APPENDIX Q

DRY UTILITIES REPORT

Capitol Utility Specialists

CREEKVIEW

TECHNICAL DRY UTILITIES STUDY

November 2010

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SECTION 1 – OVERVIEW

Background Information

The Creekview Specific Plan (CSP) Area encompasses about 501 acres in unincorporated Placer County, proposed for annexation to the City of Roseville. It's located north of Blue Oaks Boulevard and west of Fiddyment Farms. At buildout, the project will have approximately 2098 low, medium and high density residential units, one elementary school, public facilities and over 170,000 square feet of commercial uses.

Natural gas, telephone, electric and cable television services will be extended in joint trenches along all the major roads, making these services available to all parcels in the Plan Area. Joint trenches will be placed in franchise or public utility easements (PUE's) parallel and adjacent to the road rights of way. To accommodate the joint trench, boxes, transformers, switches and other pedestals, PUE's along both sides of public roadways should be a minimum of 12.5' wide. Smaller PUE's (typically 10' wide) can be designated with medium density and other land uses with reduced yard setbacks. All new distribution facilities will be underground, with the exception of transformers, switches, telephone cabinets and other pedestals and pad-mounted equipment. Roseville Electric's 60kV transmission facilities will be overhead, unless the City and owners decide to place some sections underground.

Roseville Electric (RE), Pacific Gas & Electric Company (PG&E), AT&T, SureWest Broadband and Comcast Communications will serve the project. All five utilities received preliminary land use plans and other pertinent information for their long range planning.

Project Phasing

The Creekview Plan Area is designed to allow the backbone infrastructure to be phased. Initial plans call for the phasing to be generally from south to north from Blue Oaks Boulevard, though phases may be developed in any sequence provided 1) Public safety, health and welfare issues are addressed, and 2) The City of Roseville approves.

Parcel specific improvements will be determined with small lot tentative maps or subsequent entitlements.

Services to Urban Reserve (Harris Property)

The Creekview Specific Plan includes a 39.9-acre Urban Reserve parcel (Harris property) located in the southeast corner of the project area. The dry utilities planned for the overall Creekview project are generally located along the Blue Oaks Boulevard corridor and will be extended from the east to serve the CSP. Consequently, the dry utilities will be available in Blue Oaks Boulevard or immediately to the west of the Urban Reserve parcel, within the CSP. When dry utilities are extended to serve the Creekview project, there will be no constraints to providing dry utilities to the Urban Reserve parcel.

SECTION 2 – ELECTRIC SERVICE

ELECTRIC

In accordance with its ordinances and specifications, Roseville Electric will supply electric service to the Creekview Plan Area. Peak electric demand at buildout is estimated at approximately 11.5 megavolt amperes (MVA).

Table 1 – Estimated Electric Demand at Buildout (MVA)

CREEKVIEW LAND USE	UNITS Estimated	SQ FT Estimated	Average Demand (MVA)	Peak Demand (MVA)
Single Family Residential -- LDR	836		2.27	4.6
Single Family Residential -- MDR	655		1.61	3.3
Residential -- HDR	520		.90	1.8
Commercial/ Business Professional		190,000	0.46	1.2
Elementary School		45,500	0.07	0.3
Public Facilities(Pump Station, Well, Etc.)		4,000	0.12	0.3
	2011	239,500	5.4	11.5

RE Electric System Design

RE has no distribution facilities immediately adjacent to the site. The closest existing substation is the Westplan Substation (Figure 1, located on Blue Oaks Boulevard just west of Fiddyment Road in the West Roseville Specific Plan), which is equipped with two 46 MVA banks (92 MVA total) and fourteen mainline 12kV breakers/ feeder circuits. RE indicates that some excess capacity exists at Westplan. However, how long that excess capacity remains available will depend on the pace of construction of Fiddyment Farms and Westpark. RE confirms it can supply a minimum of 1000 units or representative load within Creekview with power before the new Creekview Substation is required. It will monitor circuit loading and start construction on the new substation, scheduling completion and energization ahead of demand.

