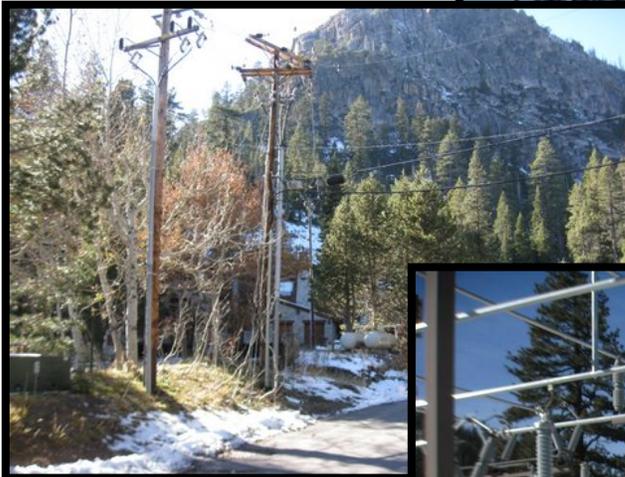




CapitolUtility
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SQUAW VALLEY

TECHNICAL DRY UTILITIES STUDY



March 2014

Internal Report – Not for Outside Distribution

Table of Contents

SECTION 1 – OVERVIEW	3
Background Information	3
Project Phasing	3
SECTION 2 – ELECTRIC SERVICE	4
Liberty Utilities.....	4
Existing Facilities.....	4
System Design	5
Phase 1 Improvements	5
Phase 2 Improvements	6
SECTION 3 – PROPANE SERVICE	7
Existing Facilities.....	7
Proposed System Design	8
Phase 1 Improvements	13
Phase 2 Improvements	14
SECTION 4 – TELEPHONE/ BROADBAND	15
AT&T.....	15
Existing Facilities -- Offsite	15
Existing Facilities -- Onsite.....	15
System Design	16
Phase 1 Improvements	16
Phase 2 Improvements	16
SECTION 5 – CABLE TELEVISION/ BROADBAND	17
Suddenlink Communications.....	17
Existing Facilities.....	17
System Design	17
Phase 1 Improvements	17
Phase 2 Improvements	18
SECTION 6 – ENVIRONMENTAL	19
Environmental Documents	19
SECTION 7 – SUMMARY & CONCLUSIONS	20
Electric	20
Propane Load.....	20
Construction Scheduling & Phasing.....	20

Appendix

Appendix A	Existing Dry Utility Exhibit
Appendix B	Existing Utility Conflict Exhibit
Appendix C	Conceptual Electric Plan
Appendix D	Conceptual Propane Plan
Appendix E	Conceptual Private Telecom Plan
Appendix F	Electric Demand Study
Appendix G	Propane Planning Study
Appendix G-1	Propane Loads Removed
Appendix H-1	Propane Siting Options
Appendix H-2	Proposed Propane Tank / LNG Trailer Layout
Appendix H-3	Proposed Propane Tank / LNG Trailer Layout #2
Appendix H-4	Conceptual Plan – Propane / LNG Sites
Appendix H-5	Consumption of Propane Schedule
Appendix I	Matrix of Utility Improvements by Phase

SECTION 1 – OVERVIEW

Background Information

Squaw Valley Development Company is redeveloping Squaw Valley in Placer County, California. Squaw Valley is an all season resort (The Resort) and the proposed new improvements will accommodate year round activities, with emphasis on winter and summer activities.

At buildout, the project will consist of approximately 750 new residential units and 288,372 sq. ft. of nonresidential - 92,500 sq. ft. of amenities (primarily the mountain adventure camp), 58,740 sq. ft. of retail and restaurants, 72,640 sq. ft. of ski services, an employee housing facility and 64,492 sq. ft. of meeting space, hotel common areas and transit facilities. The 21 unit employee housing facility will be built offsite on Lot 4 roughly 1.5 miles east of the resort on the north side of Squaw Valley Road, opposite the SVPSD offices and fire station.

New extensions of propane, electric and private telephone/ broadband will be required to serve the new facilities. Electric and telephone will be extended in joint trenches wherever possible. Privately owned resort facilities (i.e., private telecom) are not permitted in the joint trench. Propane will require its own single occupant trench.

Utility trenches will be placed in franchise and on private property in public utility easements (PUEs). To accommodate the joint trench, vaults, transformers, switches and other pedestals, PUEs will be created as needed within the private roads and properties. All new distribution facilities will be underground, with the exception of transformers, switches, and other necessary pedestals and pad-mounted equipment.

