

Martis Valley West Parcel Specific Plan

5. PUBLIC UTILITIES AND SERVICES

5.1 Public Utilities and Services Concepts

The Specific Plan ensures that a full range of public services and utilities will be available to serve the needs of MVWPSP residents, businesses and visitors by funding and/or installing onsite infrastructure that is appropriately sized and designed, and by identifying funding sources for ongoing services (see Chapter 8). The utilities and services addressed in this section include water supply, wastewater conveyance, storm drainage, solid waste collection and disposal, law enforcement, fire and life safety, schools, and dry utilities (gas and electric). Parks, open space and trails are addressed in Chapter 6.

The Specific Plan will be served by a number of providers in the Martis Valley, shown in Table 5-1. The Northstar Community Services District (NCSD) will provide water, sewer and wastewater treatment (via the Tahoe-Truckee Sanitation Agency [TTSA] treatment plant), fire and life safety and some recreation services. The NCSD was formed in 1990 and provides a wide range of services, including water supply, sewer collection and treatment (by contract with the Tahoe Sanitation District [TSD], which conveys wastewater from NCSD system to the TTSA plant), snow removal, fire and life safety, fuels management, road surface maintenance, solid waste management, and trail construction and management. The MVWPSP Area will be annexed to NCSD.

Other service providers include Placer County, the Truckee-Tahoe Unified School District, Tahoe Sierra Disposal Company, Liberty Energy, and Southwest Gas Corporation.

Services to MVWPSP Area	Agency
Water Supply	Northstar Community Services District (NCSD)
Sewer and Wastewater Treatment	NCSD/Truckee Sanitation District (TSD)/Tahoe-Truckee Sanitation Agency (TTSA)
Stormwater Drainage	Private
Solid Waste Collection and Disposal	NCSD/Tahoe Truckee Sierra Disposal Company
Fire and life safety	NCSD
Law Enforcement	Placer County
Public Schools	Tahoe-Truckee Unified School District (TTUSD)
Libraries & Other County Services	Placer County
Electricity	Liberty Utilities CalPeco
Natural Gas	Southwest Gas Corporation

5.2 Public Utilities and Services Goals & Policies

The following goals and policies apply generally to the provision of services and utilities generally. In some cases, policies that are specific to a particular service or utility are found within the relevant sections.

Goal PU-1: Create a comprehensive network of public services and utilities that accommodates MVWPSP development.

Goal PU-2: Provide public services and utilities in a manner that ensures that existing customers are not adversely affected.

Goal PU-3: Conserve resources through the use of efficient utility systems, technologies and design.

Policy PU-1: Construct the infrastructure needed for each phase at or prior to development of that phase.

5.3 Water Supply & Distribution System

Overview & Context

Water supply in the Martis Valley comes primarily from groundwater. The MVWPSP will be annexed to the Northstar Community Service District (NCSD), one of three water purveyors in Martis Valley. The MVWPSP is located upslope and to the south of the Martis Valley groundwater basin,

which is defined as a low-lying area about 57 square miles in size and completely contained within a larger watershed area of approximately 167 square miles. Recent studies and modeling estimate that average recharge is approximately 32,745 acre-feet per year (afy), but ranges from approximately 12,140 to 56,790 afy, according to the NCSD.

The NCSD Master Water Plan (MWP) update identifies improvements that will be required to serve the future demands in the existing NCSD service area, including the drilling and development of additional wells and the construction of pumping stations, transmission mains, and storage tanks.

Water Supply & Distribution Policies

Policy PU-2: In collaboration with NCSD, identify and develop necessary infrastructure to provide water to the MVWPSP Area, including storage facilities, water lines and possibly a new well(s).

Policy PU-3: Require the efficient use of water through installation of water-efficient fixtures, use of native and drought-tolerant landscaping, and water-efficient design.

Policy PU-4: Maintain water supply and pressure sufficient to serve annual and daily peak demand, and fire flows.

Water Supply & Distribution System

Water supply will be delivered to the MVWPSP Area by NCSD from either the expansion of existing NCSD facilities or from an onsite system managed and maintained by NCSD. Within the MVWPSP Area, water lines will be located within rights-of-way and NCSD utility easements. Fire hydrant assemblies will be located per NCSD standards with 6-inch laterals.

Water demand for the Specific Plan was calculated based on the potential unit count of 500 Single-family Residential, 260 Townhomes/Condos and 6.6 acres of Commercial uses. For the purposes of this Specific Plan, a maximum daily water demand of 750 gallons/day for Single Family and 450 gallons/day for Townhomes/Condos was assumed. The Commercial demand is estimated at 10,000 gallons/day based on potential commercial type and building square footage. Assuming 100% occupancy, Specific Plan water demand will be approximately 492,000 gallons per day or 0.49 million gallons per day (mgd), and annual demand could be approximately 550 acre-feet per year (AFY). Actual water demand would be lower, because the MVWPSP Area development will rarely, if ever, be occupied at 100%.

Option 1 - Offsite Connection

Under this option, the Northstar Community Services District (NCSD) would provide



The MVWPSP will work with the Northstar Community Service District to identify and develop necessary infrastructure to provide water to the MVWPSP plan area.