Electric service will initially extend to Creekview along the north side of Blue Oaks Boulevard from the Westplan Substation. Conduit structure for two circuits (4-4" conduits per circuit) is stubbed to the northwest corner of Hayden Parkway and Blue Oaks Boulevard. Those conduits must be picked up and continued west in the joint trench. Cable for the two 12kV

Figure 1 - Roseville Electric's Westplan Substation

circuits will be extended west from the Westplan Substation (in the existing and proposed conduit structure) to the site. It should be noted that the conduits on the north side of Blue Oaks Boulevard do not connect with the substation, due to a gap where the future bridge is planned across Pleasant Grove Creek. If the bridge is not completed before Creekview requires service, a shoofly (temporary overhead line) across the creek will be needed. The shoofly will be at developer expense (up and down costs) and will be replaced with permanent underground circuits (through the new bridge) once it's completed.

Each 12kV mainline circuit has a design capacity of about 8 megawatts (mW's) depending on conductor size and other factors, though it's designed to carry only 5 or 6 mW's. This allows for future load growth and provides RE with a high degree of reliability in emergency conditions. If a circuit is lost, load from the damaged circuit is shed to other nearby circuits, thereby maintaining integrity of the overall distribution system and keeping as many customers in service as possible. Once repairs are made, load is shifted back to the original circuits so the additional capacity is available for future emergencies. And since mainline circuits from one substation interconnect with those of neighboring substations, the systems from one substation to a degree back up the systems from neighboring substations. It's a very reliable system.

Light wire 12kV circuits will be looped off mainline circuits via pad mounted fused switches, and will distribute electric service to commercial and residential neighborhoods in the development. Transformers will be located in residential neighborhoods and at commercial sites to serve individual users.

Street lighting will be provided along all public streets as part of the roadway frontage improvements. All electric and streetlight facilities will be designed and constructed to the City's current standards.

60 kV Transmission

The 60 kV transmission line (double circuit/looped) will be extended west to serve Creekview along the north side of Blue Oaks Boulevard. There are two routing options once the 60 kV line reaches the site: 1) Northwest and adjacent to the south side of Pleasant Grove Creek within open space parcel 54 along an all weather road (bike trail), or 2) West on Blue Oaks Boulevard to Westbrook Boulevard, then north along the east side of Westbrook Boulevard into the site. Both routes are under study, though the developer's preferred route is Option 1, along the south side of the open space parcel. RE will be responsible for construction costs of the lower priced option. Should the developer choose the more expensive route, the incremental additional cost will be a developer expense.
In any event, at the point where the two alternate routes converge, the line will extend north to the substation site where it dead ends. Long range plans anticipate the line being extended north through the future Amoruso project (Brookfield Specific Plan) then east where it will tie into existing RE 60 kV facilities and complete its loop.

There may be a constraint north of Blue Oaks Boulevard and south of the Harris property (C-90). The 60 kV line will require approximately 50 feet. It is recommended that 50 feet be planned north of Blue Oaks Boulevard to accommodate the 60 kV alignment. RE requires a 35' PUE along all other roadways or locations that may require a 60 kV line, and will consider a 25' easement along the conservation easement.

Substation

The Creekview Substation is planned for a .98 acre site (Parcel C-81) on the northwest corner of Westbrook Boulevard and Parkway One, adjacent to the open space. Substations typically take about 2 years to plan, design, fabricate and construct. The Creekview Substation will have a provision for one 46 MVA bank and 8 underground 12kV breakers/ circuits. The substation will be served from a 60kV overhead transmission line that will extend north into the project. A 12' block wall will be constructed by RE around the substation site.

A level pad at rough grade with no mitigation issues (the substation site) will be deeded to RE after the 500th home is constructed. The Developer shall provide an access road capable of transporting a 200,000 pound distribution transformer and associated transportation trailer. The road shall be designed to meet the truck and trailer minimum turning radii, shall have a minimum width of 12 feet (12') plus two foot (2') aggregate base shoulders on each side of the road, and shall have a structural section consisting of lime treated sub-grade with 2" asphalt concrete over 4" aggregate base. The final design of the access road shall be reviewed and approved by Public Works after consultation with the Electric Department's Engineering Group before it is constructed.