Liberty Utilities, Suddenlink, AT&T and AmeriGas, all provide service to the area, though Suddenlink does not currently serve The Resort. The first three entities received preliminary land use plans and other pertinent information for their long range planning. AmeriGas, for reasons discussed below, has not been provided information.

Project Phasing

The Squaw Valley Plan Area is designed for two construction phases: Phase 1 consists of six condo hotels, a mountain adventure center, a new mountain maintenance facility, ski services, 31 units of fractional cabins, the first phase of employee housing and transit facilities; Phase 2 consists of five additional condo hotels and the second phase of employee housing. Initial plans call for construction to begin in the southeast quadrant and northwest quadrants concurrently, along with the offsite Lot 4 employee housing facility, though phases may be developed in any sequence provided: 1) Public safety, health and welfare issues are addressed, and 2) Placer County approves.

SECTION 2 – ELECTRIC SERVICE

Liberty Utilities

In accordance with its tariffs, rules and regulations, Liberty Utilities (Liberty) will supply electric service to the Squaw Valley Plan Area. Peak electric demand for the new improvements at full build out is estimated at 4.5 megavolt amperes (MVA). Load being removed through demolition of existing facilities is estimated at .3 MVA, which gives a net peak added demand of 4.3 MVA (Squaw Valley Electric Demand Study, Appendix F). Projected net new demand by phase is as follows: Phase 1 – 2.7 MVA; Phase 2 – 1.6 MVA.

Existing Facilities

Substation & Transmission: Liberty has a 50 MVA substation (Squaw Valley Substation, Figure 1) located just north of the northwest corner of Highway 89 and Squaw Valley Road. The substation has two 120 to 14.4 kilovolt (kV) 25 MVA banks, a 60 to 120 kV bank, and is fed from both Tahoe City and Truckee. The Tahoe City feed is a single circuit 60 kV transmission line (Figure 2, 60 kV upper level, with distribution underbuild) built to 120 kV standards that extends generally west then north from Tahoe City. The transmission system loops back through Truckee with a 120 kV line and a 60 kV line.



Figure 1, Squaw Valley Substation



Figure 2, 60 kV Transmission Line

Distribution: Four main line circuits extend out from the Squaw Valley substation. One serves the Squaw Valley basin, one Alpine Meadows and two the Squaw Valley resort. The two main line circuits (14.4 kV three phase) extend westerly from the substation along Squaw Valley Road. One is an underground 600 amp circuit, the other an aerial 400 amp circuit (Figure 3), upper level).

Existing overhead and underground electric facilities serve the village from these two circuits (Existing Dry Utility Exhibits,

Appendices A & B). The overhead lines northwest of the new village (roughly 800', serving the mountain house fourplex, employee housing, hostel, etc.) will be converted to underground, or removed as idle in conjunction with the new improvements. Portions of the



Figure 3, Aerial 200 Amp Circuit

underground lines that serve existing improvements (new and older villages) will also require relocation to allow for the new construction.

Employee Housing: A 14.4 kV overhead line runs along the south boundary of the employee housing site on Squaw Valley Road. An underground line also follows portions of this same alignment.

System Design

Liberty's underground distribution systems can be divided into two parts: 1) the large capacity main line backbone feeder circuits, and 2) the smaller capacity local circuits.

Liberty designs its main line circuits (typically 600 amp, 14.4 kV, three phase) for ~15 MWs at 100% loading, depending on conductor size (assumes 1000 MCM conductor) and other factors. Circuit design determines actual loading, which can be from 50% (7.5 MW's) to 80% (12 MW's) of line capacity. This architecture provides for "reliable capacity" backup available on adjoining circuits.

Local (distribution) circuits (200 amp, 14.4 kV) are designed for ~5 MW at 100% loading, depending on conductor size (assumes 1/0 AL) and other factors. As with main lines, distribution circuit design determines actual loading, which again can range from 50% to 80% of actual capacity. Distribution circuits may either be looped or radial, and single phase or three phase, depending on the type and size of load (residential or commercial) and number of customers on each circuit. Transformers (Figure 4) will be located in residential neighborhoods and at commercial sites to serve one or several users.