Water conservation will be achieved by promoting natural or native vegetation as well as low-water landscaping.

water service for the MVWSP by expanding the existing water supply, storage, and distribution. Tentative locations of the water main connections for the MVWSP development are shown in Figure 5-1. The potential proposed offsite water infrastructure improvements required to connect to the existing NCS D system include approximately 8,600 linear feet of water line to connect to the NCS D water system at Highlands View Road (See Figure 5-2). This option would include pump systems to new water storage tanks on site.

Option 2 – Onsite System

The NCS D would maintain and service an onsite water system consisting of one or more new wells and a pump system that would convey water to two new water storage tanks. Tentative locations of the water mains, tanks and connections for the MVWSP development under this option are shown in the conceptual utility exhibits for the Specific Plan (Figure 5-1).

Water Storage

Water storage facilities will be adequate to store water for peak day demand and fire flows for the MVWSP Area. It is anticipated that two 350,000 gallon water storage tanks will be constructed within the MVWSP, at an elevation of approximately 7,750 feet mean sea level (msl). The tanks are planned to be partially buried for aesthetic purposes, with the outlet piping near existing grade.

Water Conservation Measures

The MVWSP promotes water conservation through measures designed to reduce irrigation needs and to improve the efficiency of water fixtures. The following measures will be implemented where feasible in order to conserve water.

- **Native and Low-Water Use Landscaping:** Landscape and plantings in public areas shall be limited to native and drought-tolerant plants, except where a particular plant type is needed for functional reasons (e.g., lawn bowling). Lawns and other water-intensive landscaping shall not be used except where necessary.
- **Smart/Centrally-Controlled Irrigation:** Smart and centrally-controlled irrigation systems shall be used throughout the MVWSP, and shall be set to restrict irrigation to the application rates and durations necessary to maintain landscaping.
- **Recirculating Hot Water Systems:** Where feasible, recirculating water systems shall be used.
- **Interior Fixtures and Appliances:** High-efficiency water fixtures (e.g., faucets, toilets) shall be used in all MVWSP construction.
- **Energy Star:** Use of Energy Star appliances that minimize water use is encouraged.

