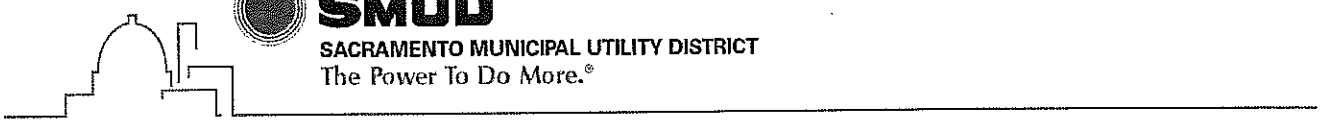
# SACRAMENTO MUNICIPAL UTILITY DISTRICT'S APPLICATION TO ACTIVATE LATENT POWER



# SACRAMENTO LAFCo APPLICATION
# ACTIVATION OF LATENT POWER

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# GLOSSARY

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| **AB 32**: | California Global Warming Solutions Act of 2006 |
| **ARB**: | California Air Resources Board |
| **ASHRAE:** | American Society of Heating, Refrigerant and Air-Conditioning Engineers |
| **Btu:** | British Thermal Unit |
| **CEC**: | California Energy Commission |
| **CEQA**: | California Environmental Quality Act |
| **CHP**: | Combined Heat and Power |
| **City**: | City of Sacramento |
| **CKH Act**: | Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 |
| **CPUC**: | California Public Utilities Commission |
| **HVAC**: | Heating, Ventilation, and Air Conditioning |
| **IDEA**: | International District Energy Association |
| **kWh**: | Kilowatt-hour |
| **LAFCo**: | Sacramento Local Agency Formation Commission |
| **LEED**: | Leadership in Energy and Environmental Design |
| **MW**: | Megawatt |
| **MUD Act**: | California Municipal Utility District Act |
| **NREL**: | National Renewable Energy Laboratory |
| **RPS**: | Renewable Portfolio Standard |
| **SACOG**: | Sacramento Area Council of Governments |
| **SAIDI**: | System Average Interruption Duration Index |
| **SAIFI**: | System Average Interruption Frequency Index |
| **SMUD**: | Sacramento Municipal Utility District |
| **SRCSD**: | Sacramento Regional County Sanitation District |
| **TES**: | Thermal Energy Storage |
| **VRA**: | Vulnerability and Risk Assessment |

**SACRAMENTO LAFCo APPLICATION**
**ACTIVATION OF LATENT POWER**

## I. EXECUTIVE SUMMARY

The Sacramento Municipal Utility District (SMUD), which has provided retail electric service to the Sacramento area since 1946, seeks the Sacramento Local Agency Formation Commission's (LAFCo) approval to activate SMUD's latent power for thermal energy service within its service boundaries. Thermal energy service (*i.e.*, heat) is one of SMUD's authorized services under the Municipal Utility District Act (MUD Act), but is a so-called "latent" power requiring activation by LAFCo. No change in SMUD's existing service boundaries is necessary in connection with SMUD's proposal to activate a latent power.

Activating SMUD's latent power for thermal energy service would enable SMUD to provide retail thermal energy service to customers using district energy systems, which in some cases may include combined heat and power (CHP) facilities and/or thermal energy storage. Customers within a district would use thermal energy – in the form of chilled water, hot water, or steam, or various combinations thereof – for space heating, domestic hot water heating, and air conditioning. SMUD would develop district energy facilities at appropriate sites throughout its service boundaries. Typically, district energy would be implemented in newly-planned developments, although there may be instances in which existing development, infill development, or a combination of the two may be appropriate for district energy. Implementation of district energy would be an option, not a requirement, for the developer of the particular site, and after development would be the means by which those residing or occupying space in the development receive space heating, domestic hot water, and air conditioning (or other thermal services, such as process steam). In recent years, SMUD has evaluated whether the provision of thermal energy services through district energy systems would be a viable option at potential development sites, but has not entered into any agreements to develop such systems or approved such systems. Nonetheless, SMUD seeks through this Application to activate a latent power so that it has the ability to make retail thermal energy service available to its customers at appropriate locations.

SMUD's proposal to provide thermal energy services at appropriate locations using district energy systems will further State, regional, local, and SMUD goals and policies relating to climate change and the provision of environmentally beneficial, cost effective, efficient, and reliable energy service. District energy, both with and without CHP, furthers these goals and policies by utilizing centralized and efficient technologies to replace relatively less efficient and decentralized heating and cooling facilities. CHP, which uses one fuel input to produce two outputs and captures and uses heat that is otherwise wasted in the energy generation process, further promotes important State, regional, local, and SMUD goals and policies. In short, the provision of thermal energy services by SMUD would help fill a vital need that has been identified by policymakers and regulators.

As required by Government Code section 56824.12(a), this Application includes SMUD's plan for providing thermal energy services, including the level and range of thermal energy services SMUD would provide, the timing of availability of such services, the types of facilities that would be used to provide such services, cost information, and information regarding how SMUD would finance such services. Because there are no other providers of retail thermal energy services within SMUD's service boundaries, there is no potential for customers of other providers to be affected by activating SMUD's power to provide thermal energy service within its service boundaries.

SMUD requests that LAFCo approve this Application for a change in organization to activate a latent power pursuant to Government Code sections 56654(b) and 56824.10 through 56824.14. Such LAFCo approval is not a project for purposes of CEQA, or it is exempt from CEQA review pursuant to CEQA Guidelines section 15320. A copy of the certified Resolution of Application to Activate Latent Power adopted by SMUD's Board of Directors is included as Exhibit A hereto.

