

## ***Squaw Valley Public Service District - Alternative/Supplemental Water Supply and Enhanced Utilities Feasibility Study***

### **Executive Summary – Final**

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#### **ES.1 PURPOSE**

The Squaw Valley Public Service District (District) commissioned ECO:LOGIC Engineering to conduct a study investigating the feasibility of importing water supplies from outside District boundaries as a supplemental and/or alternative water supply for the Valley's current and future water supply customers. Drilling new production wells within the Olympic Valley has become increasingly more difficult due to the limited capacity of the Squaw Valley aquifer to yield sufficient quantity and quality of potable water.

This feasibility study addresses the following topics:

- Technical Memorandum No. 1 – Water Demand Projections and Water Supply Needs
- Technical Memorandum No. 2 – Truckee River Side Drainages Evaluation
- Technical Memorandum No. 3 – Groundwater Availability in the Martis Valley
- Technical Memorandum No. 4 – Transmission Main Alignment Evaluation
- Technical Memorandum No. 5 – Environmental Constraints Analysis
- Technical Memorandum No. 6 – Planning Level Facilities Cost Estimate

#### **ES.2 WATER DEMAND PROJECTIONS AND WATER SUPPLY NEEDS**

Future buildout water demands for the District are based on the *Squaw Valley Groundwater Development and Utilization Feasibility Study, 2003 (Groundwater Study)*. The *Groundwater Study* estimated the future buildout average annual demand (AAD) and maximum day demand (MDD) for the District's service area at 1,628 acre-feet annually (AFA) and 2,525 gallons per minute (gpm), respectively.

The supplemental water supply needs are based on the difference between the District's 2007 water demands and the estimated buildout demands presented in the *Groundwater Study*. In 2007, the District's AAD and MDD were 419 AFA and 574 gpm respectively.

Based on this difference, it is estimated that the District will need to supplement their 2007 water use with an additional 1,210 AFA on an average annual basis and 1,951 gpm to meet the buildout MDD.

### **ES.3 TRUCKEE RIVER SIDE DRAINAGES**

A component of the supplemental water supply investigation included the review of potential well sites along the side drainages along the Truckee River in the Highway 89 corridor between Truckee and Squaw Valley. The side drainages evaluated included Silver Creek, Deer Creek, Pole Creek, Deep Creek and Cabin Creek, which flow into the Truckee River along Highway 89.

Based on the geology, observations, and known groundwater quality issues along the Truckee River, none of the drainages investigated appear to be particularly favorable for production of groundwater for use as a water supply for Squaw Valley, and some of the sites are considered unfavorable. All of the sites have relatively thin alluvial aquifers underlain at shallow depth by volcanic bedrock which may have either low permeability or poor water quality.

### **ES.4 GROUNDWATER AVAILABILITY IN THE MARTIS VALLEY**

#### **ES.4.1 AVAILABLE GROUNDWATER RESOURCES**

There have been a number of studies performed in the recent past discussing the availability of groundwater in the Martis Valley Groundwater Basin (MVGB). In The 2001 Nimbus Engineers report *Ground Water Availability In The Martis Valley Ground Water Basin, Nevada and Placer Counties* concluded that 24,000 AFA of groundwater is available in the MVGB. The 2003 InterFlow Hydrology, Inc, and Cordilleran Hydrology, Inc. study, *Measurement of ground water discharge to streams tributary to the Truckee River in Martis Valley, Placer and Nevada Counties, California*, concluded there may be as much of 10,000 AFA of groundwater discharge to tributary streams in the MVGB not accounted for in the water budgets suggested in previous investigations, bringing the total resource to 34,000 AF/yr. The TDPUD Urban Water Management Plan [2005] concluded “. . . it is reasonable to assume, that, at a minimum, the 24,000 AFA of [ground] water cited in the Nimbus study is available to support development in Truckee and the surrounding areas.”