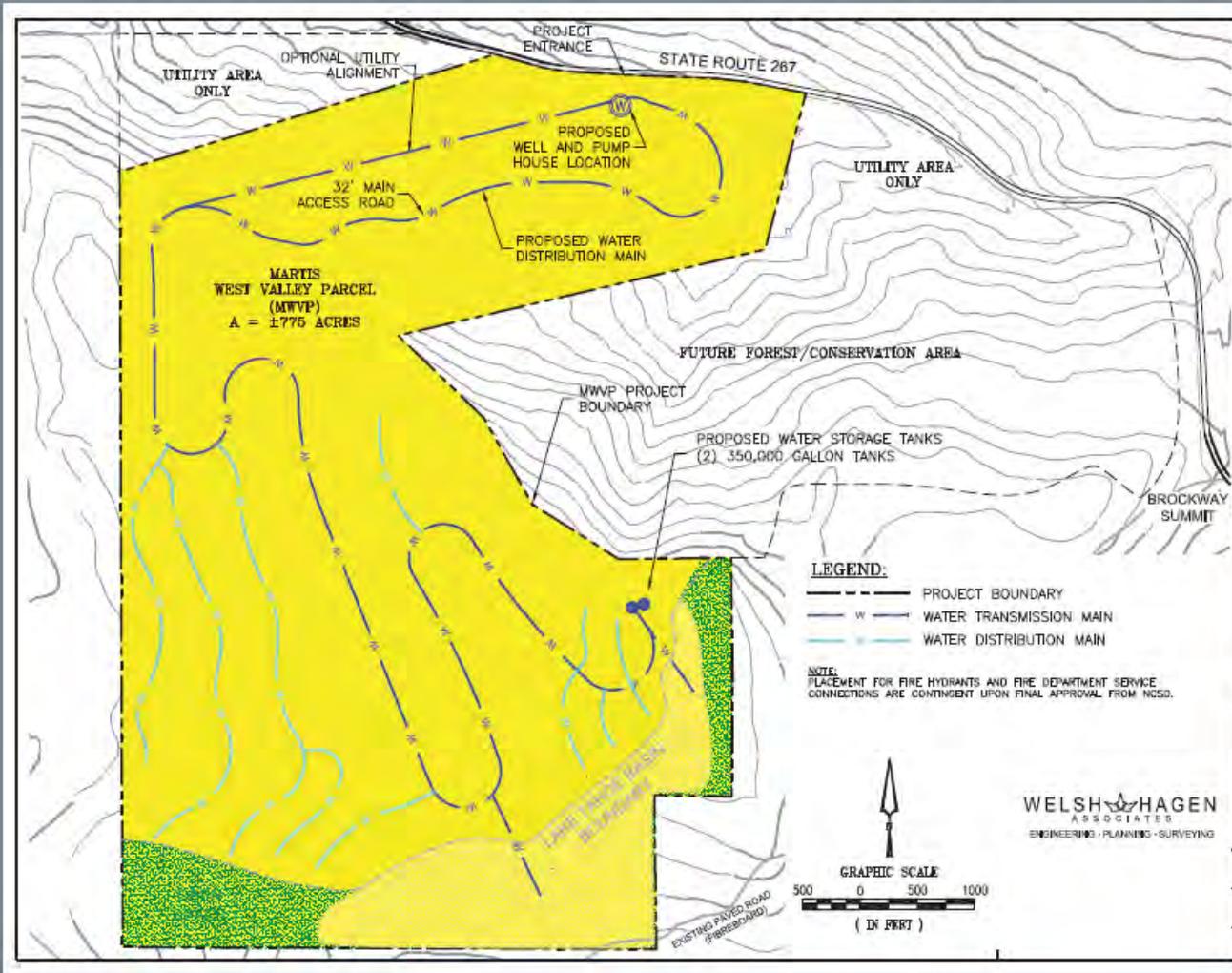


Figure 5-1 Proposed Water Plan

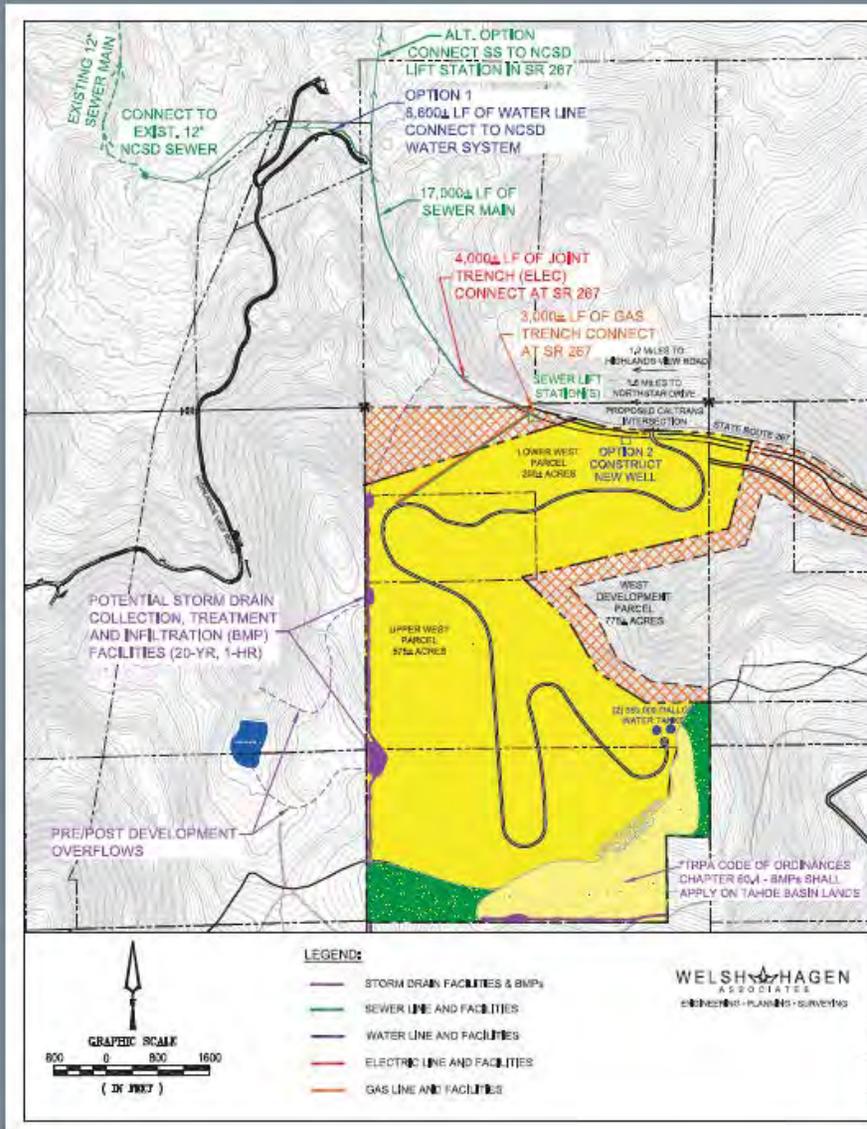


Figure 5-2 Offsite Infrastructure Improvements

5.4 Wastewater Collection & Treatment

Overview and Context

NCS D will provide sanitary sewer services to the MVWPSP. NCS D maintains a collection and transmission system with approximately 32.5 miles of sewer mains, three pumping stations and an inverted siphon system that runs from the Northstar Golf Course to the Truckee Airport access road. NCS D conveys wastewater to the Truckee Sanitary District (TSD) main in Truckee Airport Road. TSD then conveys flows to the Tahoe Truckee Sanitation Agency (TTSA) regional wastewater treatment plant in Truckee.

Wastewater Policies

Policy PU-5: In collaboration with NCS D, identify and develop necessary infrastructure to provide sanitary sewer facilities to the MVWPSP Area, including new sewer lines and lift stations.

Policy PU-6: Design and construct onsite sewer facilities consistent with Section 22-05 of the NCS D Code.

Policy PU-7: Implement the water efficiency measures described above, which will also benefit the sewer system by reducing the amount of wastewater that required collection, conveyance and treatment.

Wastewater System

Sewer facilities will be sized to accommodate flows from MVWPSP development. The maximum peak wastewater production, assuming 100% occupancy, will be approximately 492,000 gallons per day or 0.49 mgd. Actual peak production is likely to be lower than this because the MVWPSP will rarely, if ever, be 100% occupied, and a portion of this water will be infiltrated on site, because it will be used for irrigation.