## II. THE PROPOSED ACTIVATION OF LATENT POWER FOR THERMAL ENERGY SERVICE

### A. SMUD's Existing Services

#### 1. History

Since 1915, the MUD Act has authorized districts such as SMUD to supply various services, including electricity and heat, to the residents, businesses, and public agencies within district boundaries. (Public Utilities Code sections 11500 *et. seq.*) SMUD currently provides electric service, but none of the other services it is authorized to provide, throughout its service boundaries.

On July 23, 1923, voters in Sacramento County created SMUD to replace PG&E as the local electric service provider. SMUD began providing electric service on December 31, 1946, following the financing of electric service operations and a long court battle with PG&E. Since 1946, SMUD has provided affordable, reliable, and timely solutions for meeting its customers' electrical energy needs, through a locally elected and accountable Board of Directors.

SMUD currently generates, transmits, and distributes electric power throughout a 900 square mile service area that includes Sacramento County (except for the extreme southwest portion of the County) and a small portion of Placer County. Additionally, in 2004 SMUD annexed a small area in Yolo County in response to a request from its long-time customer, the Sacramento Regional County Sanitation District (SRCSD), for service to SRCSD's South River Pump Station, which is a component of the SRCSD's integrated wastewater conveyance and treatment system. A map of SMUD's existing service area is included as Exhibit B hereto.

SMUD is the nation's sixth largest community-owned electric utility, serving a population of approximately 1.4 million people. As of December 31, 2008, SMUD has more than 590,000 customers and approximately 2,100 employees.

SMUD is an experienced, qualified provider of cost effective, clean, and reliable energy.

## 2. Governance

SMUD is a local public agency authorized and formed pursuant to the MUD Act. SMUD is governed by a seven member Board of Directors elected to staggered four-year terms. The Directors are elected by ward and are required to reside in their respective wards. The Board determines questions of policy, performs oversight, and sets the rates, rules, and regulations for SMUD. The SMUD Board's discussions and decision-making are conducted in publicly noticed meetings, and members of the public are invited to attend and participate. In addition, SMUD Board of Directors meetings are televised and webcast. Public access to the Board of Directors meetings ensures that the residents in the area where SMUD provides service have the opportunity to influence energy-related decisions impacting local communities.

SMUD's Board of Directors establishes SMUD's vision for the future and the core values and policies necessary to realize that vision. While SMUD's overall purpose is to meet its customers' electrical energy needs, SMUD's *vision* is to empower its customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve the Sacramento region. (SMUD Policy Numbers SD-1A and SD-1B.)

*Core values* are deemed essential for the success of SMUD and for serving SMUD's customers. *Key values* provide extra value to SMUD's customers. Together, these values form the foundation of SMUD's strategic directives – the operating parameters that spell out SMUD's vision for the future, its role within the community, the values SMUD supports, and how SMUD's operations are managed.

SMUD has strategic directives regarding the following core and key values:

Core values

- Competitive Rates (Policy Number SD-2)
- Access to Credit Markets (Policy Number SD-3)
- Reliability (Policy Number SD-4)
- Customer Relations (Policy Number SD-5)
- Safety (Policy Number SD-6)
- Environmental Leadership (Policy Number SD-7)
- Employee Relations (Policy Number SD-8)
- Resource Planning (Policy Number SD-9)

- Local Control (Policy Number SD-11)
- Ethics (Policy Number SD-12)
- Information Management and Security (Policy Number SD-16)

Key values

- Research and Development (Policy Number SD-10)
- Economic Development (Policy Number SD-13)
- System Enhancement (Policy Number SD-14)
- Outreach and Communication (Policy Number SD-15)

Copies of the listed strategic directives are provided in Exhibit C hereto. More information about SMUD's strategic directives is available at http://www.smud.org/en/board/Pages/index.aspx.

### 3. Cost Effective Service

SMUD's electric rate structure is largely based upon the marginal cost of service, or the additional cost incurred by SMUD to provide service to an additional customer. In general, SMUD's cost of providing electric service includes the generation and purchase of power, and the transmission, distribution, and delivery of power to the customers, along with other ancillary customer services. SMUD also seeks to meet ongoing energy efficiency and renewable energy goals set by the California Legislature and the SMUD Board.

Over the past 15 years, SMUD's approach to resource procurement and system development and maintenance has resulted in long-term customer cost stability and a significant overall customer cost advantage compared to PG&E, the investor owned utility that provides electric service throughout much of northern California. During that period, SMUD's electric rates have been at least 25% lower than PG&E's. Even considering the proposed rate increases currently being considered by SMUD's Board of Directors to address issues associated with the uncertain economy and other factors, SMUD expects that its rates will remain significantly lower than PG&E's in the foreseeable future.

### 4. Reliable Service

The provision of reliable service is a SMUD core value. (SMUD Policy Number SD-4.) SMUD uses (i) its generation resources and power purchase agreement portfolio 100% of the time; and (ii) its transmission assets to assure an overall resource availability of at least 99.99%. SMUD maintains its electric system in good repair and makes necessary upgrades to maintain load serving capability and regulatory standards.

SMUD follows the reliability criteria set by the North American Electric Reliability Council and the Western Electricity Coordinating Council. In addition, SMUD operates

its control area to meet energy demand under conditions where any single element failure does not result in operation outside applicable limits.

SMUD measures its overall reliability with industry standard metrics for average outage duration (SAIDI) and average frequency (SAIFI) of outages. SMUD's five year average for SAIDI is 72 minutes and 1.27 occurrences for SAIFI (excluding major events). SMUD's overall distribution reliability compares favorably to other utilities in the State.