#### **ES.4.2 GROUNDWATER RESOURCE DEMANDS AND AVAILABILITY**

Currently, there are four major water purveyors/parties that pump water from the MVGB. They include:

1. Truckee Donner Public Utility District (TDPUD)
2. Northstar Community Services District (NCSD)

3. Placer County Water Agency (PCWA)
4. Other Purveyors (Donner Creek Mobile Home Park, Ponderosa Golf Course, Teichert Aggregates, and other individual well owners)

The TDPUD Urban Water Management Plan [2005] indicated a buildout water demand for all water producers in the MVGB is 22,490 AFA. This has recently been revised downward by a reduction in buildout development within the PCWA service territory to 21,399 AFA. If this estimate is correct, there may be as much as 2,600 AF/yr (24,000 AFA supply minus 21,399 AFA demand) of groundwater in the MVGB potentially available for other users, including as a potential water supply for Squaw Valley. Using the Interflow Hydrology, Inc. groundwater availability estimate of 34,000 AFA, there would be as much as 12,600 AFA available groundwater resource in the MVGB.

Based on the available literature related to available groundwater resources and demands in the MVGB, it appears as if there are adequate water resources to provide groundwater in amounts sufficient to meet the buildout demand of the District, even using the most conservative estimates of the available resources and buildout demand in the Basin.

#### **ES.4.3 TRUCKEE RIVER OPERATING AGREEMENT (TROA)**

TROA was signed on September 6, 2008. The California allocation of water for the Truckee River basin downstream of Lake Tahoe provides up to 32,000 AFA, of which surface water diversions cannot exceed 10,000 AFA, to water users in the basin. The California Department of Water Resources has projected the water demands for the Truckee River basin to be 22,700 AFA by the year 2033. It appears that the additional demand requested by the District will not cause the basin demands to exceed the 32,000 AFA limit.

TROA also sets requirements on well locations and design criteria. The well location and design criteria in TROA section 10.B.2 are not onerous and do not significantly impact the drilling of wells in the Tahoe-Truckee Sanitation Agency Special Zone, the Truckee Donner Public Utility District/Martis Valley Special Zone and the Northstar/Placer County Special Zone, provided that the appropriate setbacks are maintained. The major design criterion listed in 10.B.2 is a well seal depth requirement that is present in some of the special zone standards.

#### **ES.4.4 DISTRICT'S RIGHT TO WATER FROM THE MVGB**

The two limitations on the District's right to export water from the MVGB include California groundwater law and the quantity limitations set forth in TROA. A 2007 letter from PCWA's attorney Janet Glodsmith to Mal Toy (PCWA) provided legal opinion on these issues.

With respect to California water law, use of MVGB groundwater by the District as well as by TDPUD, PCWA and NCSD is considered an appropriation of groundwater (an export not directly serving overlying landowners in the basin of origin). As appropriators from the MVGB they may only take water in excess of that necessary to serve the overlying lands. The 2007 letter indicated that "the limitation of appropriable water to the surplus over the needs of overliers and

prior appropriators creates uncertainty about the long-term availability of water for export”. Based on this uncertainty, it is recommended that the District work with PCWA and/or TDPUD to agree upon an long term allocation of potentially available water supplies from the MVGB.

Based on the TROA allocation of 32,000 AF/yr for water supply in the Truckee River basin and the California Department of Water Resources water use estimates for the MVGB, it appears that the District’s supplemental water supply need will not cause the basin water demands to exceed the allocation limit.. In June 2003, the CNWAS prepared a letter (Nelson, 2003) identifying the current water use in 2002 and the projected water use for the year 2033 in the Truckee River and Lake Tahoe Basins of California. The total groundwater and surface water demand projected for the Truckee River Basin in 2033 was estimated by CNWAS to be 22,700 acre feet. According to the chief engineer of the CNWAS, the Department of Water Resources does not expect the water demand in the Truckee River Basin to grow to the 32,000 acre foot allocation in the foreseeable future and that the demand projection contained in the 2003 letter remains valid (Sarna, 2008).

#### **ES.4.5 EXPORT WATER SUPPLY ALTERNATIVES**

There are two reasonable alternatives for developing sources of groundwater in the MVGB that might be supplied to the District. These include obtaining water service from the TDPUD, PCWA, or NCSD, or construction of new well or wells in the MVGB expressly for this purpose.

