must have at least 500 registered voters residing within the affected area at the time commission proceedings are initiated.

Independent Special District: Any special district having a legislative body all of whose members are elected by registered voters or landowners within the district, or whose members are appointed to fixed terms, and excludes any special district having a legislative body consisting, in whole or in part, of ex officio members who are officers of a county or another local agency or who are appointees of those officers other than those who are appointed to fixed terms. "Independent special district" does not include any district excluded from the definition of district contained in §56036.

Infiltration: The water entering a sewer system and service connections from the ground, through such means as, but not limited to, defective pipes, pipe joints, connections, or manhole walls. Infiltration does not include, and is distinguished from, inflow.

Infiltration and inflow (I&I): The collective term used to describe the extraneous flow in a wastewater collection system from both rainfall-dependent infiltration and inflow or groundwater infiltration.

Infrastructure: Public services and facilities, such as pipes, canals, levees, water-supply systems, other utility, systems, and roads.

LAFCo: Local Agency Formation Commission.

Local accountability and governance: A style of public agency decision making, operation and management that includes an accessible staff, elected or appointed decision-making body and decision making process, advertisement of, and public participation in, elections, publicly disclosed budgets, programs, and plans, solicited public participation in the consideration of work and infrastructure plans; and regularly evaluated or measured outcomes of plans, programs or operations and disclosure of results to the public.

Local agency: A city, county, or special district or other public entity, which provides public services.

Management Efficiency: The organized provision of the highest quality public services with the lowest necessary expenditure of public funds. An efficiently managed entity (1) promotes and demonstrates implementation of continuous improvement plans and strategies for budgeting, managing costs, training and utilizing personnel, and customer service and involvement, (2) has the ability to provide service over the short and long term, (3) has the resources (fiscal, manpower, equipment, adopted service or work plans) to provide adequate service, (4) meets or exceeds environmental and industry service standards, as feasible considering local conditions or circumstances, (5) and maintains adequate contingency reserves.

Merger: The termination of the existence of a district, and the assumption of the district's responsibilities by a city.

Municipal services: The full range of services that a public agency provides, or is authorized to provide, except general county government functions such as courts, special services and tax collection. As understood under the CKH Act, this includes all services provided by Special Districts under California law.

Municipal Service Review (MSR): A study designed to determine the adequacy of governmental services being provided in the region or sub-region. Performing service reviews for each city and special district within the county may be used by LAFCO, other governmental agencies, and the public to better understand and improve service conditions.

Ordinance: A law or regulation set forth and adopted by a governmental authority.

Peak flow: Maximum measured daily flow. Commonly measured in cubic feet per second (cfs). Typically occurs during wet-weather events and can also be referred to as peak wet-weather flow.

Peak dry-weather flow (PDWF): Peak daily sanitary flow plus groundwater infiltration.

Peak wet-weather flow (PWWF): Peak daily wet-weather flow plus peak rainfall-dependent infiltration and inflow from rainfall events.

Peaking Factor: The ratio of peak hourly wet-weather flow to base flow.

Per Capita Water Use: The water produced by or introduced into the system of a water supplier divided by the total residential population; normally expressed in gallons per capita per day (gpcd).

pH: A measure of the relative acidity or alkalinity of water. Water with a pH of 7 is neutral; lower pH levels indicate increasing acidity, while pH levels higher than 7 indicate increasingly basic solutions.

Plan of reorganization: A plan or program for effecting reorganization and which contains a description of all changes of organization included in the reorganization and setting forth all terms, conditions, and matters necessary or incidental to the effectuation of that reorganization.

Potable Water: Water of a quality suitable for drinking.

Principal act: In the case of a district, the law under which the district was formed and, in the case of a city, the general laws or a charter, as the case may be.

Principal LAFCO for municipal service review: The LAFCO with the lead responsibility for a municipal service review. Lead responsibility can be determined pursuant to the CKH Act definition of a Principal LAFCO as it applies to government organization or reorganization actions, by negotiation, or by agreement among two or more LAFCOs.

Proceeding: A course of action. Procedures.

Public agency: The state or any state agency, board, or commission, any city, county, city and county, special district, or other political subdivision, or any agency, board, or commission of the city, county, city and county, special district, or other political subdivision.

Rainfall-dependent infiltration and inflow (RDI/I): Rainfall runoff from both infiltration and inflow sources that enter the wastewater collection system during and shortly after a rain event. RDI/I consists of stormwater inflow and rainfall-dependent infiltration.

Rate restructuring: Rate restructuring does not refer to the setting or development of specific rates or rate structures. During a municipal service review, LAFCO may compile and review certain rate related data, and other information that may affect rates, as that data applies to the intent of the CKH Act (§56000, §56001, §56301), factors to be considered (§56668), SOI determinations (§56425) and all required municipal service review determinations (§56430). The objective is to identify opportunities to positively impact rates without adversely affecting service quality or other factors to be considered.

Reorganization: Two or more changes of organization initiated in a single proposal.

Responsible LAFCO: The LAFCO of a county other than the Principal County that may be impacted by recommendations, determinations or subsequent proposals elicited during a municipal service review being initiated or considered by the Lead LAFCO.

Retained earnings: The accumulated earnings of an enterprise or intragovernmental service fund which have been retained in the fund and are not reserved for any specific purpose (debts, planned improvements, and contingency/emergency).

Reserve: (1) For governmental type funds, an account used to earmark a portion of fund balance, which is legally or contractually restricted for a specific use or not appropriable for expenditure. (2) For proprietary type/enterprise funds, the portion of retained earnings set aside for specific purposes. Unnecessary reserves are those set aside for purposes that are not well defined or adopted or retained earnings that are not reasonably proportional to annual gross revenues.

RWQCB: Regional Water Quality Control Board.

SCADA: Acronym for Supervisory Control and Data Acquisition; a software application program used for process control and to gather real time data from remote locations. The SCADA System consists of hardware and software components. The hardware collects and feeds data into a computer with SCADA software installed. The function of SCADA is recording and logging all events in a file that is stored in a hard disk or sending them to a printer. If conditions become hazardous, SCADA sounds warning alarm.

Service lateral: A sewer connecting a building or house to the mainline sewer.

Service review: A study and evaluation of municipal service(s) by specific area, subregion or region culminating in written determinations regarding seven specific evaluation categories.

Sewage: Sewage is the wastewater released by residences, businesses and industries in a community. It is 99.94 percent water, with only 0.06 percent of the wastewater dissolved and suspended solid material. The cloudiness of sewage is caused by suspended particles which in untreated sewage ranges from 100 to 350 mg/l.

Sewer Information Maintenance and Management System (SIMMS): A computer program that provides a means of tracking and organizing sewer maintenance schedules.

Special Reorganization: A reorganization that includes the detachment of territory from a city or city and county and the incorporation of that entire detached territory as a city.

Specific plan: A policy statement and implementation tool that is used to address a single project or planning problem. Specific plans contain concrete standards and development criteria that supplement those of the general plan.

Sphere of influence (SOI): A plan for the probable physical boundaries and service area of a local agency, as determined by the LAFCO.

Sphere of influence determinations: In establishing a sphere of influence, the Commission must consider and prepare written determinations related to present and planned land uses, need and capacity of public facilities, and existence of social and economic communities of interest.

Stormwater runoff: Rainwater which does not infiltrate into the soil and runs off the land.

Subject agency: Each district or city for which a change of organization is proposed or provided in a reorganization or plan of reorganization.

SWRCB: State Water Resources Control Board.

Total Dissolved Solids (TDS): A quantitative measure of the residual minerals dissolved in water that remains after evaporation of a solution. Usually expressed in milligrams per liter.

Treated water: Raw water which has been treated for human consumption through secondary or tertiary processes at a water treatment plan (WTP).

Watershed: An area of land that drains water, sediment and dissolved materials to a common receiving body or outlet. The term is not restricted to surface water runoff and includes interactions with subsurface water. Watersheds vary from the largest river basins to just acres or less in size. In urban watershed management, a watershed is seen as all the land which contributes runoff to a particular water body.

Zoning: The primary instrument for implementing the general plan. Zoning divides a community into districts or "zones" that specify the permitted/prohibited land uses.

Chapter 13
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Appendices

AP.1 SUSTAINABLE PRACTICES FOR WASTEWATER TREATMENT FACILITIES

Overview

This appendix provides general background information on potential ways to increase the sustainability of sewer treatment plants and to achieve associated benefits, including reduced operating costs, increased environmental sensitivity and a favorable public image. Sustainability can be achieved in several areas including the daily operation of the plant, inputs to the system, treatment methods and output products.

Facility Operations

The operation of a wastewater treatment facility can have a major impact on energy consumption. However, simple changes can be implemented to lower the energy use of the building. These include upgrading the plumbing fixtures, lighting fixtures, and office equipment. The plumbing fixtures in the buildings of the plant can be upgraded to the meet or exceed the current building code requirements. Lighting fixtures can be replaced to use the most energy efficient bulbs, such as LED. Lights can also be fitted with auto-shutoff switches that will ensure lights are not accidentally left on when no one is using the room. Exterior fixtures can be evaluated to ensure they are not wasting light by lighting areas that don't require lighting and polluting nighttime skies. These lights can also be retrofitted with solar panels and motion sensors to allow them to shut off when not needed. Office machines can be upgraded or replaced as needed with energy star rated machines. There are now smart power strips that do not

constantly pull energy from the electrical grid. Buildings can be checked for insulation efficiency and, if needed, additional insulation can be added to reduce the amount of energy required to maintain interior temperatures. Energy-efficient windows are readily available and can be phased in as old windows are replaced. Several local wastewater treatment plants already have implemented many of these strategies.