#### 5. Credit Rating

Like most public power utilities, SMUD relies on the use of borrowed funds to pay for a portion of its capital projects. Access to credit markets is a SMUD core value. (SMUD Policy Number SD-3.) In order to ensure continued access to these funds at a reasonable rate, it is important that SMUD maintain strong credit ratings. One indicator used by both SMUD and the rating agencies to measure financial strength is the fixed charge ratio (a measure of how much cash flow SMUD has available to make its debt service payments and other fixed obligations). SMUD maintains its fixed charge ratio, and other financial health indicators, so as to secure its longstanding "A" bond rating.

#### 6. Customer Satisfaction

Maintaining a high level of customer relations is a core value of SMUD. (SMUD Policy Number SD-5.) SMUD's Board has established an overall customer satisfaction target of 95 percent, with no individual measured component falling below 85 percent. As part of this policy, customers are treated in a respectful, dignified, and civil manner. SMUD implements a procedure for customers to be heard if they believe they have not received fair treatment from SMUD.

In 2007 and 2008, SMUD was awarded top honors in the western region in business customer satisfaction and scored highest nationwide, according to a nationally recognized customer satisfaction survey. In 2007, SMUD won a similar award pertaining to customer satisfaction of residential customers in California.

### B. District Energy

#### 1. SMUD Seeks to Activate Latent Power

As discussed above, although SMUD is authorized under the MUD Act to provide heat service, it currently does not do so. Thus, through this Application, SMUD seeks to activate a latent power, enabling it to provide thermal energy services (*i.e.*, heat) to retail customers at appropriate locations throughout its existing service boundaries using district energy systems.[1]

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[1] SMUD is also presently developing a tariff (a "feed-in" tariff) pursuant to which customers who develop on-site CHP systems may sell to SMUD electricity generated by the CHP facility in excess of the customer's on-site requirements. As an existing electric service provider, SMUD is authorized to procure

### 2. District Energy Described

In general, district energy means the centralized production of thermal energy, for distribution within a defined area surrounding the energy production facilities, often referred to as a district. Various technologies may be used, alone or in combination, to provide thermal energy services in a district. In practical terms, and at present, thermal energy services primarily include the production and delivery of some or all of the following:

- Chilled water for cooling building spaces
- Hot water for heating building spaces
- Steam to heat building spaces
- Hot water to produce domestic potable hot water within the buildings, and/or steam to produce domestic hot water

All or some of these thermal services may be included in a district energy system, depending on customer needs, and technical and economical feasibility. It is possible that additional technologies may be developed to generate thermal energy, including renewable technologies, and that different or additional customer uses may evolve. Regardless, thermal energy services involve providing heat and/or removing heat (*i.e.*, cooling) to and/or from buildings and thus are included within SMUD's powers authorized by the MUD Act.

#### a. Central Plant

District energy systems produce steam, hot water, or chilled water, using thermal energy, at a central plant and then deliver that energy through underground pipes to buildings in a district for space heating, domestic hot water heating, and/or space cooling. For example, large scale natural gas boilers and electric chillers may be installed at the central plant to produce the hot and cold water that is piped to buildings through a network of pipes buried in city or county streets. This avoids the need to install multiple boilers or furnaces, chillers, and/or air conditioners at individual buildings within a district. The consolidation of boilers and chillers enables reduced production costs for, and increased reliability of, energy services compared to buildings having their own boilers, chillers, and related equipment. Consolidation also promotes more efficient supply of thermal energy, and reduces emissions of air pollutants. The following figure from the International District Energy Association illustrates how district energy systems provide these services.

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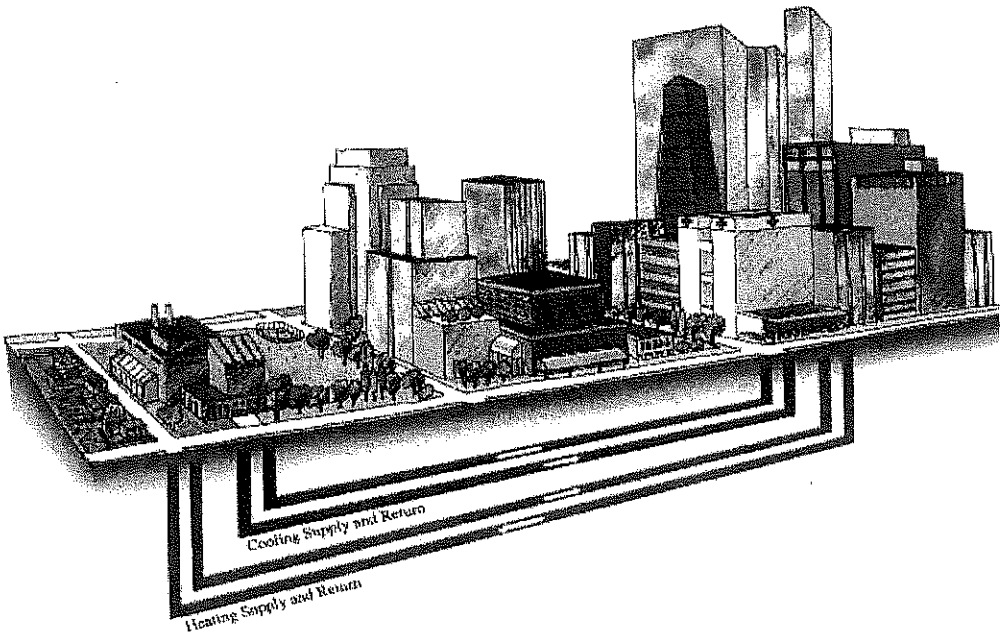
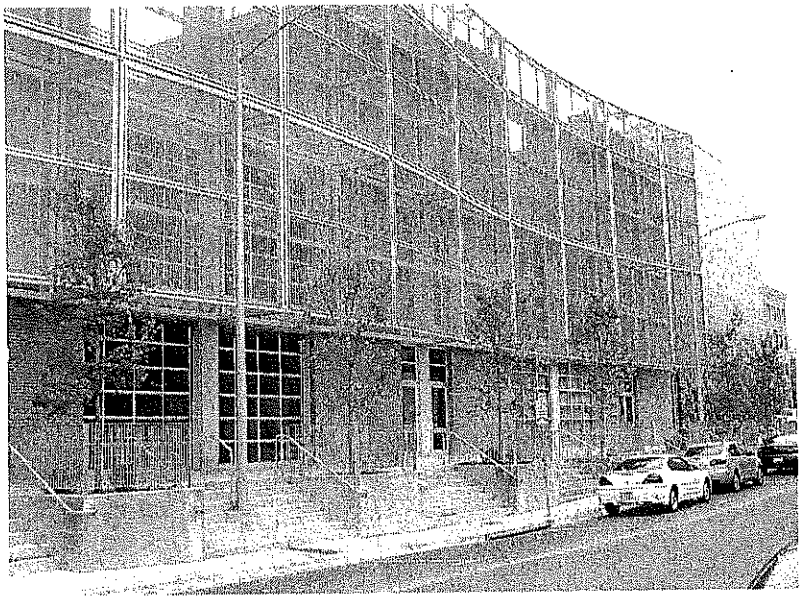
electricity, including through such feed-in tariffs. This tariff is not discussed further in this Application. (*See also* Pub. Util. Code, § 2841.5.)