Figure 4, Three Phase Transformer

Liberty typically serves one to two commercial customers on a radial circuit and between two to five commercial customers on looped circuits. Actual design depends on load, not number of customers. For single phase residential circuits, anticipate multiple residences per transformer. Loading, circuit design and other factors will determine the final layouts.

Phase 1 Improvements

Offsite Improvements: The utility's circuits can't support the new improvements, so reinforcement will be needed. A new main line 1000 KCM circuit will be designed and installed in the empty underground conduit structure (1-6" conduit with vaults) that runs from the substation to the resort parking lot (Conceptual Electric Plan, Appendix C & Matrix of Utility Improvements by Phase, Appendix I).

This new main line extension (with substation upgrades) is required for the Phase 1 improvements, but when installed will have sufficient capacity for all proposed improvements and phases.

No open cuts (excavations for trench, conduit, boxes and/or manholes) or additional poles are anticipated to reinforce between the substation and the resort parking lot. Liberty confirms that it has sufficient transformer capacity at the substation (two 25 MVA banks) to serve the expansion, though new facilities and upgrades (a vacuum breaker with associated relays, two to three switches, et al) will be required within the boundaries of the substation site. Transmission facility upgrades may be required (but are not anticipated) to accommodate the new improvements.

Employee Housing: Service will be extended underground from the existing 14.4 kV electric facilities that run along the north side of Squaw Valley Road.

Onsite Improvements: New main line and local circuits will tie to pad mounted switches (Figure 5) and extend underground for the new improvements.

Main line Circuits (600 Amp): A conduit system for backbone circuits consisting of 4-4" conduits will be installed per main line circuit, and likely either 612 vaults (6' x 12') for straight runs or 814 vaults (8' x 14') where needed for junctions or taps. Vaults will be full traffic lid manholes, spaced as needed.

Local Circuits (200 Amp): Conduit systems for local circuits will consist of 2-4" conduits per circuit between switches and 2-4" conduits stubbed to transformers. Vaults will typically be 612s or smaller.



Figure 5, Pad Mounted Switch

Phase 2 Improvements

Concurrent with the new construction, additional 600 and 200 amp circuits with associated equipment will extend underground to the new improvements.

SECTION 3 – PROPANE SERVICE

Existing Facilities

The Resort receives propane from AmeriGas, the sole source provider for the area. Two independent propane systems consisting of separate tanks, bulkheads, vaporizers and plastic piping are affected by the proposed new improvements.



Figure 6, Squaw Valley Tank

Existing Squaw Valley System:

The Squaw Valley system is supplied by an aboveground 21,000 gallon tank (Figure 6) located just south of the Red Dog Maintenance Building. The direct fire vaporizers convert liquid propane to gas and are located approximately 300 feet west of the tank. The bulkhead or filling station is north of and down the hill in front of the maintenance building. The Squaw Valley System serves the older parts of the village such as the Red Wolf complex, the Olympic House, the Squaw Valley Lodge and the Doctor's office.



Figure 7, Village Vaporizers

The system consists of three-inch and two-inch plastic/steel lines and operates at a Normal Operating Pressure (NOP) of 17 pounds per square inch gauge (psig). A three-inch line runs approximately 1.6 miles west up the hill and supplies propane to the upper mountain (High Camp).



Figure 8, Village Bulkhead

Existing "The Village at Squaw" System:

The Village at Squaw (The Village) system is supplied by an underground 30,000 gallon tank located to the south and up the hill from the Snow Ventures chairlift and serves The Village. A series of four direct fire vaporizers (Figure 7) are located in a shed near the tank just inside the tree line. The bulkhead (Figure 8) operates from the parking lot north of the Far East High Speed chair.

A four inch plastic main extends from The Village distribution point north and west to two sheltered meter locations (Figure 9) on the south side of the village (Buildings 3 and 4). Turbine meters with

dual regulators monitor and measure propane flows. Commercial establishments -- restaurants, stores, coffee shop, etc. -- have their own separate diaphragm meters and are billed individually.

Primary use of the propane is to feed the boilers that supply space and water heating to the residential and commercial areas of The Village. Cooking, fire pits and fireplaces account for the remaining propane usage.

The distribution system (from the vaporizers to the turbine meters) operates at an NOP of 18 to 20 psig. Once the gas passes through the meters and regulators, it is regulated down to 1.5 psig and distributed throughout The Village.

The Existing Dry Utility Exhibits (Appendices A & B) show the existing layouts of the two propane systems.