Decreasing the amount of energy needed from outside sources is a way to reduce power bills and thereby operate in a more cost-efficient manner. Installing solar panels or wind turbines are the most common ways to achieve independent energy production. Combined Heat and Power (CHP) is described on the EPA website water.epa.gov/infrastructure/sustain/upload. Nevada City's wastewater treatment plant has installed a micro turbine (hydroelectric) from treated water outfall to Deer Creek to create energy for the operations of the plant.[1] With any technology, the installation costs plus the ongoing operating costs of the system will reveal the true life cycle cost and help highlight the benefits of one system over the other.

The type of vehicles purchased by the wastewater provider for operational needs can be screened for long-term sustainability. Prior to purchase of a standard vehicle, staff should consider sustainability and how the vehicle will be used, including whether electric or hybrid vehicles would work just as well as a traditional gas/diesel vehicle.

Under ideal circumstances, a district or agency would discuss proposed use of green technologies before replacements are required. The decisions should be documented to help with future decision making regarding energy-efficient practices and product choices.

Inputs to the Treatment Process

Another area in which sustainability can be increased is in the amount of inputs into the system. Inputs can be reduced by educating the users to reduce their creation of wastewater. California building codes require the use of low-flow fixtures in new and remodeled buildings. Encouraging residents to replace their older fixtures with low-flow fixtures even if they aren't remodeling can reduce the inputs to the system. In addition, with the 2009 California graywater code or "laundry to landscape law," users may install a graywater system that will reduce the wastewater input, subject to local ordinances. [2]

Another reduction possibility is to encourage larger facilities to install a pretreatment/prescreening system that will help reduce foreign items found in the system. For example, Nevada City worked with the County jail to install a prescreening system that catches blankets and other items that may come through the plumbing.

In addition to installing a pretreatment/prescreening system, there are new technologies for large-scale composting toilets. The Queens Botanical Garden in New York has installed a new bathroom that contains composting toilets. Several years ago, Butte County held a seminar that included discussion

[1] http://www.wbdg.org/resources/microturbines.php
[2] http://www.hcd.ca.gov/codes/shl/preface_et_emergency_graywater.pdf

about these systems. The Clivusmultrum is a multi-use system that has been in the United States since 1973.[3]

Treatment Methods

A large array of treatment methods are used in Nevada County. Each plant uses a method that best fits their size and budget. Systems range from traditional chlorine treatment to UV treatment with biological nitrogen removal, from package plants to septic tanks that discharge into a community leach field. The County Sanitation District No. 1 recently decided not to upgrade their existing Cascade Shores treatment plant that was discharging effluent into Gas Canyon Creek. Instead, they have decided to rebuild the system using a conventional land-based community leach field system to avoid discharge to surface waters.

Another method that may be of interest is a bio-wastewater treatment plant or constructed wetland or wastewater gardens. The Island School on Cape Eleuthera used a rock bed of coarse sand and seashells to filter their wastewater.[4] They also installed plants in the rock bed that utilize the nutrients and created a park. Their system, with its tall tropical plants, does not resemble a typical wetland. Projects in Indiana have used a constructed wetlands system including the Municipal Waste Treatment Wetland in Fulda, Indiana, and the Bradford Woods Wastewater Treatment Systems Replacement in Martinsville, Indiana.[5] Another method, called the Living Machine©, is showcased by the El Monte Sagrado Resort in Taos, New Mexico. The resort utilizes treated wastewater as water features, hydroponic plants, and engineered wetlands.

The above case studies may provide ideas to create greater sustainability to the systems in Western Nevada County.

Studying and comparing the different systems currently in use with the new technology and approaches to wastewater treatment can determine the best systems for this area. Some systems may be beneficial due to their ease of adapting to changing regulations, by providing a positive impact, and by reducing negative impacts on the environment.

Outputs

The final area for sustainability consideration is system output. Outputs utilized as resources create a sustainable system. Several local treatment plants recycle treated effluent. Lake of the Pines and Lake Wildwood use the water created from the process to fill their lake as an amenity in their community. Penn Valley uses its effluent for irrigation.

Some systems truck off their solid wastes for daily fill cover at local landfills. Solid wastes might also be able to be used on non-food gardens or landscapes based on the level of minerals left in the solids. Local districts can track new research being developed to determine if waste solids can be used as fertilizer in the planting areas along highways or other areas in the communities where the plants would benefit from this product.

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[3] http://www.clivusmultrum.com/

[4] http://www.islandschool.org/welcome/our-campus/

[5] http://lochgroup.com/project/bradford-woods-eco-treatment-system/

Conclusion

Wastewater treatment plants have several different ways of implementing green technology and sustainable practices, though putting sustainability on the top of the list can be a challenge. When planning for the future, considering the full-life cycle costs of infrastructure (including energy and sustainability) is a solid practice. Appendix 5 describes a potential tool to finance green technology improvements.

An active discussion of sustainable practices and technological issues could be facilitated through annual joint meetings of representatives from the different wastewater plants to review how the areas various treatment processes are working. The County Environmental Health Department should also be invited to these discussions. The gathering could include topics of new laws, regulations, and innovations that are available for wastewater treatment. This gathering might also be utilized to apply for grants to try innovated technologies or building upgrades that promise to stretch sustainability to new levels.

AP.2 SPHERE OF INFLUENCE UPDATE OPTIONS

Sphere of Influence Considerations

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 requires that LAFCo review and update the Sphere of Influence (SOI or Sphere) for each of the special districts and cities within the county. In determining the Sphere of Influence for an agency, LAFCo must consider and prepare written determinations with respect to four factors [Government Code §56425(e)]. These factors relate to the present and planned land uses including agricultural and open-space lands, the present and probable need for public facilities and services, the present capacity of public facilities and adequacy of public services, and the existence of any social or economic communities of interest in the area.

Further, Nevada LAFCo policies relating to Spheres specify that two planning horizons (five-year and later) be considered. These policies also require the relevant MSR data be utilized to document service and facility capacity.

Sphere of Influence Options

The intent of an SOI is to identify the most appropriate areas for an agency's service area in the *probable future.* Pursuant to Nevada LAFCo policies relating to SOIs, LAFCo discourages inclusion of land in an agency's Sphere if a need for services provided by that agency cannot be demonstrated. Accordingly, territory included in an agency's Sphere is an indication that the probable need for service has been established, and that the subject agency has been determined by LAFCo to be the most logical service provider for the area.

There are a number of ways to look at Spheres of Influence. One option is to consider growth and development and the need for municipal services over time. Under Nevada LAFCo policies, a *Near Term Sphere Horizon* considers a five-year window (i.e., from the present to five years from now). A *Long Term Sphere Horizon* considers growth and development and the need for municipal services beyond the five-year window.

A second option is to determine an agency's ability to provide municipal services beyond its current boundary. For a City or District that does not plan to provide municipal services beyond its present boundary, a Sphere boundary that is the same as the agency boundary is called a *Coterminous Sphere of Influence*.

A third option is related to reducing the current Sphere of Influence of an agency by adopting a *Minus Sphere of Influence* (or Reduced Sphere of Influence) by excluding territory currently within an agency's Sphere.

A fourth option relates to Sphere areas for which municipal services are not intended to be provided; that is, areas within a Sphere which will remain undeveloped (such as open space or 'protected lands'). Such an area is a special case, and requires the agency to demonstrate why an area should be included within a Sphere for which no municipal services will be provided.

LAFCo also has the ability to determine a *Zero Sphere of Influence* for a City or District, signaling that the City or District does not have the wherewithal, governance capability, financial means, and/or operational capability to provide the municipal services for which it was formed, and should be dissolved or its function(s) reallocated to another agency.

Nevada LAFCo has an additional category related to Spheres called *Areas of Concern.* Areas of Concern are defined as "a geographic area beyond the Sphere of Influence in which land use decisions or other government actions of one local agency impact directly or indirectly upon another local agency."

Presented within this Appendix are Sphere of Influence Options for each City and Special District included in the Western Nevada County Wastewater Services MSR. The options presented are not mutually exclusive, but can be utilized in combination to allow the Commission to adopt the most appropriate Sphere Update for each agency.

For each City or Special District, Sphere Options are presented, followed by a discussion of the options, along with a Sphere matrix of factors LAFCo considers in updating a Sphere of Influence.

Summary of Sphere Update Process

This Appendix presents options for updating the SOI for the four cities/districts considered in this MSR only as it relates to the provision of wastewater services. The presented options are informational and may assist the Commission in considering next steps. When LAFCo moves to the update the SOI, the Commission will also consider additional information including the provision of water service, fire safety services, and other pertinent public services. The current status of any nearby Disadvantaged Unincorporated Communities (DUCs) will be recognized. LAFCo's process provides for a meeting/conference between cities and the County prior to updating a city's SOI. Additionally, the Commission will hold a public hearing and adopt written statements of fact regarding the SOI prior to adopting any updates.