Source: International District Energy Association

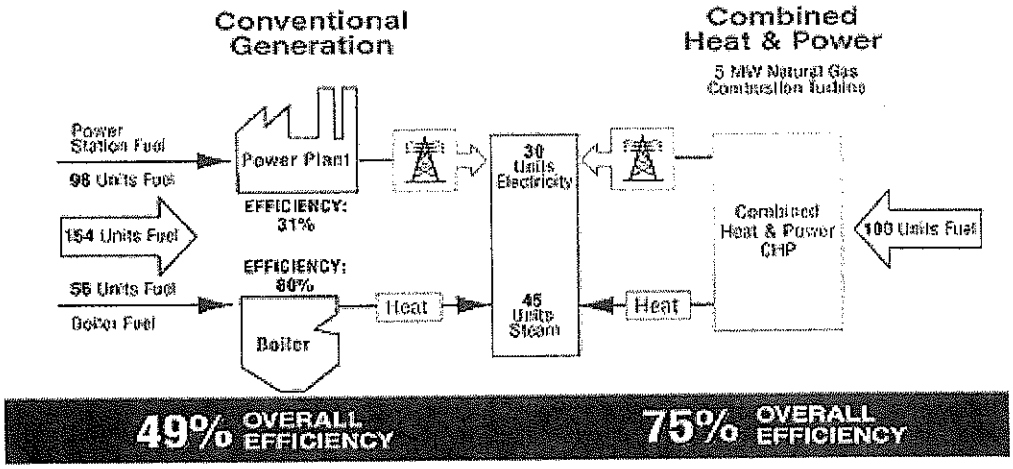
Below is a photo of a building housing a downtown district energy central plant in Austin, Texas.



**b. Combined Heat and Power**

Some district energy central plants also incorporate combined heat and power. Combined heat and power – also known as CHP or cogeneration – is a way to increase the efficiency of power plants. CHP plants use one fuel source to produce two useful

outputs, electric energy and thermal energy.[2] Standard power plants effectively use about 40 percent of the fuel they burn to produce one output, electricity. Sixty percent of the fuel used in the standard electric production process ends up being rejected or "wasted" up the smokestack and cooling towers. In contrast, CHP captures this rejected energy, which may be used to heat buildings in a surrounding area through the district energy system, resulting in increased plant efficiency and overall system reliability, as well as reductions in emissions of air pollutants. District energy using CHP also helps displace peak electric power demand with absorption cooling by putting a CHP unit's waste heat to productive use during the cooling season. The following figure depicts the efficiency of a CHP unit compared to conventional generation.




Source: US EPA CHP Partnership

### c. Thermal Energy Storage

District energy central plants may include thermal energy storage. Thermal energy storage includes a variety of technologies that store energy in a thermal reservoir for later uses. It can be used to balance day time and night time energy demand. For example, thermal energy storage systems may generate and store chilled water or ice at night when utility electric demand is low. The stored chilled water or ice may then be used to cool buildings via the district energy system during the afternoon peak demand period. Storage thus avoids use of more expensive, less efficient peaking power plants during hot afternoons when air conditioning load is highest.

When CHP is coupled with thermal energy storage, benefits to the local power grid result because of the reductions in peak power demand and power transmission congestion impacts. Thus, district energy not only helps heat and cool customer facilities, it helps alleviate the demand and delivery challenges posed by high electric consumption, reducing costs for customers.

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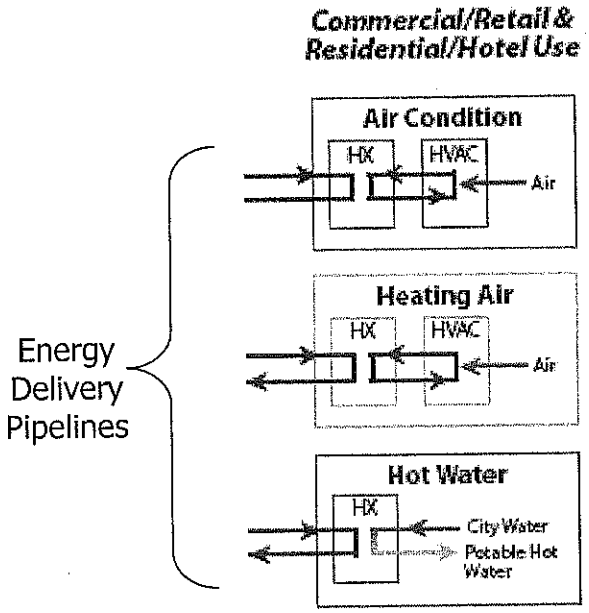
[2] In this regard, electric energy generated by any SMUD district energy plants incorporating CHP would be delivered to retail electric customers throughout SMUD's existing service boundaries.