Backbone Fee

Though RE is responsible for the costs of its new substation and transmission lines, it recently implemented a new "backbone fee" to offset those costs. Fees are collected at the permit stage for new projects. The backbone fee is in addition to the developer's costs for the electrical distribution system that will serve the project.

Table 2 -- Estimated Electric Backbone Fees at Buildout

Creekview Land Use	Units Estimated	Sq Ft Estimated	Unit Pricing Backbone Mitigation Fees	Totals
Single Family -- LDR & MDR	1,491		$ 1,211	$ 1,805,601
Multi-Family -- HDR	520		$ 518	$ 269,360
Commercial/ Business Professional		190,000	$ 2.47	$ 469,300
Elementary School		45,500	$ 2.47	$ 112,385
Public Facilities		4,000	$ 2.47	$ 9,880
Totals	2,011	239,500		$ 2,666,526

The backbone fee for Creekview is estimated at $2,666,000.

Existing On-Site Electric Facilities

PG&E 12kV Overhead Electric: An overhead PG&E 12kV three phase electric mainline extends diagonally along the south side and following Pleasant Grove Creek (Figure 2), and serves a mobile home on the southeast portion of the property. This is a PG&E mainline that will need to remain in service and be converted to underground as Creekview Phase 1 is developed. Additionally, a 12kV radial tap extends south off this line, follows the future Westbrook Boulevard alignment and serves the O'Brien parcel south of Blue Oaks Boulevard. Service must be maintained to the O'Brien parcel until permanent new service from RE can be established. Since electric service will be supplied by RE, the PG&E line has no practical long term value to the development.

Figure 2 - PG&E 12 kV Overhead Line

SECTION 3 – NATURAL GAS SERVICE

PG&E

Pacific Gas & Electric Company (PG&E) will supply natural gas service to the Plan Area -- upon request and in accordance with the rules and tariffs on file with the California Public Utilities Commission (CPUC). We estimate peak gas demand at buildout at approximately 113 thousand cubic feet per hour (MCFH).

Table 3 -- Estimated Natural Gas Peak Demand at Buildout

CREEKVIEW LAND USE	UNITS Estimated	SQ FT Estimated	Total Demand (CFH)
Single Family Residential -- LDR	836		41,800
Single Family Residential -- MDR	655		32,750
Multifamily Residential -- HDR	520		26,000
Commercial/ Business Professional		190,000	9500
Elementary School		45,500	2275
Public Facilities		4,000	200
	2011	239,500	112,525

Existing Facilities

PG&E has no existing natural gas facilities adjacent to the site. It maintains an 8" high pressure gas main (60 psig Maximum Operating Pressure) on Blue Oaks Boulevard and Hayden Parkway, approximately 0.8 miles east of the future Westbrook Boulevard. The system is fed from two natural gas regulator stations: One located at Blue Oaks Boulevard and Industrial Avenue, the other at Country Club Drive and Badovinac Drive (Figure 3).

Offsite Bring-Up

The 8" gas main will extend west from Hayden Parkway to Westbrook Boulevard in the PUE in a joint trench consisting of RE, AT&T, SureWest and Comcast.

Figure 3 – PG&E Gas Regulator Station, Country Club Drive & Badovinac Drive

System Design

An 8" plastic distribution main will be extended north on Westbrook Boulevard from Blue Oaks Boulevard through the site. Distribution lines and services will extend off the main and will be sized based on anticipated gas loads to the various parcels.

Residential neighborhoods will have 2" plastic mains and 1" services. The mixed use section east of Westbrook Boulevard will likely require a 4" plastic main.
The eight inch plastic main is oversized for the needs of the project, so we will negotiate for "betterment" credits from PG&E for the incremental cost of the pipe above that which is required (likely 6").

SECTION 4 – TELEPHONE

AT&T

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

Existing Facilities

The Plan Area will receive AT&T service from the Stanford Ranch /Rocklin Central Office (CO) located near Industrial and Sunset. Stanford/Rocklin is a mega wire center, equipped with the latest in fiber telecom technology.