The TDPUD requires four new wells to meet their buildout demand (Ed Taylor, personal communication, 2008). Consequently, they do not have excess production capacity that could be supplied to Squaw Valley. Likewise, the NCSD plans to construct additional new wells to meet their buildout demand. Finally, the groundwater derived from the PCWA Zone 4 water system that provides the supply for the Lahontan, Siller Ranch, and Timilick subdivisions are fully committed (Brian Martin, 2008). For both the PCWA and NCSD water systems, the developments are only partially built. If the District were to select PCWA or NCSD as their future water purveyor there *may be* a scenario where the District could purchase available excess capacity and use it until the buildout demand is met by the PCWA or NCSD future customers. Nevertheless there is no guarantee that this water will be available in the future when the District needs it. This scenario should be investigated during the predesign phase of the project.

For new sources within the MVGB, two areas have been targeted for further consideration as production well sites (Figure ES-1). These include:

- A parcel of land owned by the Airport Authority located near the intersection of Schaeffer Mill Road and State Route 267. This site is located approximately 1,500 feet southwest of TDPUD’s Airport Well.
- The Sayers-Tong property located between Schaeffer Mill Road and State Route 267.

The proposed well sites are located in the Northstar/Placer zone identified in TROA. They appear to be located sufficiently far from streams, ephemeral streams, ponds and lakes to be

presumed to be in compliance with TROA. Field investigations to pin down the precise well locations will include evaluations to confirm this assumption.

## **ES.5 TRANSMISSION MAIN ALTERNATIVE ALIGNMENTS**

ECO:LOGIC investigated several different alternative alignments to convey water from the MVGB to Squaw Valley. These alternative alignments require the District to partner with Placer County Water Agency (PCWA), Truckee Donner Public Utilities District (TDPUD), or a combination of both. The alignment corridors are defined as the Highway 89 corridor, which is along the shoulder of Highway 89 between Truckee and Squaw Valley, and the United States Forest Service (USFS) Road 6 Corridor. This study also looked at the current TTSA sewer line and easement along the Truckee River as a potential alignment.

The chosen alignment corridor will be based on which water supply alternative is selected. The alternatives examined include:

- Water supply through the TDPUD water system and new transmission main along the Highway 89 corridor;
- Water supply through the PCWA water system and new transmission main along the USFS corridor.

Figure ES-1 shows the alternative alignment corridors along with the PCWA and TDPUD water system boundaries.

The feasible water supply options discussed with TDPUD and PCWA would include one of the following:

- TDPUD supplying water to the District through its existing infrastructure;
- PCWA/NCSD supplying water to the District through TDPUD infrastructure;
- PCWA/NCSD supplying water to the District through the Zone 4 existing infrastructure; or
- The District wheeling water through either the PCWA or TDPUD system and supplying water to Squaw Valley through facilities owned and operated by the District.

Any of the options would require the District to construct a number of new water supply facilities including a new water supply well, booster pump station, transmission main, and terminal water storage tank in Squaw Valley.

### **ES.5.1 HIGHWAY 89 CORRIDOR**

In this alternative, the District would finance and drill a well either in the Truckee Airport or Lahontan subdivision areas. Water would be wheeled through TDPUD's existing water system infrastructure beginning near the well site to one of two connection points:

- The intersection of Highway 80 and Highway 89 (near the intersection of Donner Pass Road);
- The intersection of Highway 89 and West River Road.

From these locations, a new pipeline would be constructed along the shoulder of Highway 89 South for approximately 9 miles towards Squaw Valley. The pipeline would terminate at a new water storage tank north of Squaw Creek and the Painted Rock subdivision.

### **ES.5.2 UNITED STATES FOREST SERVICE (USFS) CORRIDOR ALTERNATIVE**

In this alternative, the District would finance and drill a well either in the Truckee Airport or Lahontan Subdivision areas (Figure 4-3), or utilize excess available capacity from NCS D's TH-1, TH-2, and/or TH-3 wells, if available. Utilizing the option of new wells near the airport of the Lahontan subdivision, water would be piped from near Highway 267, up Schaefer Mill Road to PCWA's existing water tanks within the Zone 4 water system. If the project is phased, smaller flows could be wheeled through PCWA's existing infrastructure. Buildout flows would require a new or parallel pipeline up Schaefer Mill Road to meet the buildout 2,000 gpm. With NCS D sources, the water would be piped from the wells up Highway 267 and Schaefer Mill Road and into the PCWA system. Conveying water through NCS D's existing water system infrastructure is not feasible as this would require major capacity upgrades to the distribution system.