### d. Thermal Distribution Facilities

District energy systems use pipes to transport chilled water, hot water, and/or steam from the central plant to each building served within the district. Piping networks may be comprised of various sizes of pipes, fittings, and valves, and may be made of carbon steel or high density polyethylene pipe that is insulated to reduce heat loss or gain.

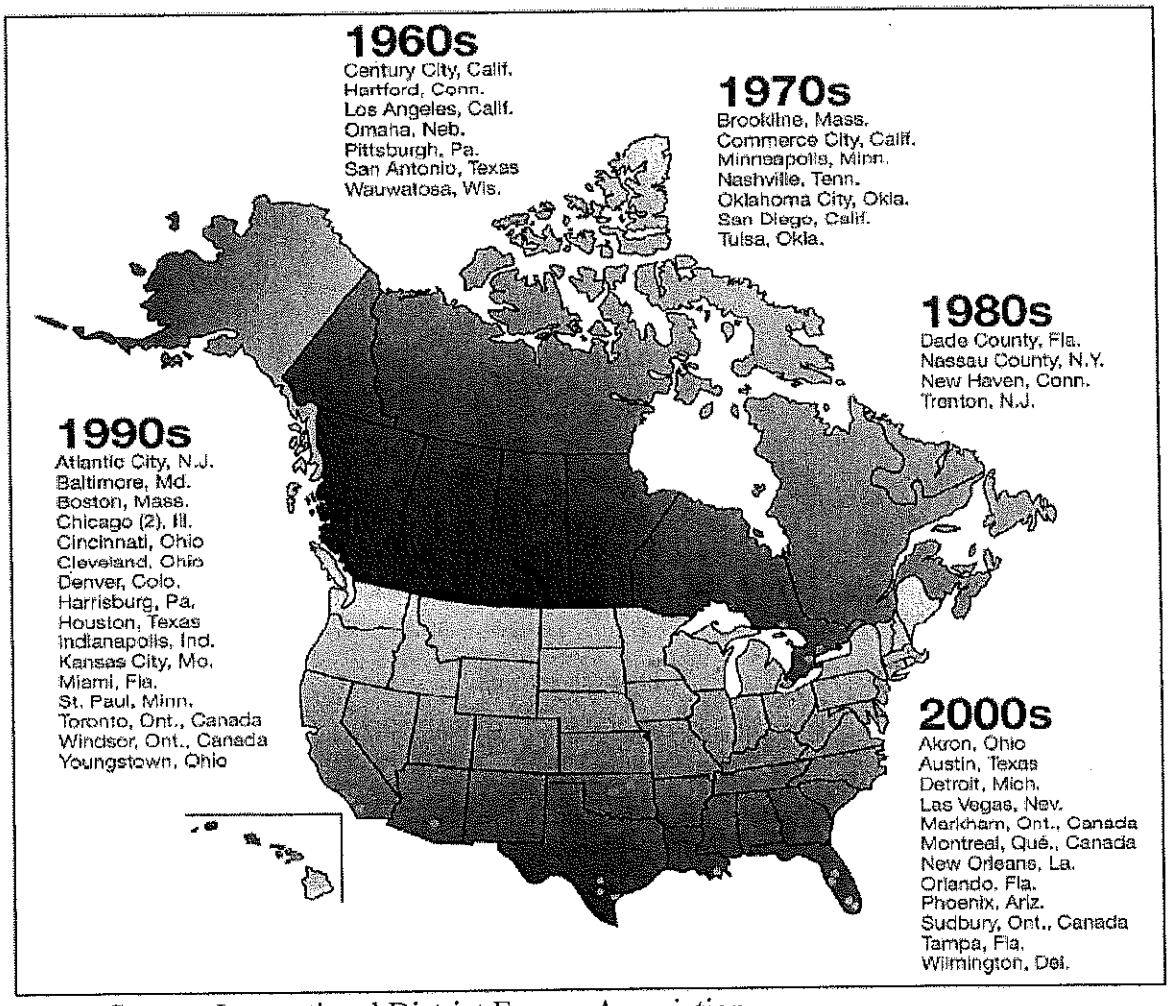
Current practice is to use supply and return pipes for hot and chilled water, and/or steam. This piping typically is buried beneath streets, sidewalks, and/or landscaping throughout the district. Commonly, wiring and sensors are also buried with the pipe network. They are used to monitor flow rates and pressures in the piping network, detect leaks, automate valve operation, communicate with customer meters, and for other purposes. Depending on design preferences, pipes may be direct buried or housed in tunnels. There may also be vaults throughout the district where valves and/or sensors are located.

The pipelines that deliver thermal energy to buildings in a district typically enter in the basement, where they are interconnected to heat exchangers. The heat exchangers take thermal energy from the pipelines and transfer it to water distribution systems dedicated to the building HVAC and/or domestic hot water systems. Revenue grade thermal meters are located at the heat exchanger and customer usage and billing is derived at this transfer point. The diagram below shows the configuration of the pipelines from the utility, heat exchangers, and building systems.