An underground AT&T line (copper, 25 pair cable) runs north up Phillip Road, serves the dog kennel, continues north and then west on the north side of Phillip Road (future Blue Oaks) adjacent to the project. The feed is from the Pleasant Grove Wire Center (to the west) and is old, undersized, outdated for our purposes and of little value to the development. Since it has working services, it will remain in service but require some work around as Blue Oaks Boulevard is developed.

Offsite Bring-Up

Conduit structure exists on Blue Oaks Boulevard and Hayden Parkway. AT&T will push fiber cable to the site in the proposed joint trench that will extend west on Blue Oaks Blvd from existing conduit structure at Blue Oaks Boulevard and Hayden Parkway.

Plan for a conduit backbone system (3-4" conduits) with manholes (primarily PTS-65's) about every 750' for the offsite extension. Line extensions to developments are made per a formula which requires AT&T to partially subsidize the extension costs.

System Design

Plan for backbone conduit (4-4" conduits) and manholes (PTS-65's and 38Y's) extending north up Westbrook Boulevard capable of supporting both copper and fiber systems. AT&T will place Primary Flex Points (PFP's) for telecom service to the individual users. Each PFP will be fed with 1-4" conduit, and will have a 48 x 78 box located adjacent. We anticipate 6 to 7 PFP's, as required.

Residential: Service to residential customers will be Fiber to the Premises (FTTP). It's unclear at his point if the service will be fiber fed directly from the CO, or from a remote terminal (RT) site established in the development. If the RT is necessary, a 10 x 20 foot exclusive easement will be required for a controlled environment cabinet (CEC). This needs electric service, so plan for a metered service pedestal and possibly a transformer at this location.

AT&T's U-verse triple play package (internet, dial tone and video) will be in Creekview. If you take into account AT&T's wireless services, it can be considered a "quad play." The FTTP cable will be blown in flexible 1¼" poly duct with 17" x 30" boxes provided by developer.

All costs for AT&T facilities in buildout/production residential areas – engineering, cabling, splicing, vaults, pedestals, conduit, and inspections (including trenching) are AT&T's responsibility. In most cases the developer installs the infrastructure (trenching and any required conduits & vaults) and invoices the utility for its share. AT&T pulls the cable, splices and lights up the services. Costs for AT&T facilities on arterial roads in residential areas are addressed on a case by case basis. Custom home neighborhoods are served under a different section of the line extension rule and can be quite expensive.

Figure 4 – AT&T Hut on Westpark Drive

Commercial & Retail: Service to commercial and retail customers will be based on their requirements, and can be either copper or fiber. AT&T has continued using copper pairs for traditional business telephone and T-1 services, but that is changing. Based on advancing technology and the timing of this project, we expect all commercial, office and retail will be fiber fed from the Hut (Figure 4) located on existing Phillip Road just north of Westpark Drive. AT&T supplies the cabling, conduit, manhole rings and covers at its expense for extensions while the developer furnishes and installs the trench, conduit, vaults and manholes along public roads in the mixed use area. Conduit, manhole rings and covers, trench, vaults and any necessary manholes are all developer expense on private property, with AT&T supplying the cable.

SECTION 5 – BROADBAND

SUREWEST

SureWest Communications is a competitive local exchange carrier (CLEC) and will also offer services within the Plan area.

Existing Facilities

The Plan Area will receive SureWest Broadband service from the Controlled Environment Vault (CEV) (Figure 5) located at Blue Oaks Boulevard and Woodcreek.

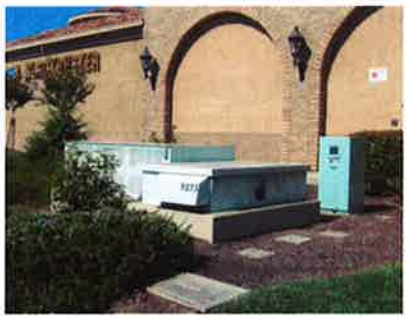

Figure 5 – SureWest CEV at Woodcreek and Blue Oaks Boulevard

Offsite Bring-Up

Conduit structure exists on Blue Oaks Boulevard and Hayden Parkway. SureWest will push fiber cable to the site in the proposed joint trench that will extend west on Blue Oaks Blvd from the existing conduit structure at Blue Oaks Boulevard and Hayden Parkway.