Sewer service and wastewater treatment will be provided by NCS D through its contract with TSD. As shown in Figure 5-3, sewer lines will be located within streets and NCS D utility easements. The collection system will flow by gravity to a new sewer lift station located in the northeast portion of the MVWPSP site, near SR 267 (see Figure 5-2). It is anticipated that a 4-inch force main will be constructed within or adjacent to SR 267, Highlands View Road and Northstar Drive rights-of-way and NCS D utility easements to convey wastewater to an existing 12-inch sewer main located on Northstar Drive.

Another option would be to construct a gravity sewer main that conveys

wastewater to the NCS D lift station located on SR 267. It is anticipated that approximately 17,000 feet of sewer line, a combination of both gravity line and force main, will need to be constructed for the project (See Figure 5-2).

Sewage generated within the Tahoe Basin will be exported outside Tahoe Basin.

5.5 Drainage & Water Quality

Overview & Context

The majority of the MVWPSP is situated within the West Martis Creek Watershed. A small portion of the MVWPSP is situated within the Middle Martis Creek Watershed. The Martis Creek Watershed is located on the southern border of the Truckee River Hydrologic Unit. This unit is located along the Nevada-California border on the eastern slope of the Sierra Nevada mountain range and incorporates a watershed with a drainage area of approximately 436 square miles. Four major drainages (or hydrologic subunits) occur within the Truckee River Hydrologic Unit: the Truckee River, Prosser Creek, Martis Creek, and Donner Creek drainages.

The portion of the MVWPSP within TRPA's jurisdiction is in the Lake Tahoe Basin Watershed.

West Martis Creek merges with Middle Martis Creek and the main stream of Martis Creek at the northern end of the Northstar Golf Course. Martis Creek then flows on to Martis Lake. The West Martis Creek watershed is approximately 2 miles upstream of the confluence of West Martis Creek with Martis Creek. Martis Creek eventually drains into the Truckee River. The length of the West Martis Creek watershed is just over four miles in a north-south orientation with an average east-west width of about 1.25 miles. The watershed, consisting of approximately 3,145 acres, extends to the southerly ridgeline separating the Martis Valley watershed from the Lake Tahoe Basin watershed.

The West and Middle Martis Creek watershed areas are characterized by steep mountain slopes around the perimeter (20–50 percent slope), with a relatively flat basin floor (5–15 percent slope). Elevation of its ground surface ranges from about 5,850 feet above mean sea level (msl) to 8,617 feet msl at Mount Pluto, a major landmark of the area and feature that defines the southwesterly extent of the watershed. At a midpoint between headwaters to the south and the stream's confluence with Martis Creek to the north, the terrain becomes less steep as it continues to maintain its downward slope in a northerly direction. The MVWPSP Area lies between 7,000 to 7,800 feet in elevation.