### e. History and Current Applications

District energy is not a new technology – it has been used for over a century to supply heating and cooling service to city cores, military bases, and universities in the United States and Europe. Members of the International District Energy Association have installed systems in 38 states and in over 125 cities and/or universities across the country. The graphic below illustrates the breadth and timelines for development of downtown district cooling systems across the country, noting the decade in which services commenced.




Source: International District Energy Association

### 3. District Energy in SMUD's Service Area

Within SMUD's service area, district energy is well-suited for serving new development, including residential, commercial, and industrial mixed uses; technical, education, and health care campuses; and other mixed uses. In some instances, however, district energy may be a viable option at existing uses, such as high load density areas like downtown city cores. (In general, load refers to demand on an energy system.) SMUD seeks to be able to install district energy at suitable locations throughout its service territory as an

alternative to traditional heating and cooling services.[3] Whether or not SMUD develops district energy systems will depend on a variety of factors, including but not limited to:

- Developer or customer interest,
- Density of thermal loads to be served,
- Diversity of thermal loads to be served,
- Availability of economies of scale in delivery infrastructure,
- Ability to coordinate district energy installations with other construction or redevelopment activities to reduce capital costs and environmental impacts, and
- Overall benefits to SMUD's customers.

Consideration of these factors means that SMUD would not be able to offer district energy services to all customers within its existing service territory. However, where SMUD and a developer or a customer agree that district energy is an appropriate, cost effective solution for a particular new development project or to serve existing uses, district energy would be the means by which customers located in the district receive space heating, domestic water, and air conditioning, or other thermal energy services, such as process steam. As set forth in Section IV.B, below, SMUD's plan for providing thermal energy service takes into account each of the factors listed above.

SMUD has been investigating the viability of district energy for the region in recent years. As part of this investigation, several opportunities were evaluated and studies were conducted as part of the evaluations. SMUD continues to evaluate district energy and has conducted or is conducting more detailed studies for two potential projects, including one for the Railyards in downtown Sacramento. No agreement has been reached with any developer or existing customer at this time, and it is not possible to predict whether a project will result from any of the recent or current evaluations.

### C. Regulatory Framework

In order to be able to supply thermal energy generated by district energy systems, including systems with CHP and/or thermal energy storage facilities, to retail customers, SMUD must obtain approval from the Sacramento Local Agency Formation Commission (LAFCo) to activate a latent power, pursuant to the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (CKH Act). Following is a discussion of the regulatory requirements applicable to SMUD's proposal to activate a latent power. No change in SMUD's existing service boundaries is required in connection with the proposal to activate a latent power.

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[3] SMUD's implementation of district energy could be accomplished directly by SMUD, or through appropriate contractual arrangements authorizing third parties to own and/or operate a portion, or all, of the facilities; a joint power authority; or any other suitable arrangement.

### 1. Municipal Utility District Act Authority to Supply Thermal Energy

Under the MUD Act, SMUD is authorized to provide light, water, power, heat, and transportation service, telephone or other communication service, and garbage, sewer, or refuse matter service. (Pub. Util. Code, § 12801.) SMUD currently provides electric (*i.e.*, light and power) service throughout its existing service boundaries. SMUD does not presently provide any of the other services it is authorized to provide.[4]

Districts frequently provide fewer services than they are authorized to provide by their governing laws.[5] A power granted a district by law, which a district does not exercise, is referred to as a "latent" power. Although it is authorized to do so, SMUD does not currently supply thermal energy to retail customers. Thus, SMUD's power to supply retail thermal energy is a latent power.[6] Through this Application, SMUD seeks to activate its latent power to be able to provide retail thermal energy service (*i.e.*, heat), using district energy systems, at appropriate locations throughout its existing jurisdictional boundaries.

### 2. LAFCo Approval Required to Activate Latent Power

The CKH Act provides that a district must apply to LAFCo to exercise "new or different functions or services," *i.e.*, latent powers. Government Code sections 56824.10 through 56824.14 contain the exclusive provisions governing proposals to activate latent powers and LAFCo's review thereof. Pursuant to Government Code section 56824.12(a), a proposal by a district to activate a latent power may only be made by adoption of a resolution of application by a district's Board of Directors. A resolution of application must also include a detailed plan for providing the proposed new or different services, including information as to how the new or different services will be financed.

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[4] SMUD maintains fiber optic lines within a portion of its service boundaries. SMUD does not provide retail fiber optic services. Rather, SMUD uses the fiber optic lines for its own operations. By agreement, SMUD allows several local agencies – the City of Folsom, the Los Rios Community College District, the City of Sacramento, the County of Sacramento, the Regents, University of California Davis, and the U.S. Bureau of Reclamation – use of excess capacity on the fiber optic lines for their own operations. None of these entities provides retail communication services using SMUD's fiber optic lines.

[5] For purposes of this Section II.C., the term "district" refers to the local entity authorized to provide certain services. Multiple "district energy systems" may be located within the boundaries of a "district," such as a municipal utility district.

[6] SMUD currently is a party to three joint power authorities (JPAs) established to own and operate three large cogeneration facilities that provide wholesale thermal energy sales (*e.g.*, steam) only to host industrial customers. That is, the host consumes the entire thermal output of the on-site cogeneration facility. (*See* Section IV.B.2, below.) The JPAs operate the Central Valley Financing Authority Cogeneration Project located at the Sacramento Regional Wastewater Treatment Plant in south Sacramento, the Sacramento Cogeneration Authority Company Cogeneration Power Project located adjacent to the Campbell Soup manufacturing plant in Sacramento, and the Sacramento Power Authority Cogeneration Power Project located adjacent to the Procter and Gamble manufacturing plant in Sacramento. Through these JPAs, SMUD has gained significant experience and expertise in the construction, operation, and maintenance of cogeneration facilities. (*See* Section IV.B.2, below.)