Figure 9, Propane Meters

Proposed System Design

Two independent propane systems will be designed, engineered and constructed to serve the area. The Resort will own and operate one and supply its existing and proposed resort facilities; the other will be owned and operated independently by a 3rd party provider (currently AmeriGas) and serve the 3rd party users (The Village at Squaw, Squaw Valley Lodge, Red Wolf, et al) in the resort area.

The Resort's proposed propane distribution system will operate at pressures under a Maximum Allowable Operating Pressure (MAOP) of 60 psig. Preliminary sizing designs show the proposed system to consist of six-inch, four-inch and two-inch plastic mains with tracer locating wire. Services will extend from the mains and be sized according to loads served. Each building will have its own meter or meter manifold depending on the number of entities requiring gas. The independent 3rd party user system will likely be of similar design.

The eventual goal is to have the local natural gas provider, Southwest Gas (SWG), extend its natural gas system to the Olympic Valley. Therefore, The Resort's propane system will be designed to SWG Standards. Theoretically (this has to be negotiated), once SWG connects to The Resort's distribution system, ownership and maintenance will be turned over to SWG. It is imperative that proper as-built records of the system be completed and maintained to the utility's standards to facilitate this transfer of ownership.

Since propane requires its own single occupant trench, the two independent distribution systems (resort and 3rd party), where practical, may be placed in parallel in a

single dedicated trench. However, if SWG ultimately owning the resort’s system is a real possibility, separate trenches will need to be maintained.

Load Demand:

With the addition of over 1.5 million square feet of amenities ranging from a water park, restaurants and retail shops to several condo hotels, propane usage will increase substantially. The assumptions, calculations and methodology used to prepare the Propane Planning Study for Squaw Valley are included in Appendix G and are based on revised project metrics provided by The Resort (SV Development Summary by Phase New Plan 1-29-14). Peak daily diversified demand for the new improvements at full buildout is estimated to be 382,100 cubic feet (382 MCF) of propane per day (Appendix G, pg. 6). The total annual consumption at buildout (existing plus new) is estimated at 3,901,272 gallons (Appendix G, pg. 8).

Phase	March MCF/Day	Gal of Propane/Year	Gallons of Propane Used/Winter Day	Truck Deliveries/Winter Day	Truck Deliveries/Summer Day
Phase 1	305	2,603,128	8,519	0.92	0.66
Phase 2	109	838,315	3,048	0.33	0.19
Existing Resort	78	459,829	2,179	0.23	0.07
3rd Party	126	881,846	3,507	0.38	0.17
Load Removed	(55)	(367,500)	(1,549)	(0.17)	(0.12)
Total	562	4,415,618	15,704	1.69	0.98
*30K Tank - maximum capacity is 25,980 Gallons					
**Trucks deliver approximately 9300 gallons propane					

Supplying Propane:

Based on a review of billing records and propane prices, and allowing for transport mark-ups, it’s clear The Resort has paid a substantial premium over wholesale. Research shows that significant savings per gallon are available by purchasing direct through a broker. With current and anticipated large propane consumption going forward, this report recommends that The Resort establish a relationship with and purchase from an independent broker, and no longer rely on its present supplier.

It’s anticipated that propane will be supplied from Sacramento via 40-foot transport truck and trailers. The major concern is a severe weather incident temporarily closing Interstate 80 and preventing scheduled deliveries. Two options were considered to avoid running out of propane: 1) Deliveries from Reno -- assumes Interstate 80 and Highway 89 remain open, not a realistic assumption, and 2) Create enough onsite storage capacity to endure an extended weather event. The only realistic option is significant onsite storage. GTS’s preliminary study indicates an onsite capacity of one week sufficient to maintain service. That requires four 30,000 gallon tanks at buildout.

Tank Farm Requirements:

Two or more storage tanks installed adjacent to one another are commonly referred to as a tank farm. The farms (Appendix H-2) generally encompass from 0.5 to over an acre, depending on the number and size of tanks, number and size of vaporizers, bulkheads and back-up generators deployed. The sites must provide access/egress large enough for one or more 40-foot tankers (18 wheel, 9,300 gallons) to maneuver in and turn around.

The team looked at 6 potential sites (Appendix H-1) and, for a variety of reasons (aesthetics, visibility, proximity to housing, access and maneuverability for trucks, amount of grading required, et al), four were rejected. A siting study including a safety analysis should be performed prior to the final tank farm site engineering and design.