CITY OF GRASS VALLEY

Sphere of Influence Options

Given the considerations addressed in the City of Grass Valley 2015 Wastewater MSR, four options have been identified for the City of Grass Valley Sphere:

1. Retain the Existing Time Horizons for the Near-term Sphere and the Long-term Sphere

2. Re-designate the Time Horizons for the Near-term Sphere and the Long-term Sphere

   Designate the Near-term Sphere time period to extend from 2015 to 2020; and designate the Long-term Sphere time period from 2020 to 2040.

3. Transfer the Alta Hill Fringe Community into the Near-term Sphere

   Transfer the Alta Hill Fringe Community (shown in Figure AP2-1, below) from the Long-term Sphere to the Near-term Sphere.

4. Re-designate Time Horizons for Specific Areas

   a. Remove the Kenny Ranch Special Development Area (SDA) from the Long-term Sphere and designate the Kenny Ranch as an Area of Concern;

   b. Shift the northern portion of the North Star SDA from the Near-term Sphere to the Long-term Sphere so that all of the North Star SDA is within the Long-term Sphere.

Discussion of Options

1. Retain the Existing Time Horizons for the Near-term Sphere and the Long-term Sphere

   If Nevada LAFCo determines that the existing government structure is appropriate to provide wastewater services, then the existing Sphere should be retained. This option would enable the City to continue to include the Near-term and Long-term areas within its Sphere, and the Areas of Concern in its Long-term planning area. However, the current Near-term Sphere was adopted in 2011 and would reach the 5-year threshold in 2016.

2. Re-Designate the Time Horizons for the Near-term Sphere and the Long-term Sphere

   The 2011 City of Grass Valley Sphere of Influence Plan identified a Near-term Sphere and a Long-term Sphere. The Near-term Sphere identified nine areas for annexation during the 5-year Near-term Sphere time frame. However, the economic downturn has resulted in a much slower rate of development for the City. Although the City's optimistic annexation program called for annexation of 2,708 acres by 2015, only about 500 acres (primarily Loma Rica) have been annexed since 2011. Re-designating the Near-term Sphere for the period 2015-2020 will coincide with the City's current General Plan. Designating the Long-term Sphere (currently 'undesignated') to the time period 2020-2040 would coincide with a 20-year planning horizon. It appears that there is sufficient land currently available within the Near-term Sphere (1,323 acres) to accommodate appropriate growth. For LAFCo purposes, this can still be considered to be a 'generous' Sphere. By tying the Long-term Sphere to the City's planning horizon, the City will be able to document long-term service and facility capacity.

3. Transfer the Alta Hill Fringe Community into the Near-term Sphere

   The Alta Hill Fringe Community has been identified as a DUC. Placing the Alta Hill DUC in the Near-term Sphere will signal the first step toward annexation.

4. Re-Designate Time Horizons for Specific Areas

   There is currently no viable development proposal regarding the Kenny Ranch, which makes it appropriate to be included in the City's Area of Concern similar to the Osborne Hill Area. Given the slow economy, the North Star SDA is speculative at this time and is appropriate to be placed in the Long-term Sphere.

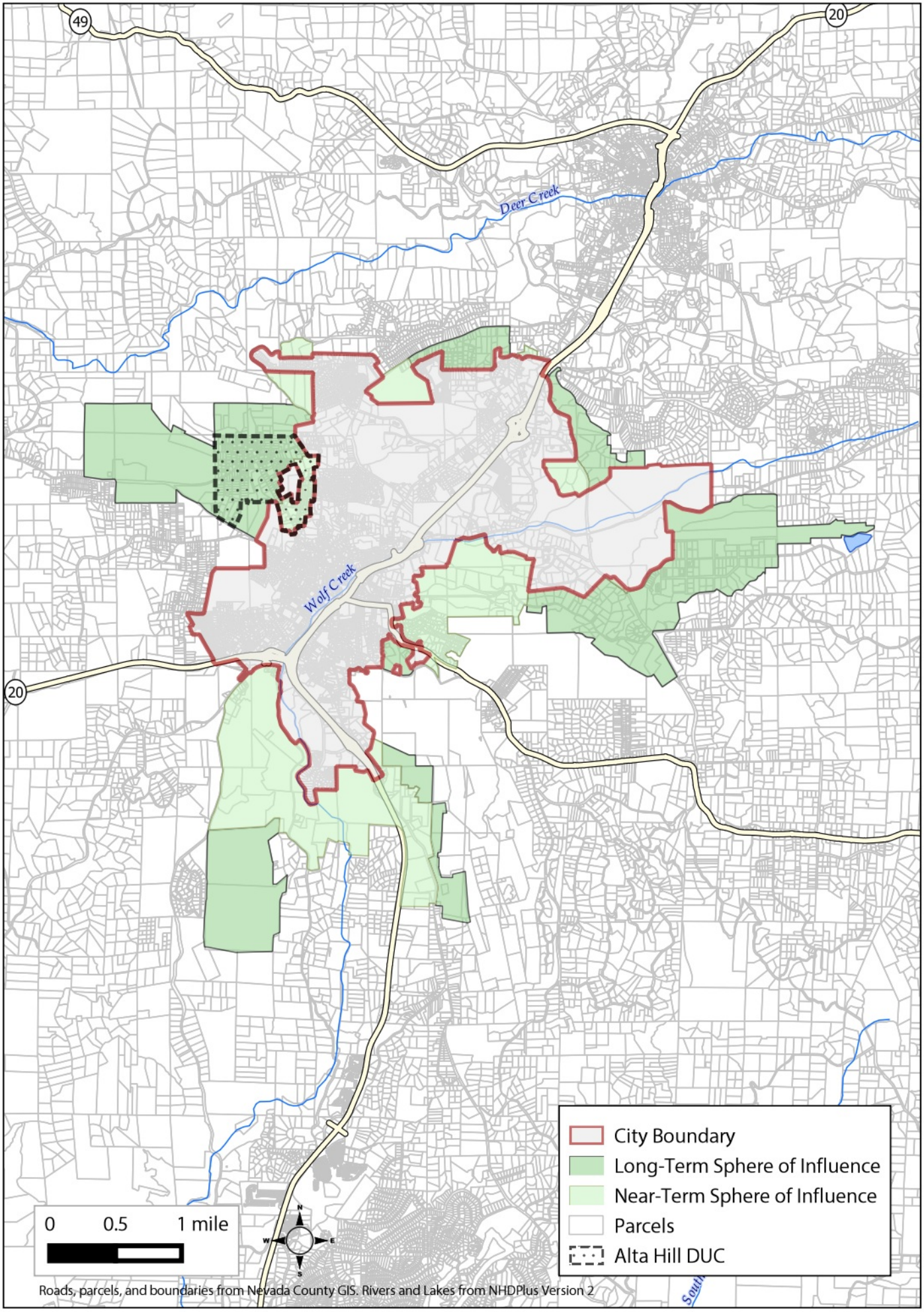

Figure AP2-1 **ALTA HILL DUC & CITY OF GRASS VALLEY**

Table AP2-1: City of Grass Valley Sphere Issues	
Issue	Comments
Services Provided	The City provides wastewater collection, treatment and disposal to residents and customers within its boundaries.
Present and planned land uses in the area	The City comprises substantial community development, including residential, commercial and industrial and some open space lands. The City anticipates the annexation and development of a number of new projects in the future consistent with land use designations contained within the City's General Plan. The current General Plan designates the following land uses by area: *Near Term SOI* Residential 627 acres Commercial 191 acres Industrial 1 acre Public/Institutional 89 acres Special Development Area 414 acre Open Space 0 acres Total 1,323 acres *Long Term SOI* Residential 808 acres Commercial 2 acres Industrial 428 acre Public/Institutional 147 acres Special Development Area 672 acre Open Space 0 acres Total 2,149 acres
Potential effects on agricultural and open-space lands	Within the current SOI there are no lands designated or zoned for agriculture. Within the current SOI, approximately 206 acres are designated as Open Space or Parks and Recreation as reflected in the City General Plan.
Present and probable need for public facilities and services in the area related to wastewater services	There will be a need for extension of wastewater services to new development areas. The City has developed a Collection System Master Plan to insure the proper size, location, and timing of wastewater collection improvements. Likewise, areas within the City already receiving wastewater services are monitored for proper operation, replacement and rehabilitation, or reconstruction. The City maintains a 5-year Capital Improvement Program (CIP) for sewer line replacement and rehabilitation. Thirty percent of the collection system is cleaned each year.
Opportunity for infill development rather than SOI expansion	The City Housing Element identified a total of 346 acres of developable land within the existing City limits, with a probable buildout of 1,307 dwelling units. Within the Near-term SOI area, the City estimates that there is development potential for an additional 1,200 units. These combined 2,507 dwelling units represent a 37.5 percent increase in the existing housing stock of 6,684 dwelling