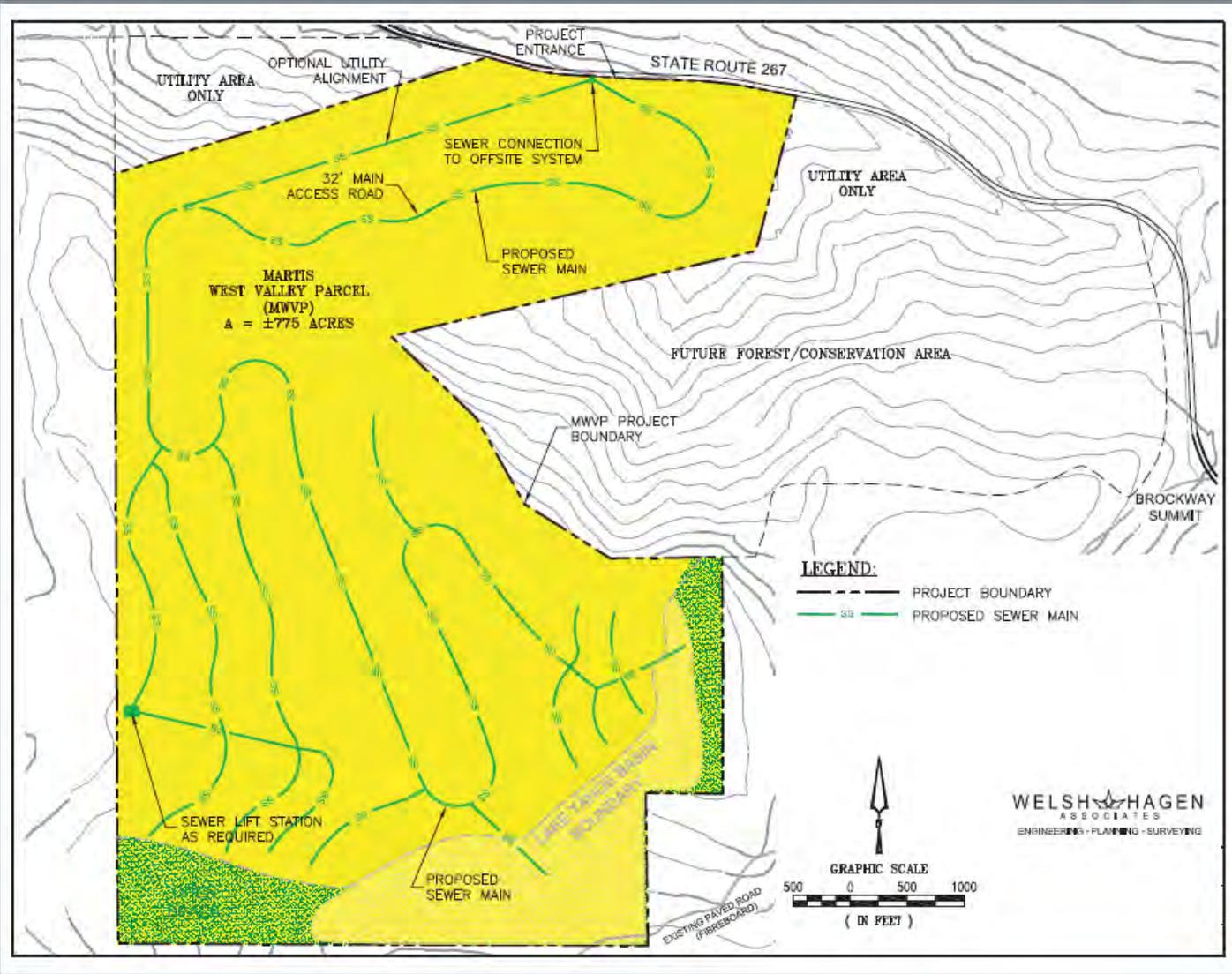


Figure 5-3 Proposed Sewer Plan

The West and Middle Martis Creek watershed areas exhibit little evidence of perennial or ephemeral drainage courses that would convey a significant quantity of concentrated runoff, with the exception of the primary watercourses that are tributaries to Martis Creek. Small watercourses do exist at the outfalls of existing culverts located throughout the watershed; however, observation indicates that these flows are small and historically percolate into the forest soils and fractured volcanic subsoil shortly downstream of outfalls. The vast majority of runoff, therefore, occurs by sheet flow, which is often interrupted by downed timber, pine needle duff, and rock outcroppings. Existing drainage is either percolated into the soil mantle or directed by existing slopes to topographic features that can further convey drainage to watercourses located below the MVWPSP area.

Within the Martis Valley, there has been community concern regarding the potential of projects to affect drainage conditions on other existing development. The MVWPSP drainage and watershed do not encroach, reach or directly affect any other existing development, most notably Aspen Groves Condominium Association or their associated lands.

West Martis Creek

West Martis Creek flows from the southeastern portion of the West Martis Creek watershed in a northerly direction east of the MVWPSP Area. Sawmill Lake, a water supply dam and reservoir, intercepts West Martis Creek at elevation 6,950 (See Figure 5-4). West Martis Creek flows in a moderately forested and well-defined channel below the reservoir for approximately 4,200 feet, before the slope flattens and vegetation changes to predominantly riparian species. In the following 3,400 linear feet, the channel skirts the easterly side of the recreation center near the Northstar Village, and subsequently braids through an existing grassland and meadow upstream of Northstar Unit 1A (Beaver Pond). At this point the flow joins the West Fork of West Martis Creek.

Middle Martis Creek

Middle Martis Creek flows adjacent to State Route 267, from the top of Brockway Summit to the confluence of West Martis Creek and the mainstream of Martis Creek. Middle Martis Creek flows in a moderately forested and well-defined channel alongside SR 267 for approximately 4 miles, along the southwest side of the roadway, then crosses over to the northeast side of the roadway approximately 1,500 feet south of Highlands View Road.

MVWPSP Drainage Features

The MVWPSP Area is currently used for summer and winter recreation such as mountain biking, hiking, snowshoeing and cross-county skiing, as well as logging. Logging has been the longest standing use of the area. A number of unimproved logging and maintenance roads crisscross the watershed and the MVWPSP area. These roads have seen substantial use over the many years of logging. While these roads are generally stabilized in terms of their response to storm events, they are a potential source of erosion and sedimentation.

Runoff from the existing parking areas on the MVWPSP Area currently drains to the east through a series of culverts located along the eastern boundaries of the parking areas. Runoff collected by these culverts is discharged directly the West Fork of West Martis Creek.

Floodplain

All of the Martis Creek watershed area, per the Federal Emergency Management Agency (FEMA) via its National Flood Insurance Program, is in a Zone X designation—"areas determined to be outside 500-year floodplain". This designation indicates the watershed area is dominated by terrain that is either not prone to flooding or is considered to be of lesser concern by FEMA and has not been studied in detail. There are no 100-year flood hazard areas designated by FEMA within the MVWPSP area.

Drainage and Water Quality Policies

Policy PSU-8: Design and size the drainage system so that post-development peak flows do not exceed pre-development peak flows, and are consistent with Placer County Flood Control Manual standards.

Policy PSU-9: Implement Best Management Practices (BMPs) and Low Impact Development (LID) measures to protect surface water quality and contribute to the Basin Plan goals for Martis Creek and the Truckee River.

Policy PSU-10: New development shall be located outside of the 100-year floodplain.

Policy PSU-11: Implement applicable, effective erosion control and water quality measures identified in the Placer County Storm Water Management Manual, Grading Ordinance, and Low Impact Development Guidebook, including the Guidebook section for LID Site Design and Runoff Management Measures for Placer County in High Sierra Areas.