Tank Farms:

Depending on the number of tanks deployed at a location, one to two tank farms are envisioned to maintain service in an extreme weather event -- one at Lot 19 and the other on the west end of Lot 29 (Appendix H-4). Five 30,000 gallon propane tanks will be required for the existing loads plus new improvements at full buildout – four for the resort and one (3rd party vendor to confirm) for the 3rd party users.

At each location, The Resort's tanks will be placed in series and be filled via a single bulkhead. Vaporizers are required at each site. The 3rd party user's tanks will have their own bulkhead and vaporizers. When feasible, tanks should be buried to prevent third party damage and to provide consistency for natural vaporization.

Separation requirements and required safety devices vary depending on the aggregate tank capacity. Each site will require a backup generator, with the type of generator (single or three phase) determined based on the type of vaporizers utilized. With the tanks buried and level gauges not easily visible to transport drivers, The Resort anticipates installing tank level radar monitoring gauges connected to an internal SCADA system to accurately track propane levels and assure on-time deliveries.

As an additional level of protection in weather events, The Resort may consider installing a second bulkhead in its tank farms. That would allow two trucks to unload propane simultaneously for those rare instances when a major storm is approaching and access to the valley uncertain for future deliveries.

Safety Setbacks:

The following safety setbacks should be considered general guidelines for siting tank farm facilities. Additional county, state and federal regulations may apply.

Safety Setbacks & Spacing -- Propane Tank Farm		
Facility	Facility	Minimum Safety Setback
30K Propane Tank*	30K Propane Tank	5'
30K Propane Tank*	Vaporizer Station	50'
30K Propane Tank*	Bulkhead	25'
30K Propane Tank*	Backup Generator	25'
30K Propane Tank*	Any Structure or Property Line	50'
30K Propane Tank**	Water-Bath Vaporizer Station	10'

* More than 1 tank

** Single Tank (other safety requirements will apply)

Vaporizers:

Two types of vaporizer systems are under consideration, direct fired and water-bath. Both existing systems utilize the older style direct fired vaporizers, which are less desirable for a number of reasons; requires an ignition source, more maintenance issues, et al. GTS recommends switching to water bath vaporizers as they require less maintenance, have no ignition source and are more efficient. Since water bath vaporizers use 240V three phase power a three phase generator is required for backup in case power is lost.

Existing Propane Tanks:

One option being considered is leaving in place and screening the two existing tanks & vaporizers. Challenges to this alternative are:

- 1) Access to the tanks for maintenance and eventual replacement, if needed.
- 2) The bulkheads will require relocation to a site accessible by the 40 foot (9,300 gallon) tanker trucks. Bulkheads are normally placed close to the tanks so drivers can visually monitor tank levels, but the proposed distances from bulkheads to tanks make this impractical. We find no federal or state regulations for maximum separation, but the distance contemplated would require safety equipment and procedures as well as additional personnel during transfer operations.
- 3) AmeriGas is the current supplier and owns and operates the underground 30,000 gallon tank. Any relocation of that bulkhead to a new location will have to be negotiated with and approved by AmeriGas. In a 2012 early discussion AmeriGas referenced a company policy which limits separation distances from bulkhead to tank due to liability issues associated with overfilling the tanks. (That distance was never disclosed). The indication was that the bulkhead for The Village tank is already near that maximum.
- 4) Ownership, maintenance and operation control of the 20,000 gallon tank and vaporizer system is unclear. Options may exist for keeping it in place, but it is the smaller and older of the two tanks. It is unaesthetic and the less practical of the two to refurbish.

- 5) Specialized engineering equipment would be required to monitor tank balancing and filling. Additional line pumps would also likely be required depending on separation distances and elevation deviations between the tanks and transfer point. An additional backup generator would be needed for the line pumps for filling tanks during power outages.
- 6) By placing the bulkheads a significant distance from the tanks, The Resort may be limiting its options to work with potential vendors/brokers who are unwilling to accept the liability associated with monitoring tank fuel levels remotely.
- 7) The County - or other approving agencies - may have additional requirements.

A separate and detailed study would be required to seriously analyze the practicality of leaving in place and screening the tanks and vaporizers, as a number of engineering, ownership and liability-related issues would have to be overcome. Our preliminary review suggests The Resort could conceivably locate the bulkheads in a preferred location compatible with the current site plan. But based on the comments above, we strongly recommend against pursuing it.