LAFCo is to review and approve or disapprove a proposal by a district to exercise a latent power within its service boundaries, following a public hearing regarding the proposal.[7] As part of its approval authority, LAFCo may include appropriate conditions regarding the latent power proposal. Subject to limited exceptions, LAFCo is not to approve a proposal to activate a latent power unless it determines that the applicant district has sufficient revenues to carry out the new service. (Gov. Code, § 56824.14(a).) Even if LAFCo determines that a district will not have sufficient revenues to carry out the new service, LAFCo may approve a proposal to activate a latent power if LAFCo conditions its approval on the concurrent approval of sufficient revenue sources pursuant to CKH Act section 56886 (incurring new indebtedness, issuing bonds, etc.).

The Resolution of Application to exercise a latent power of SMUD's Board of Directors is provided in Exhibit A hereto. SMUD's plan for services is set forth in detail in Section IV of this Application. As described in Sections IV.B.5-7, SMUD will ensure it has sufficient revenues to carry out any thermal energy services it may provide at appropriate locations throughout its existing service boundaries. No other regulatory approval or findings are required in connection with SMUD's proposal to activate its latent power for thermal energy service.[8]

### 3. SMUD's Proposal to Activate a Latent Power is Not a Project for Purposes of the California Environmental Quality Act

In general, review under the California Environmental Quality Act (CEQA) is required for "discretionary projects proposed to be carried out or approved by public agencies ...." (Pub. Res. Code, § 21080(a).) Here, although LAFCo's discretionary approval is necessary for SMUD to exercise a latent power, such approval is limited to authorizing SMUD to provide thermal energy service; it is not an entitlement for specific development and it will not cause foreseeable actions, as described in the following paragraphs.

SMUD has not identified specific district energy projects.[9] SMUD's potential eventual exercise of the newly-activated power will depend, in most if not all cases, on customer or developer requests for thermal energy service. Any CEQA compliance that may be required for potential future district energy projects will be addressed in connection with the related development projects, when such development projects are known. It is not now reasonably foreseeable whether and how SMUD might exercise the newly-activated power in the future. Further, SMUD is not proposing to change its boundaries in

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[7] SMUD reviewed LAFCo's Policies, Standards and Procedures Manual ("LAFCo Manual") in the preparation of this Application. While the activation of a latent power is not specifically addressed in the LAFCo Manual, the Application is consistent with the general policies, standards, and procedures set forth in the LAFCo Manual. (*See* http://www.saclafco.org/PolicyStandardsandProceduresManual/default.htm.)

[8] Specifically, LAFCo is not required to refer this Application to the California Public Utilities Commission for findings because the proposed latent power activation does not involve the provision of natural gas service by SMUD. (Gov. Code, § 56131.)

[9] As discussed in Section II.B.3, above, while SMUD has been investigating the feasibility of district energy for several years, and has had discussions with local developers and potential customers about district energy, SMUD has not reached agreement with any developer or potential customer. Thus, it is not possible to predict whether a district energy project will result from any of the current evaluations.

connection with its proposal to activate a latent power. Thus, any authorization by LAFCo enabling SMUD to exercise its latent power to provide thermal energy service is not an approval of a "project" for purposes of CEQA.

Additionally, because specific district energy projects have not yet been identified, it is premature to speculate as to the potential environmental consequences of any such future projects. Because there are so many ways in which the newly-activated power might be exercised, it is not possible for LAFCo to conduct at this time a meaningful review of potential effects on the environment. Accordingly, it would be premature for LAFCo to undertake CEQA review in connection with its review of SMUD's Application to activate its latent power for thermal energy service.

Even if LAFCo concludes its review of SMUD's Application to activate a latent power is a "project" for purposes of CEQA, LAFCo should find that SMUD's Application is categorically exempt from CEQA, pursuant to CEQA Guidelines section 15320. Under section 15320, the following district changes of organization are exempt from CEQA:

> changes in the organization or reorganization of local governmental agencies where the changes do not change the geographical area in which previously existing powers are exercised. Examples include but are not limited to: (a) Establishment of a subsidiary district; (b) Consolidation of two or more districts having identical powers; (c) Merger with a city of a district lying entirely within the boundaries of the city.

Effective January 1, 2009, the CKH Act definition of "change of organization" was modified to include "A proposal for the exercise of new or different functions or classes of services, . . . within all or part of the jurisdictional boundaries of a special district." (Gov. Code, § 56021.) Thus, under current law, SMUD's Application to activate a latent power to exercise a new service within its jurisdictional boundary is a "change of organization."

Further, SMUD's proposed "change of organization" does "not change the geographical area in which previously existing powers are exercised." SMUD is not proposing to change its boundaries in conjunction with the activation of a latent power. Thus, the Application will not have any effect on the boundaries of the geographical area where thermal energy services may be provided. And, there are no "previously existing powers" related to SMUD's Application. No other local government or other entity is presently providing thermal energy service in the area where SMUD proposes to provide such service. Therefore, there is no way in which SMUD's Application could change the area in which existing powers are exercised. Since the proposed change of organization will not "change the geographical area in which previously existing powers are exercised," it is categorically exempt from CEQA pursuant to Guidelines section 15320.

### D. Proposed Terms and Conditions

The SMUD Board of Directors, in SMUD Resolution No. 09-05-04 (May 7, 2009) adopted the following proposed terms and conditions for inclusion in this Application to activate a latent power. Resolution No. 09-05-04 is included in Exhibit A hereto.

1. SMUD shall ensure sufficient revenues exist to carry out thermal energy services.

2. SMUD shall ensure that the costs and benefits of thermal energy services are equitably allocated to SMUD's customers.

3. SMUD shall include thermal energy service in its next scheduled municipal service review.

4. SMUD shall ensure that any CEQA review that may be required in connection with future thermal energy service at district energy projects occurs.