Drainage and Water Quality Infrastructure

The Martis Valley West Parcel drainage is fragmented into two parts, Martis Valley and Tahoe Basin. Onsite drainage facilities will be designed to ensure that there are no significant changes to the hydrology of the existing watersheds. MVWPSP runoff will be collected, treated and infiltrated on-site to the greatest extent possible via basins, curb and gutter, swales, rock line channels, infiltration systems, retention/detention basins, BMPs and other Low Impact Development measures. Post-development peak flows leaving the project site will be less than or equal to the pre-development peak flows (or existing conditions peak flows) as flows will ultimately be conveyed to underground or above ground retention/infiltration facilities which will handle peak runoff of storm events. No additional flows will leave any of the MVWPSP watersheds as a result of the development. The MVWPSP will mitigate the increase in peak flow as result of the development.

The conceptual drainage plan is illustrated in Figure 5-5.

The majority of the MVWPSP storm water will follow its existing hydrological course, either the NCSD reservoir or the Middle Martis Creek. The MVWPSP is not anticipating any off-site drainage improvements.

The project drainage system will comply with applicable regulations, including the Placer County Storm Water Management Manual, Tahoe Regional Planning Agency's adopted Code of Ordinance and Lahontan Regional Water Quality Control Board (RWQCB) Storm Water Discharge Requirements.

Runoff from the entire development will be collected, treated if necessary and infiltrated within the respective watersheds. The MVWPSP plans to direct all storm water through the Master Storm Water Drainage System, which could include re-routing the Basin storm water to the MVWPSP Master Drainage System within the Martis Valley. Thus, no MVWPSP storm water is anticipated to reach Lake Tahoe. In addition, it is anticipated the emergency vehicle road will be Watson Creek Road aka Fibreboard Road. If any Fibreboard Road improvements are required, any associated storm water improvements will also be re-directed to the Master Drainage System.

Lastly, civil improvements, roadways, parking areas and driveways, will have associated landscape and erosion control, such as native vegetation on cut/fill and retaining walls.

Stormwater Quality

Low Impact Development

Low Impact Development means using a land planning and engineering design approach to managing storm water runoff that emphasizes conservation and use of on-site natural features to protect water quality. Project runoff

will be collected, treated, and infiltrated onsite to the greatest extent possible via basins, curb and gutter, swales, rock line channels, infiltration systems, retention/detention basins, Best Management Practices (BMPs), and other Low Impact Development (LID) measures.

Best Management Practices

To ensure that no direct or indirect discharge of sediment results from construction activities into Martis Creek, water quality protection measures (Best Management Practices [BMPs]) will be implemented both during and after construction, in accordance with the County Department of Public Works Grading Ordinance requirements and Lahontan RWQCB regulations involving control of water discharges under the National Pollutant Discharge Elimination System (NPDES) program. The Lahontan RWQCB will require preparation of a Storm Water Pollution Prevention Plan (SWPPP) before construction activities begin. Appendix E provides a summary of proposed BMPs that will be incorporated into the MVWPSP, including both temporary (construction-related) and permanent BMPs.

5.6 Solid Waste Disposal

Overview and Context

Solid waste disposal in the Martis Valley is provided by Tahoe-Truckee Sierra Disposal (TTSD) through a contract administered by NCDS. TTSD's waste disposal site is the Placer County Eastern Regional Sanitary Landfill (ERL) located on Cabin Creek Road, off State Route 89, approximately 3 miles south of Interstate 80. Residential and commercial waste is evaluated and sent to its appropriate location. Any load containing recyclable material is directed to the Material Recovery Facility (MRF). All separated inert material, such as dirt, rock and green waste, is sent "topside" to be processed. Residential material collected on route by TTSD is also sent to the MRF for processing. Collection of Household Hazardous Waste occurs during scheduled events throughout the year at TTSD's Small Quantity Generator Hazardous Collection Center.

Solid Waste Policies

Policy PU-12: Promote and encourage recycling of consumer and business waste in order to reduce landfill requirements and lengthen the service life of existing landfills.

Policy PU-13: Provide collection bins for recycling at businesses.

Policy PU-14: Require that all waste containers be bear proof or that containers are located within bear-proof enclosures.