Opportunity to Share Propane Tanks with Neighbors:

An option being discussed is connecting adjacent 3rd party users to The Resort's new propane system. Due to a variety of federal regulations, propane cannot be sold directly by The Resort to its neighbors without it becoming a regulated utility company. However, if the tanks were leased back to the supplier, the supplier could sell propane directly to 3rd party users and to The Resort, using the tank farm as its interim supply. In the summer months smaller bobtail tank trucks could be filled from the tank farms, servicing other customers and reducing round trips to Sacramento or Reno for refills. AmeriGas (the current vendor to 3rd parties) and The Resort may or may not be interested in this type of arrangement. The idea needs further study if there is interest in pursuing it.

Liquefied Natural Gas (LNG): An LNG system is being considered as a supplemental fuel to The Resort's propane system as it offers significant cost savings (LNG costs on average 15% less than propane). However, LNG's equivalent usable energy content (BTU) is only about 40% that of propane's -- 1,000 BTUs per cubic foot versus 2,500. While not deemed an issue in the summer months when usages are low, it would be an impractical primary fuel source in the cold winter months when propane deliveries can be as high as 12 trucks per week (Appendix H-5). An LNG system would require roughly 19 weekly deliveries per week.

LNG tanks are trailer mounted and would be placed adjacent to the buried propane tanks (Appendix H-3). The entire LNG trailer assembly would be replaced regularly rather than refilled. As noted above, propane has a higher BTU content per CF than LNG, so an air mixing station would be required to reduce the BTU content of the propane (when utilized) to the same BTU content as natural gas. That allows the fuels

to be utilized seamlessly and interchangeably. Orifices on all appliances would be set for natural gas.

In addition to the safety setbacks discussed above for propane tank farms, the following additional setbacks will apply if an LNG system is added to the propane tank farm. Again, additional county, state and federal regulations may be applicable.

Safety Setbacks & Spacing -- Combination Propane & LNG Tank Farm		
Facility	Facility	Minimum Safety Setback
LNG Trailer w/Tank	30K Propane Tank	20'
LNG Trailer w/Tank	LNG Trailer w/Tank	5'
Air Mixing Station	Vaporizer Station	10'
Air Mixing Station	30K Propane Tank	25'
Air Mixing Station	Bulkhead	25'
Vaporizer Station	Bulkhead	15'

Phase 1 Improvements

Offsite Improvements: No offsite propane improvements are anticipated for either phase with the exception of a new dedicated tank to serve Lot 4 employee housing.

Onsite Improvements: The Resort’s 1st phase will require three new underground 30,000 gallon tanks -- w/bulkheads, vaporizers and a backup generator -- and a distribution system. As noted previously, locations for the new equipment have been narrowed - but not finalized - to the two promising locations (Lots 19 & 29) shown on The Conceptual Propane Plan, Appendices D and H-4.

Concurrent with the new improvements, dedicated smaller tanks serving existing outbuildings on the demo schedule will be removed as construction progresses.

As noted earlier, the 3rd party users take propane service from the Squaw Valley tank (20,000 gallon, above ground) and The Village tank (30,000 gallon, underground). The Squaw Valley tank currently serves both resort and 3rd party users, and it, the associated vaporizers and the bulkhead will be relocated or eliminated. If removed prior to a new system being installed, a temporary system will be required to maintain service to the 3rd party users.

The Village tank (serves The Village at Squaw) and its associated vaporizers, bulkheads and most of the existing village distribution system will be relocated to make way for

the new improvements. (If relocated before a new system is in place, a temporary system will be required to maintain service). The relocated 3rd party system (tanks, vaporizers, etc.) will be placed in either Lot 19 or Lot 29 based on the outcome of the siting studies.

Phase 2 Improvements

Together with the development of Phase 2, an additional underground 30,000 gallon tank will be added to one of the tank farms. An underground distribution system (looped with the Phase 1 system) will extend through Phase 2 (Conceptual Propane Plan, Appendix D).

SECTION 4 – TELEPHONE/ BROADBAND

AT&T

AT&T is the incumbent local exchange carrier (ILEC) and will be the primary provider of telecom service. It provides service upon request and in accordance with the tariffs, rules and regulations on file with the CPUC.