Table AP2-1: City of Grass Valley Sphere Issues	
Issue	Comments
	units.
Present capacity of public facilities and adequacy of public services related to wastewater services	The permitted capacity of the Wastewater Treatment Plant (WWTP) is 7.78 million gallons per day (mgd). The average flow volume is 1.2 mgd. The City has indicated that the WWTP can be expanded to meet future projected increases in demand.
The existence of any social or economic communities of interest in the area	The City incorporated in 1853 and has a long history as an established community. The City of Nevada City is immediately adjacent to and northeast of the City of Grass Valley. However, there is a narrow peninsula of unincorporated territory between the two cities on each side of Highway 49. The westerly side is within the Grass Valley Area of Interest. The east side is not specified for either an SOI or Area of Interest.
The present and probable need for water, sewer and structural fire protection of any DUC within the existing SOI	One 'Fringe Community' which qualifies as a DUC has been identified. The Alta Hill Area is located between the City Limits on the east, and the proposed Kenny Ranch SDA. Any consideration by the City and LAFCo to annex the Kenny Ranch property will also require consideration for annexing the Alta Hill DUC.
Effects on other agencies	The established SOI does not have an effect on other agencies.
Potential for consolidations or other reorganizations when boundaries divide communities	The City's boundaries do not divide communities. Consolidating wastewater treatment and disposal facilities with the City of Nevada City was considered in the 2004 MSR, but is not considered feasible due to topography.
Location of facilities, infrastructure and natural features	The location of the WWTP is dictated by topography and the ability to discharge treated effluent to Wolf Creek, a tributary to Bear River.
Willingness to serve	The City wishes to continue to provide wastewater services within its corporate boundary and to determine the most efficient way to provide services within its SOI.
Potential environmental impacts	The City has been operating since December 2007 under a Cease and Desist Order from the Central Valley Water Board for effluent limitation violations due to mining contaminants. That issue has been resolved with the completion of a separate WWTF owned and operated by Newmont Mining and is now operational

CITY OF NEVADA CITY

Sphere of Influence Options

Given the considerations addressed in the City of Nevada City 2015 Wastewater MSR, four options are identified for the City of Nevada City Sphere:

1. Retain the Existing Four Horizon Sphere of Influence

   The Sphere adopted in 2008 is comprised of four 'horizons' – 2008 (Current), 2013 (5-Year), 2018 (10-Year), and 2023 (15-Year).

2. Simplify the Sphere by Designating a Near-term Sphere and a Long-term Sphere

   a. Combine the 2008 Sphere Horizon (77 acres) and the 2013 Sphere Horizon (395 acres) into one Near-term Sphere (total of 472 acres) with a time period of 2015 to 2020;

   b. Combine the 2018 Sphere Horizon (600 acres) and the 2023 Sphere Horizon (1,653 acres) into one Long-term Sphere with a time period from 2020 to 2040.

3. Remove Most Developed Properties from the 2023 Sphere Horizon and Include Them in the Area of Concern

   a. The majority of properties included in the 2023 Sphere Horizon are already developed and currently dispose of wastewater via privately-owned individual septic systems.

   b. The 2023 Sphere Horizon (1,653 acres) is not supported by WWTP capacity, which is estimated to be sufficient until the year 2025. By re-designating the 2023 Sphere Horizon as an Area of Concern, the City of Nevada City Sphere would then be comprised of a Short-term Sphere (472 acres) and a Long-term Sphere (600 acres).

Discussion of Options

1. Retain the Existing Four Horizon Sphere of Influence

   If Nevada LAFCo determines that the existing government structure is appropriate to provide wastewater services, then the existing Sphere should be retained. However, the Current and 5-Year Sphere horizons are now out-of-date.

2. Simplify the Sphere by Designating a Near-term Sphere and a Long-term Sphere

   This approach would be consistent with Nevada LAFCo Sphere of Influence polices, which were revised since the Nevada City Sphere was updated in 2008.

3. Remove Most Developed Properties from the 2023 Sphere Horizon and Include Them in the Area of Concern

   Of the approximately 630 parcels within the 2023 Sphere, 16 percent appear to have actual development potential which would require City wastewater services. Because the developed parcels currently utilize individual septic systems, City wastewater services will not be needed in this area for the foreseeable future (unless septic systems fail). In addition, the 2023 Sphere Horizon is not supported by WWTP capacity, which is estimated to have sufficient capacity only

until the year 2025. Given the current growth rate in the City (0.0089 percent per year), those properties within the 2023 Sphere Horizon are not expected to need city sewer services in the probable future.

Table AP2-2: City of Nevada City Sphere Issues

Issue	Comments
Services Provided	The City provides wastewater collection, treatment and disposal to residents and customers within its boundaries.
Present and planned land uses in the area	The City comprises substantial community development, including residential, commercial and industrial and some open space lands. The City anticipates very limited growth over the next 15-years. The current General Plan designates the following land uses by area: *2008 Sphere* Planned Development 77 acres Total 77 acres *2013 Sphere* Residential 117 acres Commercial 0 acres Industrial 0 acres Public/Institutional 0 acres Planned Development 180 acres Open Space/Ag/Forest 98 acres Total 395 acres *2018 Sphere* Residential 246 acres Commercial 0 acres Industrial 0 acres Public/Institutional 18 acres Planned Development 224 acres Open Space/Ag/Forest 112 acres Total 600 acres *2023 Sphere* Residential 1,245 acres Commercial 0 acres Industrial 0 acres Public/Institutional 38 acres Planned Development 132 acres Open Space/Ag/Forest 238 acres Total 1,653 acres
Potential effects on agricultural and open-space lands	Within the current SOI there are 23-acres designated or zoned for agriculture. Within the current SOI, approximately 398 acres are designated as Open Space Preserve as reflected in the City General Plan.
Projected growth in the City	The City's growth rate between 2000 and 2010 was 0.26% per year. Since 2010, the

Table AP2-2: City of Nevada City Sphere Issues	
Issue	Comments
	City has lost population (52 persons). The current assumed growth rate for the City is 0.0089 percent per year.
Present and probable need for public facilities and services in the area related to wastewater services	There will be a need to replace aging sewer lines and to install backflow prevention devices in all buildings. No upgrade to the wastewater treatment plant is anticipated.
Opportunity for infill development rather than SOI expansion	The City Housing Element identified a limited number of sites for in-fill development, including a 78-unit hotel as well as a few scattered single family dwellings.
Present capacity of public facilities and adequacy of public services related to wastewater services	The permitted capacity of the WWTP is 0.69 mgd, dry weather flow, with an actual average dry weather flow of 0.38 to 0.47 mgd. The maximum wet weather flow is 1.60 mgd. The City has indicated that the WWTP has sufficient capacity for the next 10-years, to the year 2025.
The existence of any social or economic communities of interest in the area	The City incorporated in 1856 and has a long history as an established community. The City of Grass Valley is immediately adjacent to and southwest of the City of Nevada City. However, there is a narrow peninsula of unincorporated territory between the two cities on each side of Highway 49. The westerly side is within the Grass Valley Area of Concern. The east side is not specified for either an SOI or Area of Concern.
The present and probable need for water, sewer and structural fire protection of any DUC within the existing SOI	There are no DUCs within the Nevada City SOI.
Effects on other agencies	The established SOI does not have an effect on other agencies.
Potential for consolidations or other reorganizations when boundaries divide communities	The City's boundaries do not divide communities. Consolidating wastewater treatment and disposal facilities has been studied, but is not considered feasible due to topography.
Location of facilities, infrastructure and natural features	The location of the WWTP is dictated by topography and the ability to discharge treated effluent to Deer Creek, a tributary to Bear River.
Willingness to serve	The City wishes to continue to provide wastewater services within its corporate boundary and to determine the most efficient way to provide services within its SOI.
Potential environmental impacts	No potential environmental impacts from the City's wastewater services have been identified.

KINGSBURY GREENS COMMUNITY SERVICES DISTRICT

Sphere of Influence Options

Given the considerations addressed in the Kingsbury Greens Community Services District 2015 Wastewater MSR, two options are identified for the District Sphere:

1. Retain the Existing Coterminous Sphere of Influence

   The District Sphere was adopted in 1995 and updated in 2009, with the Sphere the same as the District boundary. There have been no changes to the District boundary since formation.

2. Adopt a Zero Sphere for the Kingsbury Greens Community Services District

   Given the governance and operational issues being experienced by the District, adoption of a Zero Sphere will signal probable future dissolution of the District and the assigning of the District's functions to another agency. One possibility is a new zone within Nevada County Sanitation District No. 1.

NEVADA COUNTY SANITATION DISTRICT NO. 1

LAKE OF THE PINES, ZONE 2: Sphere of Influence Options

Given the considerations addressed in the Lake of the Pines, Zone 2 2015 Wastewater MSR, three options are identified for the Zone 2 Sphere:

1. Retain the Existing Sphere of Influence

   The Sphere was updated in 2009 and extends north and west of the Zone boundary. The current Sphere will allow for a Zone reorganization, including the annexation of the Higgins Village Zone and the Darkhorse Zone.

2. Reduce the Sphere by Eliminating Developed Large Lot Properties North of the Zone Boundary

   Given the current use of individual septic systems for many of the large-lot residential properties north of the existing Zone boundary, it is unlikely any will require wastewater services.