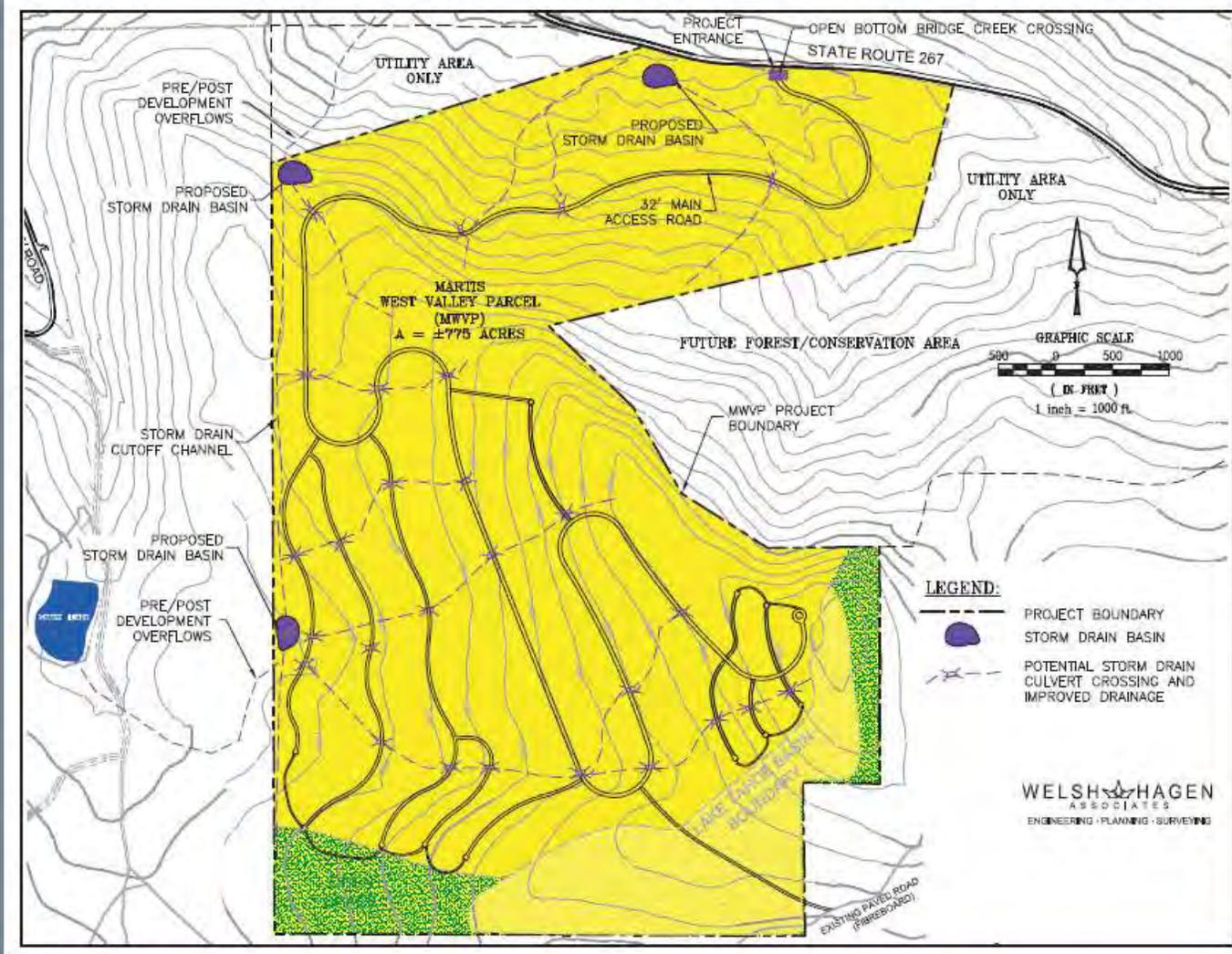


Figure 5-5 Proposed Storm Drainage Plan

Solid Waste Facilities

MVWPSP solid waste will be collected and disposed of by TTSD. The Specific Plan will minimize the amount of solid waste requiring disposal by promoting recycling throughout the MVWPSP Area.

5.7 Dry Utilities

Overview and Context

Electrical service in the MVWPSP vicinity is provided by Liberty Energy, which has electrical lines along SR 267. The nearest substation is in Truckee. CalPeco maintains transmission lines that traverse a portion of the plan area.

Natural gas is provided by Southwest Gas. A transmission line is located in the SR 267 right-of-way.

Dry Utilities Policies

Policy PSU-15: All new dry utilities shall be undergrounded and coordinated with utility providers regarding location and size of new facilities to serve the MVWPSP Area.

Policy PSU-16: Support and promote the use of energy-reduction measures and alternative energy sources.

Please see Section 7-9, Air Quality and Climate Change, for additional energy-related policies.

Dry Utilities Infrastructure

Underground electrical lines, natural gas lines, communications lines and cable television lines will be installed in the rights-of-way of MVWPSP streets and within utility easements with associated aboveground and belowground vaults and boxes. It is anticipated that these lines will connect to existing utility lines in State Route 267. Approximately 4,000 linear feet of joint trench will be extended from the MVWPSP Area connection to existing electrical lines and communication lines in State Route 267. Approximately 3,000 linear feet of gas trench will be needed to connect the MVWPSP to the existing gas line in SR 267. A fiber optic cable may be installed as part of the installation of the utilities.

5.8 Fire and Life Safety and Law Enforcement

Overview and Context

The MVWPSP is in the vicinity of 3 Fire Stations--the Northstar Fire Station,

Highlands Fire Station, and Kings Beach Fire Station. The Northstar Fire Station and Highlands Fire Station are operated and maintained by the Northstar Fire Department (NFD) under the NCSO, while the Kings Beach Fire Department is operated by North Tahoe Fire Protection District. The Northstar Fire Stations are the closest in proximity to the MVWPSP Area at approximately 4.5 to 5.5 miles (see Figure 5-6). The Kings Beach Fire Station is approximately 6.0 miles to the south along State Route 267.

The NFD responds to both structural and wildland fires, and provides hazardous materials, vehicle accident and medical aid services. The NFD has a staff of 18 full-time, 15 of whom cover three shifts every day, and 4 part-time fire fighters who augment full-time staff as needed.

Law enforcement for the MVWPSP Area is provided by the Placer County Sheriff's Department. The substation nearest to the MVWPSP Area is located in North Lake Tahoe.

Fire and Life Safety and Law Enforcement Policies

Policy PSU-17: Incorporate design features that meet or exceed applicable safety regulations, including NCSO Ordinance 27-11.

Policy PSU-18: Require that property owners maintain defensible space around structures, as defined by the NCSO.