Existing Facilities -- Offsite

The Resort receives AT&T service from the utility's Tahoe City central office (CO). Fiber extends southwest through Tahoe City underground then west to about ¼ mile outside the city, where it rises and runs aerial along Highway 89. The aerial line continues northwest until roughly ¼ mile south of the entrance to Olympic Valley, where it dips underground and runs under Hwy 89 to an AT&T hut (Figure 10) near Squaw Valley Road and Highway 89. From that point the fiber continues west up Squaw Valley Road underground on the north side to a point between Far East Road and Village East Road where AT&T has a Controlled Environment Cabinet (Figure 11).



Figure 10, AT&T Hut

Should AT&T choose to upgrade its offsite system or, should The Resort ever request increased bandwidth, the existing fiber cable (runs to the CO in Tahoe City) is probably undersized. To expand service AT&T would most likely reinforce to support the entire Olympic Valley --and perhaps Alpine Meadows since it's on the same cable route. AT&T would pull a more robust fiber cable to Squaw Valley from the CO in Tahoe City, through existing underground infrastructure and attached to existing poles. No system upgrades are being proposed by AT&T, and The Resort does not anticipate a request for increased bandwidth. It is only being discussed as a possible future and separate AT&T project.



Figure 11, Controlled Environment Cabinet

Employee Housing: Underground AT&T lines run along the south boundary of the employee housing site on Squaw Valley Road.

Existing Facilities -- Onsite

The AT&T system is a fiber-copper hybrid. Fiber and copper cables run from the CEV to two Minimum Points of Entry (MPOEs) that serve the resort proper, one located in

the tram building; the other underneath Building 3 of The Village.

Existing telephone facility locations are shown in the Existing Dry Utility Exhibit and Existing Utility Conflict Exhibit, Appendices A & B. Portions of the underground facilities will require relocation to allow the new improvements to go forward.

System Design

AT&T offers a “triple play” of services (dial tone, video and internet access). It installs a fiber/copper hybrid system in substructure consisting of 4 inch conduits in which it will pull fiber and copper.

Phase 1 Improvements

Offsite Improvements: No offsite telephone improvements are anticipated for either phase with the exception of employee housing, where service will be extended underground from the buried AT&T telecom facilities that run along the north side of Squaw Valley Road adjacent to the site.

Onsite Improvements: Squaw Valley maintains a private phone and broadband system that extends throughout the resort from its MPOE location in the Tram building. This system will be upgraded as necessary to accommodate the new improvements. It will consist of backbone conduit (two to three 4” conduits, possibly with innerduct) with boxes or manholes in the roadways supporting copper and fiber systems, all tied back to the MPOEs. Conduits will be run to each building and cable pulled as required (Conceptual Private Telecom Plan, Appendix E and Matrix of Utility Improvements by Phase, Appendix I).

AT&T facilities will not be in the new improvements.

Phase 2 Improvements

The Resort’s private telecom system will be extended to serve Phase 2 of the new improvements.

SECTION 5 – CABLE TELEVISION/ BROADBAND

Suddenlink Communications

Suddenlink is the primary cable /broadband provider for the Olympic Valley.

Existing Facilities

The Olympic Valley receives Suddenlink service from the utility's Head End in Truckee. Fiber extends through the Martis Valley then over the hill and into the Tahoe basin, where it runs to Tahoe City. Fiber continues along Highway 89 from Tahoe City towards Alpine Meadows. Service to The Olympic Valley is via microwave from Alpine Meadows, which receives its service via microwave from Tahoe City, but that is changing. Microwave doesn't provide the bandwidth required by today's users, so Suddenlink is extending fiber along Highway 89 to Alpine Meadows and the Olympic Valley. This reinforcement project is completely independent of and unrelated to the proposed Squaw Valley improvements.

Suddenlink's main fiber trunk (24 count) runs west up Squaw Valley Road from Highway 89, south within the resort, then west again on Squaw Peak Road (Existing Dry Utility Exhibit and Existing Utility Conflict Exhibit, Appendices A & B).

Suddenlink provides cable television service to commercial users (PlumpJack, Squaw Valley Lodge, et al) and residences in the resort area, though The Resort itself does not take service from Suddenlink. It's unknown whether it will do so in the foreseeable future.

System Design

Suddenlink offers a "triple play" of services (dial tone, video and internet access). It installs a fiber/coax hybrid system in substructure consisting of 2-2 inch pipes in which it will pull fiber and coax. Fiber nodes, trunk amplifiers, splitters and other equipment are located in doghouses (Figure 12) or on aerial portions of the system.