NORTH SAN JUAN, ZONE 4: Sphere of Influence Options

Given the considerations addressed in the North San Juan, Zone 4 2015 Wastewater MSR, two options are identified for the Zone 4 Sphere:

1. Retain the Existing Sphere of Influence

   The Sphere was updated in 2009 and extends west of the Zone boundary. The Zone has sufficient wastewater capacity to serve the Sphere area.

2. Adopt a Coterminous Sphere by Eliminating Developed Large-lot Properties West of the Zone Boundary

   Unless there is a compelling reason to retain the large-lot parcels in the Sphere (future commercial uses or failing septic systems), the Sphere can be reduced to be the same as the Zone boundary.

PENN VALLEY, ZONE 6: Sphere of Influence Options

Given the considerations addressed in the Penn Valley, Zone 6 2015 Wastewater MSR, three options are identified for the Zone 6 Sphere:

1. Reduce the Sphere by Eliminating Large-lot Developed Properties West of the Zone Boundary

   It is unlikely that the currently developed large-lot parcels west of the existing Zone boundary will require wastewater services, given the current use of individual septic systems for these properties.

2. Adopt a Zero Sphere for Penn Valley, Zone 6

   Penn Valley, Zone 6 will be merged into Lake Wildwood, Zone 1, and will cease to operate as a separate Zone; thus, it might be logical to adopt a Zero Sphere of influence for the zone. One consequence of adopting a Zero Sphere for Zone 6 is the elimination of properties on the north (adjacent to Highway 20) and west from the current Sphere. In other words, there would be no expectation that sewer service would be extended from Zone 1 (Wildwood) to the areas formerly within the Zone 6 Sphere.

3. Retain the Existing Sphere of Influence for Penn Valley, Zone 6

   Upon the merger of Penn Valley, Zone 6 into Lake Wildwood, Zone 1, maintain the current coterminous Sphere for Lake Wildwood and the current extended Sphere for the Penn Valley area.

AP.3 WATER QUALITY DATABASE REPORTS

Overview

This appendix provides the results of database searches on water quality compliance in Western Nevada County. At the February 19, 2015 meeting, the Commission suggested that the MSR should include information about the compliance of wastewater agencies with water quality regulations promulgated by the State Water Resources Control Board (State Water Board) and the Central Valley Regional Water Quality Control Board (Regional Water Board). This type of information is especially important since during a drought, we can't rely upon "dilution" as a solution to pollution. When local water supplies are scarce, keeping that supply at a high level of water quality is desirable.

California Integrated Water Quality System Project

The California Integrated Water Quality System (CIWQS) is a relational database used by the State and Regional Water Boards to track information about permit violations and enforcement activities. Each of the four wastewater service providers studied in this MSR have permits from the Central Valley Regional Water Board and are therefore classified as "Permittees." Permittees are allowed to self-report their own permit violations to the CIWQS.

A four-year term from January 1, 2011 to January 1, 2015, was queried in the CIWQS database. The results of the database query are shown in Table AP3-1 below. Table AP3-1 below shows both formal enforcement actions and informal enforcement actions. Formal actions require compliance with requirements. An informal response may consist of a phone call or staff enforcement letter that are aimed at stopping the violation. The relation between violations to enforcement action is a many-to-one relationship such that several violations may be combined into one enforcement action. For example, Table AP3-1 shows that Cascade Shores WWTP had 64 formal violations that resulted in 2 formal enforcement actions during the past four years.

Table AP3-1: Violations and Enforcement Report, 2011-January 2015

Facility	Organization	Formal Enforcement Actions	Violations Linked to Formal Enforcement Actions	Informal Enforcement Actions	Violations Linked to Informal Enforcement Actions
Cascade Shores CS*	Nevada Co. Sanitation District No. 1	0	0	1	1
Cascade Shores WWTP	Nevada Co. Sanitation District No. 1	2	64	12	77
Grass Valley City CS	Grass Valley City	2	12	7	11

Table AP3-1: Violations and Enforcement Report, 2011-January 2015

Facility	Organization	Formal Enforcement Actions	Violations Linked to Formal Enforcement Actions	Informal Enforcement Actions	Violations Linked to Informal Enforcement Actions
Grass Valley WWTP	Grass Valley City**	1	5	8	11
Grass Valley MS4 Phase II	Grass Valley City	1	1	0	0
Lake of the Pines CS	Nevada Co. Sanitation District No. 1	0	0	2	2
Lake of the Pines WWTP	Nevada Co. Sanitation District No. 1	0	0	3	5
Lake Wildwood CS	Nevada Co. Sanitation District No. 1	0	0	3	3
Lake Wildwod WWTP	Placer Co. Dept. of Facility Services***	0	0	3	1
Lake Wildwood WWTP	Nevada Co. Sanitation District No. 1	2	33	15	53
Lake Wildwood WWTP	Nevada County Airport***	2	1	0	0
Nevada City WWTP	Nevada City	2	2	8	25
Penn Valley WWTP	Nevada Co. Sanitation District No. 1	0	0	1	1

State Water Resources Control Board. CIWQS. https://ciwqs.waterboards.ca.gov/ciwqs

* CS = Collection System, WWTP = wastewater treatment plant

*See also City of Grass Valley, Report to City Council by Timothy Kiser for Council Meeting on February 10, 2015. Administrative Civil Liability Complaint R5-2015-0505. 31 pages. Available on-line at: http://www.cityofgrassvalley.com/files/attachments/agendas-2014/item5.1.pdf.

***The database's references to Placer County and the Nevada County Airport appear to be an error. It is

Table AP3-1: Violations and Enforcement Report, 2011-January 2015					
Facility	Organization	Formal Enforcement Actions	Violations Linked to Formal Enforcement Actions	Informal Enforcement Actions	Violations Linked to Informal Enforcement Actions
recommended that Nevada County Sanitation District work with the Water Board to correct these errors in the state database.					

Sanitary Sewer Overflow Database

The State Water Board maintains a database of Sanitary Sewer Overflows from public/permitted systems and private lateral sewage discharges. This database is a specific module in the CIWQS.

The State Water Board formalized the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003 (SSS WDRs), on May 2, 2006. All public agencies that own or operate a sanitary sewer system that is comprised of more than one mile of sewer pipes which convey wastewater to a publicly owned treatment facility must be covered under the SSS Waste Discharge Requirements. The SSS Waste Discharge Requirements requires enrollees, among other things, to maintain compliance with the Monitoring and Reporting Program. The results of the database queries are shown as an overview below in Table AP3-2, and detailed results are shown in Table AP3-3.

Table AP3-2: Sewer System Spills Reported in Western Nevada County 2011 - 2014										
Region	Responsible Agency	Collection System	Total Number of SSO locations	Total Vol of SSOs(gal)	Total Vol Reach Surface Water	Percent Recover	Percent Reach Surface Water	Miles Pressure Sewer	Miles Gravity Sewer	Miles of Laterals
5S	Grass Valley City	Grass Valley City	47	106,829	99,172	5	92	2.7	61.5	0
5S	Nevada CSD No 1	Cascade Shores	1	60	60	0	100	0.9	2	0.5
5S	Nevada CSD No 1	Lake Wildwood	8	3,290	1,525	0	46	2	41	16
5S	Nevada CSD No 1	Lake of The Pines	4	630	320	7	50	2	26	11
5S	Nevada CSD No 1	Penn Valley	1	29,400	0	98	0	8	0	5
Search Criteria: SSO_Type = sso_cat1_2_3 counties = 'Nevada', start dt = 01/01/2011 end dt = 01/01/2015. Accessed database March 16, 2015: https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_main; http://www.waterboards.ca.gov/ciwqs/publicreports.shtml#sso										

Table AP3-2 above shows that the City of Grass Valley had 47 incidents of sewer system overflows between the years 2011 to 2015. The Lake Wildwood Zone of the County Sanitation District had the second highest number of sewer system overflow s with a total of 8 incidents affecting a total volume of 3,290 gallons. Although the Penn Valley Zone of the County Sanitation District had only one incident, this incident was fairly large with a total volume of 29,400 gallons. Details on each of these incidents are shown in Table AP3-3 below.