From the water tanks, a new booster pump station would be constructed and the transmission main alignment would then follow a southeasterly course to connect with the National Forest Service 06 Road (NFS 06). The pipeline would follow the NFS 06 Road, mostly along the existing dirt single lane roadway, until the beginning of Deer Creek. At this point the pipeline would wind down the ridge just south of Deer Creek following a series of existing dirt trails and end up south of Squaw Valley. The pipeline would then continue north along the east side of the Truckee River and cross at one of the existing bridge crossings in the vicinity of the Squaw Valley entrance. After crossing the Truckee River and Hwy 89, the pipeline would terminate at a new water storage tank north of Squaw Creek and the Painted Rock subdivision.

### **ES.5.3 TTSA CORRIDOR**

The TTSA sewer interceptor runs parallel to the Truckee River between North Lake Tahoe and the TTSA wastewater treatment plant off Highway 267. The sewer interceptor is located within an easement that ranges in width from 5-15 feet. Due to the limited width of the easement and the potential close proximity of the sewer interceptor to the new water transmission main, this alternative is not feasible for further study.

### **ES.5.4 POTENTIAL JOINT TRENCH UTILITY PARTNERS**

ECO:LOGIC met with Suddenlink Communications and Southwest Gas (SWG) to discuss their desire to participate in this project with the District as a joint utility project. Both parties expressed interest with varying conditions. NV Energy (formerly Sierra Pacific Power

Company) was also contacted but has never formally provided a response to their desire to participate in the project.

Suddenlink has already installed an above ground fiber from Truckee south to just north of the Silver Creek Campground. They have attempted for over three years to get easements to allow them to continue their fiber to Squaw Valley. Suddenlink is aggressively pursuing a route that allows them to complete their fiber run from the Silver Creek Campground to Squaw Valley. They are interested in participating in a joint trench with the District; however, if another opportunity to run their fiber presents itself in the meantime they would pursue that option first.

SWG is also interested in participating in a joint trench project with the District. If the project were to move forward, SWG would perform a survey of the Squaw Valley residents to determine the level of interest in natural gas. After this survey is completed, SWG would have a cost estimate for their infrastructure needs. However, SWG's company policy requires a third party to fund the necessary infrastructure to get natural gas to new customers. Only after new customers sign up for service, would SWG provide a reimbursement check to the third party. The reimbursement program would only occur for a ten year period after which SWG would not provide any further reimbursement to the third party. ECO:LOGIC believes there is a possibility SWG would be willing to negotiate how their part of the project would be funded.

## **ES.6 ENVIRONMENTAL CONSTRAINTS ANALYSIS**

The purpose of the environmental constraints analysis was to determine whether there are any major liabilities or fatal flaws that would severely constrain the intended use of either alignment alternative and to assess the routes from an environmental permitting/compliance perspective. The specific objectives of the analysis were to (1) identify any documented constraints through literature surveys and (2) define any additional site-specific constraints through local area knowledge. The goal is to assist in identifying the most efficient pipeline alignment from an environmental perspective.

In general, based on a literature review there appears to be no outstanding environmental compliance "fatal flaws" associated with the use of the property for water supply pipeline. The installation of pipelines along either route would require compliance with CEQA (and NEPA-NFS 06 Road Alignment), Clean Water Act Section 401 and 404, Federal Endangered Species Act Section 7, California Endangered Species Act and California Fish and Game Code Section 1600. The NFS 06 Road Alignment crosses federal lands (US Forest Service), which will trigger the need to comply with NEPA (as well as CEQA). In contrast, the Highway 89 Route is located in both Placer and Nevada County (Town of Truckee), triggering General Plan compliance for both counties and both counties will be considered "responsible agencies" under CEQA. Below is a summary of the findings.