Figure12, Suddenlink Trunk Amplifier

Phase 1 Improvements

Offsite Improvements: No offsite cable television improvements are anticipated for either phase with the exception of employee housing, where service will be extended underground from the overhead facilities that run along the north side of Squaw Valley Road adjacent to the site.

Onsite Improvements: As noted previously, The Resort maintains a private phone and broadband system - fed from AT&T - from its MPOE in the tram building and controls all video programming, telephone calls and internet within the resort. It will expand its private system to include all the new improvements (Conceptual Private Telecom Plan, Appendix E and Matrix of Utility Improvements by Phase, Appendix I).

Suddenlink facilities will not be in the new improvements.

Phase 2 Improvements

The Resort's private telecom system will be extended underground to serve Phase 2 of the new improvements.

SECTION 6 – ENVIRONMENTAL

Environmental Documents

We recommend the environmental documents include evaluation of the cumulative impacts of existing and proposed utility facilities, particularly:

- Any potential environmental issues associated with offsite bring-up of the electric distribution main line from the Squaw Valley Substation
- Any potential environmental issues associated with construction of the new tank farm or farms
- The utilities (electric, propane, telephone and cable television/broadband) which will be extended over/under Squaw Creek and to and through the resort and adjacent parcels

Evaluating and including these issues now will assure the project's compliance with CEQA, and reduce potential delays and added costs as the development proceeds.

SECTION 7 – SUMMARY & CONCLUSIONS

Electric, telephone, cable television and propane exist and are available at the site.

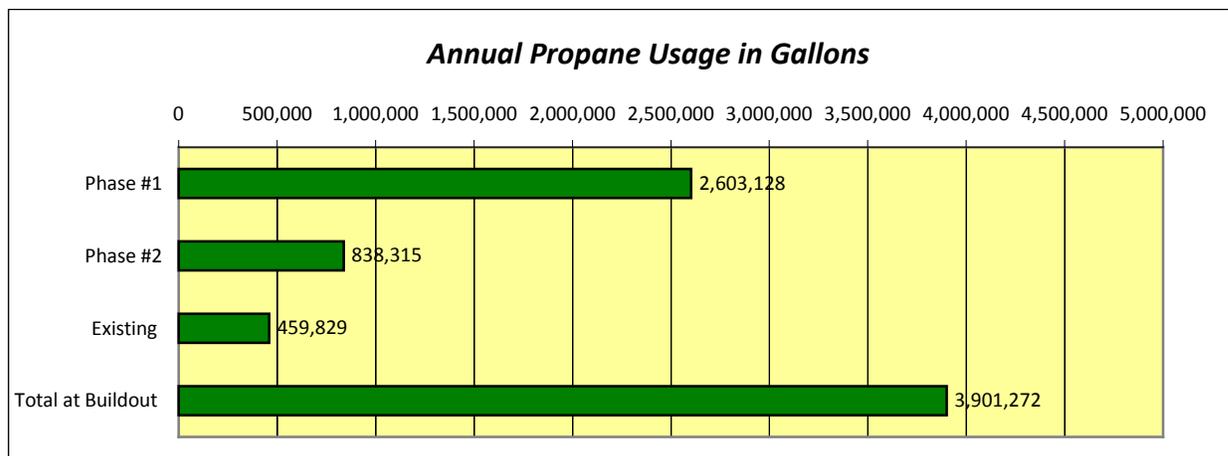
Electric

The one significant offsite bring-up is the Liberty Utilities electric main line circuit from the substation near Highway 89 to the resort. Fortunately an empty conduit system exists in Squaw Valley Road and will be utilized for the main extension. No significant excavations are anticipated along Squaw Valley Road until the resort parking lot.

The electric system must be constructed and energized prior to the completion of construction of Phase 1.

Propane Load

The new improvements add significantly to the demand for propane. Annual increase in propane usage at buildout is estimated at 3,456,000 gallons. With existing load the resort is estimated to use 3,901,272 gallons per year.



An extension of natural gas would be preferred over the installation of propane tank farms. A top priority needs to be opening discussions with Southwest Gas and negotiating an acceptable cost to extend gas from either Tahoe City or Truckee.

Construction Scheduling & Phasing

All major dry utility facilities within the footprint of the new Phase 1 improvements will need to be designed, constructed and energized/pressurized before the existing utility infrastructure can be removed. Relocation of existing utilities (electric, propane and telecom) within the new building footprint is a critical path item that needs to be completed before demo and construction of the new improvements can begin. This may require most of the first construction season to complete.