Table AP3-3: Details of Sewer System Spills in Western Nevada County				
Agency	Spill Location Name	Spill Location Description	Spill Volume	Start Date
Grass Valley City	Whiting St at Joyce Dr	Area of the Joyce Drive Lift Station	67,000	10/18/2011
Grass Valley City	Scotia Pines Cir	On Scotia Pines Circle between Townsend St and Carpenter St from a manhole located at Peabody Creek	104	11/9/2011
Grass Valley City	Richardson at School St	From a manhole in the intersection of Richardson at School St. (Due to the Reporting LRO no longer being with the City, reports were verified based upon Stand-By Reports/Logs	900	1/21/2012
Grass Valley City	Hennessy School	On school property in a grassy area. Due to the Reporting LRO no longer being with the City, reports were verified based upon Stand-By Reports/Logs	1,500	1/21/2012
Grass Valley City	Diego's	From manhole near Diego's Restaurant	20	12/29/2011
Grass Valley City	Le Duc	The spill location was In the middle of the street at 609 Le Duc and originated from a sanitary sewer cleanout at the end of the main line	5	2/28/2012
Grass Valley City	Columbia	Manhole I15-6 on Columbia Ave	20	2/28/2012
Grass Valley City	450 Mill St	Manhole I17-1 in Mill St. Overflow went into gutter, entered into storm drain connected to Rhode Island Ravine storm drain system which then empties into Wolf Creek	120	3/16/2012
Grass Valley City	450 Mill St	Manhole in the middle of south bound travel lane of Mill St	900	3/16/2012
Grass Valley City	535 East Main St	Private lateral cleanout between 535 and 589 East Main St. Spilled in landscape area and into storm drain inlet which connects to Matson Creek	3,600	3/16/2012

Table AP3-3: Details of Sewer System Spills in Western Nevada County				
Agency	Spill Location Name	Spill Location Description	Spill Volume	Start Date
Grass Valley City	441 Central Ave	Bathroom by north parking lot at Memorial Park	10	5/24/2012
Grass Valley City	303 Richardson St	Spill occurred at manhole at the intersection of Richardson St and North Church (Manhole K13-16). Spill contained to street pavement, gutter pan, and storm drain system	390	5/27/2012
Grass Valley City	441 Central Ave	Bathroom by north parking lot at Memorial Park	10	6/18/2012
Grass Valley City	499 Doris Dr	499 Doris Drive (Manhole J12-1). Nearest cross street - Carol Drive	210	6/26/2012
Grass Valley City	501 Kate Hayes	Manhole L-17-1 at the intersection of Kate Hayes St and Miners Trail	112	7/27/2012
Grass Valley City	217 Colfax Ave	Elevated gravity sewer line over the South Fork of Wolf Creek (Sewer flows dripping out of joint in pipe at the manhole. Drips flowed down side of concrete lined channel into South Fork of Wolf Creek.)	159	6/1/2012
Grass Valley City	210 N. Auburn	210 N. Auburn St on the Courtyard Suites property	250	7/29/2012
Grass Valley City	109 Florence Ave	Spill emanated from the clean out L15-16 in Florence St	10	10/25/2012
Grass Valley City	11442 Slate Creek	Manhole 17-8 (Accessed from house at 11442 Slate Creek Rd)	13,440	11/4/20112
Grass Valley City	136 Mainhart Dr	Cleanout of private lateral for cottage at rear of property at 136 Mainhart Dr	3	11/13/2012
Grass Valley City	412 Brunswick Rd	Manhole in roadway westbound	8,250	12/9/2012
Grass Valley City	108 Scotia Pines Cir	Manhole adjacent to Peabody Creek /Rhode Island Ravine	50	12/12/2012

Table AP3-3: Details of Sewer System Spills in Western Nevada County				
Agency	Spill Location Name	Spill Location Description	Spill Volume	Start Date
Grass Valley City	450 Mill St	Manhole # I16-22 on Mill St in front of 450 Mill St	1,800	12/2/2012
Grass Valley City	534 Butler St	Cleanout in paved driveway. Sewage ran into street and down to storm drain crossing at Minnie St	1,200	12/16/2012
Grass Valley City	506 Minnie St	Small spill from Manhole 16-4 in the middle of Minnie St. Spill area was approximately 600sf of pavement area	50	12/19/2012
Grass Valley City	1784 East Main St	Spill occurred at toilet in back of structure. Structure was partially flooded and when crews arrived, small amount was beginning to run into paved driveway	25	12/26/2012
Grass Valley City	875 West Main St	Spill emanated from a clean out on 875 West Main St	550	1/7/2013
Grass Valley City	988 Plaza Dr (reported as 988 Sutton Way)	Cleanout S 8-8 in private parking lot in front of 988 Plaza Dr	5	5/10/2013
Grass Valley City	821 West Main St	Backup out of private cleanout due to blockage in mainline	30	7/20/2013
Grass Valley City	225 South Auburn St	Small amount of paper products coming out of the pick hole for manhole lid. Less than 5 square feet of area damp around manhole	4	9/12/2013
Grass Valley City	539 Scadden Dr	Manhole in street at 539 Scadden Dr	60	10/23/2013
Grass Valley City	Dorsey Dr / 1255 East Main St	Spill limited to pavement area at the corner of East Main and Dorsey Dr. Spill flows were limited to depressed paved area	15	11/10/2013
Grass Valley City	225 South Auburn St	Manhole K15-23 in front of 225 S. Auburn St	10	11/19/2013

Table AP3-3: Details of Sewer System Spills in Western Nevada County				
Agency	Spill Location Name	Spill Location Description	Spill Volume	Start Date
Grass Valley City	108 Ocean Ave	Cleanout in street north of manhole J17-8	279	11/27/2013
Grass Valley City	819 West Main	Manhole I13-9	2	12/3/2013
Grass Valley City	Hwy 49 Off Ramp to West Bound Hwy 20	Adjacent to Hwy 49 off ramp to Hwy 20 South. Manhole between the Off-Ramp and Wolf Creek	2,400	12/17/2013
Grass Valley City	Dorsey Dr (1255 East Main)	Manhole O9-3 at the intersection of Dorsey Dr and East Main St. Nearest address is 1255 East Main St	1,950	1/3/2014
Grass Valley City	812 and 606 Kechely Ct	Unpaved yards in front of 812 and 606 Kechely Ct	7	1/21/2014
Grass Valley City	211 B Catherine Ln	Manhole at 211B Catherine Ln	30	1/23/2014
Grass Valley City	595 East Main St	Bathroom at 595 East Main St. Also backed into 589 and 615 East Main St but did not leave those buildings	550	1/23/2014
Grass Valley City	449 Pine	Spill occurred at the sewer cleanout for 449 Pine St	6	4/15/2014
Grass Valley City	409 Pine Street	Null	450	4/18/2014
Grass Valley City	337 Bennett	Main line cleanout near 337 Bennett St in dirt parking area	50	5/5/2014
Grass Valley City	107 East Colfax Ave	Null	15	8/6/2014
Grass Valley City	438 Kate Hayes St	Seeped out of the street at the intersection of Kate Hayes St and Berryman St	100	9/7/2014

Table AP3-3: Details of Sewer System Spills in Western Nevada County				
Agency	Spill Location Name	Spill Location Description	Spill Volume	Start Date
Grass Valley City	604 Le Duc St	Wet spot appeared on West Empire St eastbound	10	9/8/2014
Grass Valley City	100 Ocean Ave	Sewer spilled from Manhole J17-8 onto pavement and ground. Flows could have eventually made it to a concrete lined drainage ditch, which flows to Wolf Creek	168	11/22/2014
Nevada Co. San District - Cascade Shores	Cascade Shores Lift Sta-61	End of street cul-d-sac	60	5/12/2012
Nevada Co. San District - Lake Wildwood	11808 Swallow Ct, Penn Valley	Grassy Area, Manhole 24	240	1/13/2011
Nevada Co. San District - Lake Wildwood	19636 Chaparral Cir., Penn Valley	On roadway, alongside of home and into drainage channel in backyard	200	5/18/2011
Nevada Co. San District - Lake Wildwood	Lift station 33 force main pipe leak, LWW Penn Valley	V-ditch/shrubbery ground cover/moist sand bed area	600	12/24/2011
Nevada Co. San District - Lake Wildwood	LWWTP M/H J 6-1	Curved entrance asphalt/dirt/gravel	900	11/30/2012
Nevada Co. San District - Lake Wildwood	Lake Wildwood Private Community	Greenbelt area Edwina Creek	800	3/11/2013
Nevada Co. San District - Lake Wildwood	17548 Foxtail Dr, Penn Valley	Dirt area adjacent to manhole	50	10/26/2014
Nevada Co. San District - Lake Wildwood	17862 Foxtail Rd	Sewer line in easement behind housing tract	100	11/6/2014

Table AP3-3: Details of Sewer System Spills in Western Nevada County				
Agency	Spill Location Name	Spill Location Description	Spill Volume	Start Date
Nevada Co. San District - Lake Wildwood	11228 Marten Ct, Penn Valley	Manhole behind 11228 Marten Ct, Penn Valley	400	12/24/2014
Nevada Co. San District - Lake of The Pines	11940 Lakeshore North, Auburn L/S-4 LOP	Valve vault L/S-4	120	3/22/2012
Nevada Co. San District - Lake of The Pines	Lake Shore South and Torrey Pines, Auburn	Lake of the Pines boat launch Park	200	12/2/2012
Nevada Co. San District - Lake of The Pines	Lake of the Pines Golf Course	Null	160	7/8/2013
Nevada Co. San District - Lake of The Pines	10831 Combie Rd, Auburn	Road intersection/v-ditch	150	7/12/2014
Nevada Co. San District - Penn Valley	10699 Spenceville Rd, Penn Valley	Roadside v-ditch	29,400	10/28/2014
Search Criteria: STATUS = certified, SSO_Type = sso_cat1_2_3 counties = 'Nevada'. sart dt = 01/01/2011 end dt = 01/01/2015. Accessed database on March 16, 2015. www.waterboards.ca.gov/ciwqs/publicreports.shtml#sso. ciwqs.waterboards.ca.gov/ciwqs/				

AP.4 CAPACITY - WASTEWATER SYSTEMS

Overview

This appendix provides information on the capacity of the wastewater system for each of the four wastewater service providers discussed in this MSR. During a public meeting on February 19, 2015 the Commission considered a Preliminary Draft version of this MSR and suggested the MSR be refined to include more detailed information on the capacity of the physical infrastructure and permitted capacity for each service provider and this appendix provides this analysis as requested. In general, a municipal wastewater system has three fundamental components including 1) collection system, 2) treatment system, and 3) disposal system. More detailed information about the capacity associated with each of these three components is described below. "Capacity" represents the ability of facilities to move or process wastewater. The analysis contained in this appendix uses a low resolution, basic qualitative method, yielding quick results which can be used as a preliminary indicator of capacity. As a general disclaimer it should be noted that this analysis is not a detailed engineering study and has not been formally reviewed by an engineer.