Policy PSU-19: Design and site all structures in a manner that minimizes risk from fire hazards.

Policy PSU-20: Encourage and practice fuel reduction methods consistent with the NCSO Defensible Space Ordinance (26-09).

Fire and Life Safety and Law Enforcement Practices

Development projects within the MVWPSP will consult with the NFD and Sheriff's Department during project design to ensure that access for emergency vehicles is adequate, and that project design promotes fire and public safety. The CC&Rs for individual projects will mandate that property owners maintain adequate defensible space around structures. Additional fire safety measures will be promoted through public outreach and education.

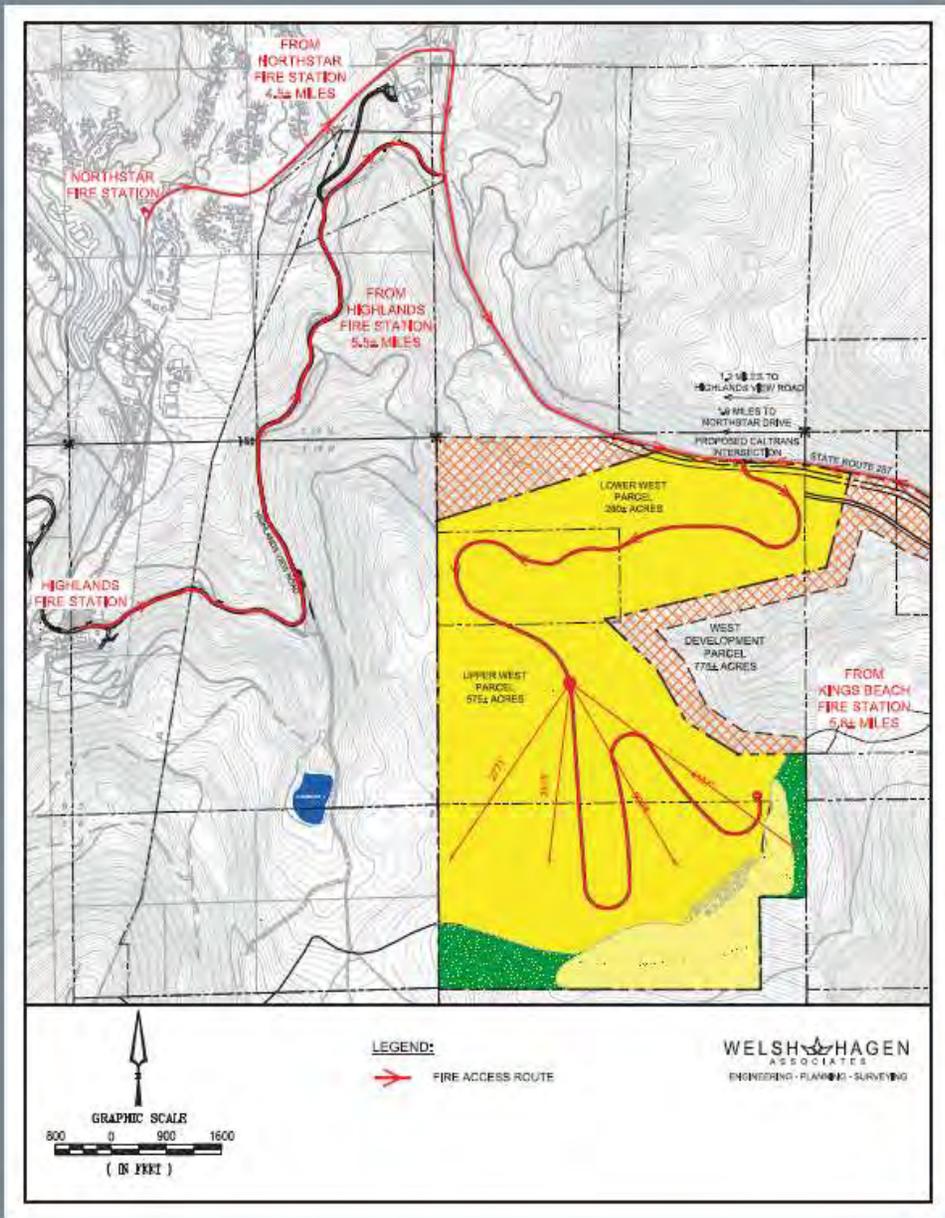


Figure 5-6 Fire Stations Serving MVWPSP Area

5.9 Schools

Overview and Context

School services in the Martis Valley are provided by the Tahoe-Truckee Unified School District (TTUSD). The schools that serve the MVWPSP Area are Truckee Elementary School (K-6) and Alder Creek Middle School, North Tahoe High School and Tahoe Truckee High School. The majority of the MVWPSP is in the Tahoe Truckee High School attendance boundaries. The southwest portion is within the North Tahoe High School attendance boundaries.

The MVWPSP will not substantially increase the number of students in the TTUSD because most residential units will be second homes or transient occupancy units. The number of permanent residents will be small. Employees of the commercial development may live in the region, and have school-age children. The schools those children attend will depend on where employees live. However, there would be only a small number of employees and employee housing maybe provided outside the Plan Area. Housing would be subject to applicable development fees for school facilities and property taxes for school services.

School Policies

PSU-21: Residential projects shall pay the applicable school facilities fees.