## **ES.6.1 LISTED AND SPECIAL STATUS SPECIES**

### **Plant Species**

A desktop analysis of potential special status plant species within either pipeline alignment indicates a low to medium potential of listed status plant species being present. There is a medium potential for occurrence of Donner Pass buckwheat, Plumas ivesia, Marsh skullcap, and American manna grass. Three other species that have a low potential of impact from the proposed project are the Carson Range rock cress, the Nevada daisy, and Munroe's desert mallow because the project alignments are outside of the range of known populations of these species. The County will need to be consulted to determine if a tree removal permit is needed, if so, the timeline takes approximately one month to complete. Potential impacts and mitigation measures will need to be addressed in the CEQA/NEPA document.

### **Fish and Amphibians**

The Lahontan cutthroat trout and mountain yellow-legged frog are known to occur in tributaries to the Truckee River. Both species have a low potential for occurrence within the area of either alignment. The Lahontan cutthroat is limited to Pole Creek upstream of a natural barrier where it cannot be harmed by predators; however, populations have been encountered in Martis Creek within in the past 8 years (CNDDDB, 2008). The mountain yellow-legged frog federal listing only applies to San Gabriel, San Jacinto, and San Bernardino Mountain populations. The frog was historically found along Squaw Creek and in Squaw Meadow upstream from the end of both alignments. The last registered sighting of the frog in the project area was in the 1960s. Federally listed species and their habitat are protected under the Federal ESA. Therefore potential impacts to these species' habitat will require USFWS consultations.

### **Nesting Raptors and Migratory Birds**

ECO:LOGIC's review of the potential for special-status animal species to inhabit the either potential pipeline alignment indicates that nesting raptors and other migratory birds (northern goshawk, spotted owl, bald eagle, yellow warbler, willow flycatcher, and the osprey) would be protected and impacts to these species, should they nest on site, could be avoided by construction windows and/or nest buffer planning. There is known northern goshawk habitat along the NFS 06 Road Alignment indicating a greater lever for occurrence than along the Highway 89 Alignment. Protocol-level spotted owl surveys may be required along the NFS 06 Road Pipeline Alignment (pers. com. USFS, 2008). Other nesting raptor surveys may be required as well.

### **Mammals**

The long-legged myotis, California wolverine, Sierra Nevada mountain beaver, and the Sierra Nevada red fox have a medium potential to be impacted by either alignment. There is suitable habitat along both alignments and the species range is known to cover all or part of the project area. The Sierra Nevada Mountain Beaver has a greater chance of potential impact from the Highway 89 Alignment, since it is known to occur in several of the tributaries to the Truckee that the alignment will cross. Other mammals that could possibly be impacted by either alignment



(low potential) are the Sierra Nevada snowshoe hare, the Sierra pine marten, and the western white-tailed jackrabbit.

## **Summary**

Based on ECO:LOGIC's literature review, the Army Corps of Engineers will likely need to conduct Federal ESA Section 7 consultations with the USFWS for the federal species mentioned above. If there is a potential to "kill, harm or harass" a federally listed species or disturb its habitat, formal consultations and an incidental take permit will be required. This permit process can take over one year to complete; therefore, it is recommended the permit process begin early in the project design phase.

### **ES.6.2 WATERS OF THE US**

The potential NFS 06 Road Alignment will be drilled under the Truckee River, thereby likely avoiding Corps jurisdiction (and impacts to aquatic species); however, the project will cross Deer Creek and may cross wetlands or other jurisdictional waters of the US. Additionally, the potential Highway 89 Alignment will cross multiple tributaries to the Truckee River and possibly unidentified wetlands. Wetland delineations should be the first steps once the pipeline route is defined. If impacts to wetlands/waters of the US can be reduced to less than 0.5 acres, the SVPSD may qualify for coverage under a Nationwide Permit #12 for Utility lines. If the impact area is larger than 0.5 acres, the District will need to apply for an individual permit. The Army Corps of Engineers will require avoidance, mitigation, or compensation for any proposed activities that would entail fill in jurisdictional waters of the US

### **ES.6.3 LAND USE**

Based on ECO:LOGIC's literature reviews of the relevant planning documents and sources, there appear to be no land use constraints associated with the development of the National Forest 06 Road Alignment or the Highway 89 Alignment of the SVPSD water supply pipeline.