Capacity of Collection Systems

A standard municipal collection system may consist of miles of sewer pipes located in the roadway or in other easements. The collection system typically collects sewage from customers and transmits it to the wastewater treatment plant. Often, the sewer collection lines were constructed many years ago. Sometimes parts of the original collection system may not have been designed to accommodate the higher density infill projects that have become more popular in recent years. When collection infrastructure is aged or when the collection system is otherwise overtaxed, there is the potential for sewage spills onto public streets or elsewhere. This is exemplified by the 47 sewer system overflows by the City of Grass Valley shown in Table AP3-2. Indicators of potential deficiency in a wastewater collection system could include 1) water surface elevation at a manhole within 3 feet or less from rim elevation, 2) a manhole that is surcharging (water level at or above the top of pipe), and 3) flow moving into a pump stations that exceeds the station's design capacity. A detailed engineering study could consider whether any of these indicators exist for a particular wastewater collection system.

Since population growth in California has generally been on an upward trend historically, it is common practice for a collection system to be studied or reviewed when new development is proposed and to charge said new development for the cost of these studies and for the cost of improving the collection system to serve the development directly. These detailed studies often help identify needed improvements that would allow a development project to move forward. These studies typically trace the path from the proposed development site back to the wastewater treatment plant, noting the size and location of all the sewage collection lines along the path. An engineer then assesses whether the size of the pipes is sufficient to handle the increased demand contributed by the new development. The engineering study may also consider site-specific data such as the elevation, the type and density of the proposed land use, irrigation requirements, fire-flow requirements, flow demands across the entire distribution system (including maximum day demand and peak hour demand), friction in pipes, and gravity/slope studies. Sources of data for this type of engineering study may include GIS mapping of sewer pipes and utilities, modeling, and water usage data from the individual water meters (based on the premise that freshwater delivered into a residence or business is correlated to the wastewater flow generated). This is usually assessed on a case-by-case basis. This approach is usually sufficient as long as

there are new developments that can pay for the studies and infrastructure. However, this approach may be a less reliable method to secure the needed improvements in situations where growth slows and new development becomes rare (i.e. during economic downturns) and in older built-out neighborhoods with no new development potential.

In these types of situations, other methods to pay for the studies and/or infrastructure improvements may become necessary. Other funding methods may include use of the municipality's general fund or use of enterprise funds derived from customer fees. In the past, local cities and counties sometimes relied upon "redevelopment" funding to pay for these types of infrastructure improvements. However, as part of the 2011 Budget Act (see also AB 26) redevelopment agencies in California were dissolved; effectively eliminating this source of infrastructure funding.

When assessing the capacity of a wastewater collection system, both physical and economic constraints should be considered. Oftentimes the physical infrastructure can be expanded and/or improved from a technical or engineering perspective. For example, pump stations can be reconstructed, sewer pipes can be replaced, and debris can be cleared from manholes. The cost of extending, improving, or replacing infrastructure is often the deciding factor. Chapters 5, 6, 7, and 8 in this MSR provide detailed descriptions of the type and age of collection infrastructure and the ability of each agency to pay for any needed improvements, and this information is summarized in Table AP4-1 below. No additional detail about the capacity of the collection infrastructure is readily available.

Table AP4-1: Summary of Collection System Capacities

Service Provider	Age of Collection Infrastructure	Ability to Pay for Improvements to Existing Collection Infrastructure
City of Grass Valley	Parts were installed in the 1950s. Age is estimated at 65 years or less.	Yes. City has the ability to utilize existing funds or to raise service rates as needed.
City of Nevada City	Parts were installed in the early 1900's; other parts installed 1940-50's. Other parts installed more recently. Age is estimated at 115 years or less.	Yes. City has the ability to utilize existing funds or to raise service rates as needed.
Kingsbury Greens Community Services District	Constructed in 1978	Yes. District has the ability to utilize existing funds or to raise service rates as needed. However, it is not likely that expansion of the collection system will ever be necessary.
Nevada County Sanitation District	Varies by zone and generally ranges from 1970 to 2014. See MSR Chapter 8 for details.	Yes. District has the ability to utilize existing funds or to raise service rates as needed.

Capacity of Treatment Systems

Sanitary sewer flows into the WWTP are dependent upon user discharge. User discharges are variable and may be correlated with a range of factors including lot size, population density, water conservation

measures, and climate. Additionally, wastewater flow through the system varies hour by hour as sewer usage patterns change from morning to evening. Engineering studies can input estimates of these factors into models of user discharges and flow. Most operators of a wastewater treatment plant use their experience with the system to calibrate their operations. This type of operational calibration helps to increase the efficient use of the infrastructure.

The capacity of a WWTP is often described by engineers as the number of gallons per day (gpd) of flow. The metric million gallons per day (mgd) is commonly used. The mgd metric is the best measurement to use because flow into the WWTP can vary depending on a number of factors described in the paragraph above. Additionally, detailed data about the flow using the mgd can be collected via a monitoring plan. Planners sometimes use a different metric to understand capacity of the WWTP called a "One Equivalent Dwelling Unit," (EDU) which is defined as the average wastewater discharge from a single-family dwelling. For purposes of this MSR analysis, we assume that one EDU is equal to a volume of two hundred (200) gallons per day. For example, a commercial business with an EDU of 7 would have an average dry weather flow (ADWF) of 1,400 gallons per day (7 x 200 gpd).

Table AP4-2 is a summary of WWTP capacity for the four service providers and this table present information using the EDU metric.

Table AP4-2: Comparison of Sewer Equivalent Dwelling Units (EDUs) by Agency/Zone						
	Agency Name	Permitted Capacity	Design Capacity in EDUs	Connected EDUs (Non-residential in parentheses)	Reserved EDUs[1]	Remaining EDUs
	Grass Valley	2.78 mgd calculated to 14,555 EDUs	Same as permitted capacity	approx. 9,500	Not available	5055
	Nevada City	0.69 mgd AADWF[2] calculates to 3450 EDUs[3]	Same as permitted capacity	1,380 connections calculates to 2346 EDUs[4]	Not applicable	1104[5]
	Kingsbury Greens Community Services District	0.0115 mgd calculated to range from 166 EDUs down to 57 EDUs depending on usage [6]	Same as permitted capacity	45	None. Site is built out	Ranges from 12 to 121[7]
Zone No.	County Sanitation District Zone Name	Permitted Capacity	Design Capacity in EDUs	Connected EDUs (Non-residential in parentheses)	Reserved EDUs[1]	Remaining EDUs
1	Lake Wildwood	0.69 mgd calculated to 4300 EDUs[8]	Same as permitted capacity	2,916 (62)	652	732
2	Lake of the Pines	0.55 mgd calculated to 2687 EDUs	Same as permitted capacity	2,090 (80)	97	500
4	North San Juan	0.024 mgd calculated to 114 EDUs	Same as permitted capacity	85 (9)	29	0
5	Gold Creek	0.0145 mgd calculated to 44 EDUs	Same as permitted capacity	44	0	0
6	Penn Valley	0.1256 mgd calculated to 458 EDUs	Same as permitted capacity	347 (14)	111	0
7	Mountain Lake Estates	0.0117 mgd calculated to 46 EDUs	Same as permitted capacity	40	6	0

Table AP4-2: Comparison of Sewer Equivalent Dwelling Units (EDUs) by Agency/Zone						
8	Cascade Shores	0.265 mgd calculated to 105 EDUs	Same as permitted capacity	86 (2)	19	0
9	Eden Ranch	0.0062 mgd calculated to 33 EDUs	Same as permitted capacity	27	4	2
11	Higgins Village (all commercial)	0.0119 mgd calculated to 47.8 EDUs	Same as permitted capacity	47.8 (47.8)	0	0
12	Valley Oak Court	0.006 mgd calculated to 10 EDUs	Same as permitted capacity	5	5	0

[1] Reserved EDUS are those which are held in reserve with a financial surety.

[2] AADWF is Average Annual Dry Weather Flow

[3] A calculated estimate. To convert mgd to EDUs, 0.69 mgd was divided by 200 since volume for one EDU is assumed to be two hundred (200) gallons per day average dry weather flow.

[4] A calculated estimate. Nevada City has 460 business connections and each business connection is estimated to average 2.8 EDUs. One residential connection (920 total) is estimated to average 1.15 EDU because we assume a few multifamily dwellings (duplex or apts) may have more than 1 DU per connection. Assumed 2011 usage at 0.47 mgd.