System Design

Plan for a conduit backbone system (3-4" conduits) with manholes (primarily PTS-65's) about every 750' for the offsite extension. The conduit backbone system will extend north up Westbrook Boulevard through the site. SureWest will pay for its pro-rata share of trench and provide and install its own conduits, boxes and manholes.

Figure 6 – SureWest Magnatek Cabinet

SureWest will place at least one RT site in the development, so anticipate a 10 x 12 foot exclusive easement for a Magnatek Cabinet (Figure 6). Electric service is required, so plan for a metered service pedestal and possibly a transformer at this location.

Residential: Service to residential customers will be FTTP, with a triple play package of services (internet, dial tone and video) available. SureWest will place its own conduit, boxes and pedestals; developers will provide the trench. The FTTP cable will be placed in 2" conduit with 17" x 30" boxes and 8" vaults (flower pots) furnished by SureWest.

Commercial & Retail: Service to commercial and retail customers will be fiber fed.

SECTION 6 – CABLE TELEVISION/ BROADBAND

COMCAST COMMUNICATIONS

Comcast is the cable television provider for this area and will serve the Plan Area with cable and broadband. It has no facilities in the immediate area.

Offsite Bring-Up

Conduit structure exists on Blue Oaks Boulevard and Hayden Parkway (Figure 7). Comcast plans to push fiber cable to the site in the proposed joint trench that will extend west on Blue Oaks Blvd from the existing conduit structure at Blue Oaks Boulevard and Hayden Parkway. Assume 2-2" conduits for the fiber extension, with pedestals (and in some cases 24" x 36" splice boxes) located approximately every 500'.

Figure 7 – Take off Point for Extension of Natural Gas, Cable Television &Telephone to site – Hayden Parkway at Blue Oaks (looking west)

System Design

Comcast will place its own conduit, boxes and pedestals, fiber and nodes. 6 fibers feed each node, and we anticipate 5 to 6 nodes. Developers will provide the trench.

Comcast will install a fiber/coax hybrid system and offer a "triple play" of services (dial tone, video and internet access).

SECTION 7 – OTHER CONSIDERATIONS

Construction Trailer Location

We recommend converting the existing mobile home on the southeast corner of the development (south of Pleasant Grove Creek at the bridge) into a construction trailer. Electric service exists from the adjacent PG&E line. Telephone is via a buried service drop from near the bend in Phillip Road, and wireless internet service is also available (see below).

Wireless Internet

Wireless internet service is available via a line of sight connection (through a dish) from Zeta Broadband facilities located on the SureWest Tower in Roseville, about 4.2 miles east of the project (www.zetabroadband.com).

SECTION 8 – SUMMARY & CONCLUSIONS

All the major dry utilities (electric, natural gas, telephone, cable television and broadband) are available.

Offsite Bring-Up Costs

Conduit systems for all the required dry utilities are located .8 miles east at Hayden Parkway. Electric mainline circuits will be extended 1.4 miles from the Westplan Electric Substation. The owners should be sure to include off site bring-up costs in their budgets.

Issues Requiring Further Attention:

- Finalize the substation site and 60kV transmission routing with RE
- Determine and negotiate remote terminal (CEC) site locations for AT&T and SureWest
- Review the geometry of Blue Oaks Boulevard relative to Harris property to ensure adequate space (50' minimum) is available to locate the 60 kV line north of Blue Oaks Boulevard

Environmental Documents

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

- New electric transmission-related facilities such as 60kV lines and the substation location
- Any potential environmental issues associated with offsite bring-up of the dry utilities (60kV overhead, and 12kV electric, natural gas, telephone and cable television/broadband underground joint trench) on Blue Oaks Boulevard, to and within the Plan Area

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