### **ES.6.4 CULTURAL RESOURCES**

Based on ECO:LOGIC's literature review, no specific cultural constraints could be identified along either potential alignment. However, the potential for the presence of cultural resources in the vicinity should be considered low to moderate, and a full records search and field survey by a qualified Archeologist or Paleontologist should be completed prior to any construction. If any new cultural resources are uncovered during construction, avoidance, mitigation, or compensatory measures will need to be employed as necessary.

### **ES.6.5 ADDITIONAL ENVIRONMENTAL CONSIDERATIONS**

In general, both projects would require Best Management Practices (BMPs) and possible mitigation measures to minimize potential environmental impacts to less than significant with regards to CEQA. Many of these standard BMPs can be included in the project description as environmental commitments the District is willing to make upfront in the process. Potential

impacts on air quality, water quality, hydrology, geology, traffic, recreation, and climate change will need to be addressed in the CEQA/NEPA document for either alignment.

### **ES.6.6 ENVIRONMENTAL APPROVALS AND PERMITTING**

The project would require compliance with several environmental laws and acquisition of several environmental permits and approvals. Crossing federal lands as well as jurisdictional tributaries to the Truckee River will trigger compliance with all federal and state environmental regulations.

The potential project will likely trigger the following permit/environmental compliance requirements:

- California Environmental Quality Act Compliance
- National Environmental Quality Act Compliance (NEPA- Forest Service Route)
- Clean Water Act Sections 401 and 404 Permits/Certifications
- Lahontan Regional Board Discharge Prohibition Exception under Resolution No. 6-93-08
- US Fish and Wildlife Service Endangered Species Act Section 7 consultations
- State Historic Preservation Office NHPA Section 106 consultations
- California Fish and Game Code 1602 Permits
- Placer County Grading Permit
- Placer County Tree Permit

The timeline for these permits ranges from several weeks to over one year. Several of these permits, such as the Clean Water Act Section 404 permit can be streamlined by designing the project to avoid (to the extent feasible) and minimize impacts to jurisdictional waters of the United States. Such measures would enable the District to apply for coverage under existing nationwide permits rather than go through the longer process of obtaining an individual permit. The Table ES-1 below summarizes the necessary permits and required timeline for each.

**Table ES-1  
Permit Timeline**

<b>Permit Name</b>	<b>Trigger</b>	<b>Estimated Timeline*</b>
CEQA Compliance	Discretionary Action by a SVPSD	1 year to 18 months
NEPA Compliance	Special Use Permit from National Forest Service	12-16 months
Clean Water Act 401 Certification (and Board - Resolution No. 6-93-08)	Surface Waters of the US	4-5 months
Wetland Delineation Verification	Waters of US (ordinary high water mark) and wetlands	6-8 months
Clean Water Act 404 Permit	Waters of US wetlands/vernal pools (ordinary high water mark)	1 year to 18 months
USFWS ESA Section 7 Consultations	Federally listed species of potential habitat for federally listed	7-8 months (assuming formal consultations)
SHPO NHPA Section 106 Consultations	Cultural Resources	2-3 months
CFG Code 1602 Permits	Impacts to Bed/Bank and floodplain	4-5 months
Placer County Tree Permit**	Removal of trees 6 " dbh or greater	1-2 months
Encroachment Permits (Caltrans and local agency)	Placement of pipeline within Caltrans or County Easements	2-6 months
Grading Permit and SWPP	County grading permit and State SWPPP for grading areas > 1 acre	2-6 months
* Estimated Timeline includes APPROXIMATIONS for ECO:LOGIC's time to prepare an application and the agency's review period.		
** Public Utilities may be exempt.		

## **ES.7 PLANNING LEVEL FACILITIES COST ESTIMATE**

There are four different facilities that are needed to construct the Supplemental Water Supply Project. Each of these facilities are similar regardless of alignment alternative. They include the following:

1. Well Construction (2,000 gpm capacity at buildout)
2. Transmission Line
3. Booster Pump Station
4. Terminal Tanks

ECO:LOGIC developed a detailed planning level cost estimate for each one of these facilities for each of the two proposed alignments (Figure ES-1). The costs for the well and terminal water

storage tank are similar for each option. Costs associated with the transmission line construction for each alternative are different due to the fact the pipelines follow two completely different routes from the Martis Valley to Squaw Valley. The costs for the booster pump station are different based on the required pumping head for the two alternatives, with the USFS alternative requiring much higher horsepower pumps.