[5] The number of remaining EDUs is highly variable and is dependent upon the actual amount of wastewater generated. Since Nevada City does not have data on the average amount of wastewater generated per EDU, we assumed a rate of 200 gpd. However, it is likely that Nevada City residents generate much less. Water conservation and optimization of WWTP operations could potentially increase the number of EDUs available on a system-wide basis.

[6] A calculated estimate. To convert mgd to EDUs, 0.0115 mgd was divided by 69 since data show volume for one EDU is approximately sixty-nine (69) gallons per day at average dry weather flow. However, standard calculations use 200 gpd per EDU and this computes to a design capacity of 57 EDUs. Kingsbury Green's attached townhouses, small size, and limited landscaping means less water use per DU.

[7] A calculated estimate. Kingsbury has 45 residential connections representing 45 total EDUs (i.e. a one-to-one match. Usage at 0.0031 mgd per Chapter 7. Range of remaining EDUs is dependent on usage.

[8] Source for all zones: Nevada County Sanitation District No. 1. Sewer EDUs per Zone. 2014. Design Capacity EDUs for the County Sanitation District were calculated by adding up the following metrics: Connected EDUs + Reserved EDUs + Remaining EDUs. Each of these metrics is described in Chapter 8.

Capacity of Disposal Systems

At the WWTP, after the treatment is carried out, each District needs to dispose of liquid effluent and biosolids. Biosolids are typically trucked to a nearby landfill. Although there are no regulatory limits to the amount of biosolids that can be disposed of in a landfill for the wastewater service providers, each landfill typically has a physical constraint on its capacity based upon its size. Liquid effluent is typically discharged either to land (such as a golf course in the case of Kingsbury Greens CSD) or to surface water. Discharge of liquid effluent to surface water is regulated by the Regional Water Quality Control Board.

The term "permitted capacity" represents the maximum amount of treated effluent that the facility is allowed to direct to a particular disposal site. Permitted capacity is established for a limited term. When permits are renewed, discharge requirements may change to be consistent with any new regulations. Generally, the State Water Board and the Central Valley Regional Water Board take a variety of factors including climate, surface water flows, and water quality into consideration when developing new or modified regulations. Climate and surface water flows are variable metrics. Water quality monitoring practices are continuously refined and experience new innovations in monitoring and testing.

NPDES permits place limitations on effluent, specifying that contaminants such as BOD, TSS, pH, ammonia, dichlorbrommethane, and lead cannot exceed specified water quality thresholds. Exceedance of the allowable limits to these thresholds can result in limits to the amount of effluent that can be discharged. This type of limit represents a constraint on the capacity of a wastewater system and should be evaluated on a case-by-case basis utilizing the results from monitoring and testing. These regulations are a tradeoff for maintenance of a clean and healthy water supply for agriculture and municipal drinking water and other beneficial water uses.

AP.5 ENHANCED INFRASTRUCTURE FINANCING DISTRICTS

This Appendix presents a Fact Sheet on Enhanced Infrastructure Financing Districts prepared by the California Economic Summit.

Enhanced Infrastructure Financing Districts:
New financing tools help communities make needed infrastructure investments

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STRUGGLING TO PAY FOR AN INFRASTRUCTURE PROJECT? NEW FINANCING POWERS CAN HELP.

Enhanced Infrastructure Financing Districts (EIFDs) offer local governments new financing authorities to build the foundation for livable, sustainable communities—from transit stations, mixed-use developments and parks to next-generation water systems. EIFDs can be formed by a city or county and all types of special districts. Through these new entities, authorized by legislation in 2014, local governments can form a public financing authority with the power to access and bundle an unprecedented array of funding streams—including the tax increment powers once used by redevelopment agencies.

To create a district: Pick a project, draw boundaries, invite partners

These new districts provide communities with a new way to pay for local infrastructure projects and meet regional sustainability goals.

To create a district, a city or county—or a group of cities, counties, or other local agencies—must first identify its goal. In some cities, a district could be used to restore a stretch of urban river. In others, it may focus on upgrading sidewalks and streets, while modifying runoff systems to capture stormwater. An EIFD can also be part of a broader effort to reduce traffic congestion and greenhouse gas emissions through mixed-use development around a new transit or High Speed Rail station.

Once a goal is identified, a district line is drawn around the area targeted for investment—which can be as small as a few city blocks or as large as a watershed. A city or county must initiate proceedings, inviting other local governments to join. The districts then provide a formal way for local governments to work together across jurisdictional lines—allowing local agencies to do together what they can't always afford to do by themselves.

Districts put their plans in motion by creating a public financing authority to operationalize the projects' details—and tap into a long list of potential revenue sources from each participating local government.

New powers are more flexible, broader than redevelopment

EIFDs have most of the powers of the redevelopment agencies disbanded in 2011—but the new districts have more flexibility and a more expansive financing toolkit. Some of the biggest differences:

- **Blight:** EIFDs are not required to focus only on blighted areas. They can provide project financing anywhere in a community.
- **Financing authority:** Like redevelopment agencies, EIFDs can fund projects by capturing a portion of the growth in property taxes they generate—though tax revenue intended for schools cannot be used. EIFDs can also use other financing tools—generating new revenue streams through benefit assessments and user fees—that can attract private investment and support a broader portfolio of projects.
- **Affordable housing:** EIFDs can be used to invest in affordable housing, but unlike redevelopment, there is not a required specific housing set-aside. EIFDs must follow state laws against displacing existing residents.

What an EIFD can invest in:

- **Transit Priority Projects** in sustainable communities strategies
- **Affordable housing** within mixed-income housing developments
- **Water projects** including stormwater capture, groundwater recharge, and river restoration
- **Transportation facilities,** including highways, parking, and transit
- **Renewable energy** projects
- **Community parks, recreation facilities, and open spaces**
- **Brownfield restoration,** environmental mitigation
- **Industrial structure construction** or repair

THE DETAILS: PAYING FOR INFRASTRUCTURE PROJECTS

Through enhanced districts, local governments can tap into all existing infrastructure financing authorities—while also accessing the tax increment powers once used by redevelopment agencies. The districts can also bundle these new revenue streams—choosing just the right option needed for a particular project—to support projects that cross city, county, and special district lines.

While the districts can also access state and federal funds, their local financing powers fall into two broad categories:

1. Revenues from property tax growth

To fund its investments, the district can capture a portion of the growth of local property tax revenues attributable to its projects—with the approval of the local entities involved. This includes revenue streams both inside and outside the district:

- **District-wide tax increment:** An EIFD can use a portion of existing property tax revenue growth within the district to support its investments. Once this revenue stream is created, the new district can issue tax increment bonds to attract private capital, with the approval of 55 percent of voters living within the district.
- **City- or county-wide revenues:** The EIFD can also capture a portion of the growth in city-wide or county-wide property tax revenues—with those governments' approval. This includes billions of dollars provided to local governments by the state to backfill the loss of Vehicle License Fee revenues.

2. Revenues from value project creates

An enhanced district can also use funds from benefit assessments and user fees levied on properties within the district. A link must be established between the payer and beneficiary for each project and property involved. These revenue streams, which can be magnified with private borrowing, include:

- **Benefit assessments:** The public financing authority can levy assessments against properties within the district based on the benefits derived from the project. These assessments require majority approval of the district's property owners.
- **User fees and public private partnerships:** A district can also charge fees for users of the infrastructure—and then leverage that revenue stream through private investment.
- **Loans:** A city, county, or special district can make loans to an EIFD.
- **Federal and state grants:** An EIFD can access federal and state funds, including state cap-and-trade proceeds.

CASE STUDY: Investing in infill

The challenge: As regions look to reduce sprawl and improve air quality, infill development has emerged as a popular solution. Cities eager to invest in transit stations, affordable housing, and mixed-use development have a new state resource in cap-and-trade funds. But finding a local match can be difficult—as is managing land use plans that require coordination of multiple cities, counties, and special districts.

How an EIFD can help: New financing districts can provide funding options and a way to work together on sustainable growth. A group of cities interested in building a transit line, new stations, and developing the neighborhoods around them, for example, could create a financing district to do all three. Along with the transit projects themselves, the district can identify a range of physical improvements—sidewalks, streets, redesigned traffic patterns, and new parking structures to create space for walking and bicycles. User fees from parking and circulation systems can be combined with cap-and-trade funds and revenue growth from rising property values to leverage private investment. The district then serves as a land use platform for cities, counties, and local agencies to work together to see the project to completion.

CASE STUDY: Paying for water projects

The challenge: Communities have long lists of deferred water projects—from restoring urban creeks to investing in systems to capture stormwater. The biggest reason? State investment is shrinking, local tax measures can only go so far, and local governments can't support projects with their own money.

How an EIFD can help: In the new enhanced districts, local governments have a funding solution. A city or county interested in working with resource agencies to expand a stormwater capture system, for example, can form a financing district empowered to conduct benefit assessments against local property owners and levy fees on water users. When combined with cap-and-trade funds and water treatment grants, this bundled revenue stream could attract private investment—and get many water projects off the shelf.

The CA Economic Summit is a partnership between California Forward and the California Stewardship Network, two civic organizations that supported—and helped shape—the 2014 legislation creating EIFDs. The Summit is now working with the Southwest Megaregion Alliance and Bay Area Council to assist local governments interested in using these new tools.

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