In addition to the four facilities described above, line items have also been added for the following:

- EIR preparation, environmental permitting, and preliminary planning and design
- Administrative and legal costs associated with land acquisition, easements, etc.
- Design engineering and construction management
- Construction contingency

The table below provides a summary planning level cost estimate for the Highway 89 and USFS corridors.

Table ES 2  
**Summary of the Supplemental Water Project Cost Estimate**

Highway 89 Corridor		
	Item	
1	Well Construction	\$1,588,000
2	20 Inch Transmission Main	\$14,483,000
3	Booster Pump Station	\$1,288,000
4	Terminal Tank	\$1,812,000
5	EIR/Permitting/Preliminary Design	\$1,000,000
6	Administrative/Legal (10%)	\$1,917,000
7	Engineering Design (8%)	\$1,533,600
8	Construction Management (10%)	\$1,917,000
9	Construction Contingency (10%)	\$1,917,000
	<b>Total</b>	<b>\$27,500,000</b>

USFS 06 Road Corridor		
	Item	
1	Well Construction	\$1,588,000
2	20 Inch Transmission Main	\$18,639,000
3	Booster Pump Station	\$1,378,000
4	Terminal Tank	\$1,812,000
5	EIR/Permitting/Preliminary Design	\$1,000,000
6	Administrative/Legal (10%)	\$2,341,700
7	Engineering Design (8%)	\$1,873,360
8	Construction Management (10%)	\$2,341,700
9	Construction Contingency (10%)	\$2,341,700
	<b>Total</b>	<b>\$33,000,000</b>

## ES.8 CONCLUSIONS

The purpose of the District's Supplemental Water Supply and Enhanced Utilities Feasibility study was to determine potential project "fatal flaws" on a component by component basis. The components that ultimately make this project feasible are available supply to meet demand, construction of high pressure water mains in sensitive areas, and the ability to permit the project with the numerous agencies that will become vital players in the design and construction process.

Based on this, the technical feasibility of the project is apparent based on the following:

### ES.8.1 WATER DEMAND AND SUPPLY

- The supplemental water Supply needs for the District as presented in this study are 1,210 AFA for an annual average demand and 1,951 gpm for a MDD.
- Based on numerous independent studies completed on the MVGB, the available annual yield of the aquifer is between 24,000-34,000 AFA.
- The current buildout water demand estimate for the other MVGB area water purveyors, including individual well owners, is approximately 21,399 AFA.
- Based on this there may be as much as 2,600-12,600 AFA of excess capacity in the MVGB.
- The study has concluded that there are areas within the aquifer, and adjacent to the PCWA and TDPUD water systems, that can potentially produce the required ultimate water supply needed of 2,000 gpm.
- Numerous meetings with PCWA TDPUD, and the NCSO have shown that these water purveyors have the potential infrastructure and desire to work with the District on this water supply project.

- Based on a review of the TROA, these well locations will meet the criteria required to drill a new well within the MVGB.
- Based on Truckee River basin water demand estimates, the District's supplemental water supply need should not cause the basin water demands to exceed the 32,000 AFA allocation limit.
- Under California groundwater law, transfers are allowed from MVGB to Squaw Valley.

### **ES.8.2 TRANSMISSION MAIN ALTERNATIVES**

- The two transmission main corridors were studied based on right of way availability, permitting, and constructability.
- ECO:LOGIC and the District met with the Caltrans permitting staff and it was concluded that the Highway 89 corridor meets the above mentioned criteria.
- For the NFS 06 Road corridor, ECO:LOGIC and the District met the USFS District Ranger and it was concluded that this alignment also meets the feasibility requirements.
- The environmental constraints analysis showed that both alternative transmission main corridors have no major environmental or permitting related "fatal flaws".
- ECO:LOGIC also met with Suddenlink Communications and Southwest Gas to discuss the potential to participate with the District in a joint utility project. Both parties expressed interest in the project, and as this project goes to preliminary planning, permitting, and design, would like to be contacted to discuss a partnership.
- ECO:LOGIC also contacted NV Energy (formerly Sierra Pacific Power Company), but they did not offer any firm opinion of showing interest in a joint utility project.