## III. NEED FOR ACTIVATION OF LATENT POWER FOR THERMAL ENERGY SERVICE

District energy, both with and without CHP, will further important State, regional, and local energy and environmental policies, and will enhance SMUD's ongoing efforts to supply its customers with environmentally beneficial, cost effective, and reliable energy. District energy has the potential for many benefits, including the following:

- Reduces greenhouse gas emissions
- Increases energy efficiency, consistent with the top priority in the State's Preferred Loading Order as described in the Energy Action Plan
- Furthers community sustainability strategies, as called for by the Sacramento Region Blueprint and SB 375
- Increases energy reliability
- Contributes to Leadership in Energy and Environmental Design certifications
- Improves cost effectiveness of energy supply
- Makes more rooftop space available, creating opportunities to install solar photovoltaic power generation systems
- Avoids storage of fuels and refrigerants at individual building sites
- Reduces noise and vibration compared to cooling and heating systems at individual building sites

- Eliminates visual impact of packaged air conditioning units and other equipment
- Reduces operating and maintenance costs for building owners and tenants

The following subsections describe in detail how activation of SMUD's latent power for thermal energy service will positively impact the Sacramento region.

### A. SMUD's Commitment to Environmentally Beneficial, Cost Effective, Reliable Energy Delivery

SMUD has long been a leader in providing environmentally beneficial, cost effective, and reliable energy services. SMUD's policies regarding greenhouse gas reductions, renewable energy procurement, sustainable energy development, and efficient energy production and end use are well-aligned with federal and state laws and policies, including the following:

- Federal Energy Independence and Security Act of 2005
- California Global Warming Solutions Act of 2006 (AB 32)
- California Governor's Executive Order S-3-05 on greenhouse gas reduction targets
- California Renewable Portfolio Standard

Tangible proof of SMUD's alignment with these important policies is found in the goals adopted by SMUD:

**Sustainable Energy Supply.** In 2008, SMUD adopted a Sustainable Energy strategic directive to provide a sustainable power supply, defined as one that reduces SMUD's long-term greenhouse gas emissions from generation of electricity, to 10% of its 1990 carbon dioxide emission levels by 2050, while assuring reliability of the system; minimizing environmental impacts on land, habitat, water quality, and air quality; and maintaining a competitive position relative to other California electricity providers.

**Renewable Portfolio Standard**. SMUD has been a leader in renewable portfolio standard (RPS) efforts in California, having adopted an RPS in 2001, one year before it became law in California in 2002. SMUD initially adopted an RPS calling for 20% of its sales to be from renewable energy resources by December 31, 2011, which when coupled with Greenergy® (discussed below), results in a 23% target. SMUD has accelerated its RPS goal to December 31, 2010 and is on target to meet that goal for delivered renewable energy. In 2008, SMUD adopted a 33% RPS by the end of 2020 as part of a broader Sustainable Energy strategic directive – again, prior to a California law enacting such requirements.

**Greenergy®**. SMUD's green energy program, Greenergy®, offers renewable options to residential and commercial/industrial customers, matching up to 100% of participating customers' needs with purchases of renewable resources (wind, biomass/waste, solar,

etc.) for delivery on the SMUD power system. SMUD also matches 40% of Greenergy premiums to help secure new renewable power plants.

In 2007, SMUD's Greenergy® program won a Green Power Pioneer Award from the U.S. Department of Energy, the U.S. Environmental Protection Agency, and the Center for Resource Solutions (a national non-profit working to mitigate climate change). The award recognizes SMUD's advancement and development of the green power market, specifically its open culture that allows managers to share best practices and help other utilities expand green power.

Also in 2007, SMUD's Greenergy® program earned top spots in the National Renewable Energy Laboratory's (NREL) annual ranking of green power programs – 4th nationwide for customer participation, with about 36,500 enrolled, and 7th in renewable energy sales. SMUD launched Greenergy® in 1997, and has consistently placed in NREL's top 10 since 2000. Greenergy® is certified by the Green-e Renewable Electricity Certification Program – the leading national independent certification and verification program for renewable energy and greenhouse gas emission reductions in the retail market.

**Energy Efficiency**. In 2007, SMUD committed to exceed California's energy efficiency requirements by 50%. SMUD plans to help customers reduce total energy consumption by 15% over the next 10 years (1.5%/yr), exceeding the State's requirement of 10% (1%/yr). Such increases in energy efficiency should reduce peak generation requirements by 570 MW by 2017 and reduce greenhouse gas emissions by nearly 1 million metric tons. To achieve the reduction, SMUD will ramp up its efficiency programs and seek a higher level of customer participation by augmenting customer/community outreach.

Activating SMUD's latent power would enable SMUD to provide thermal energy services through district energy systems, which fits squarely within SMUD's goals and policies. As demonstrated throughout this Application, district energy systems allow for centralization of heating and cooling equipment, such that more efficient, cost effective, and environmentally beneficial chillers, boilers, and pumps can be used compared to traditional individual building systems. To the extent a district energy system includes renewable technologies, it would help SMUD achieve its renewable goals. Furthermore, district energy is a utility-scale approach to ensuring that systems are operated and maintained to continue delivering the energy efficiency and the corresponding greenhouse gas reductions over the decades-long life of the district energy system. In contrast, individual building HVAC systems do not have the same energy efficiency and greenhouse gas reductions in those instances where maintaining optimal performance may not be a core expertise or priority of the customer.

As discussed in the next Section of this Application, SMUD's commitment to environmentally beneficial, efficient, and reliable energy services is in harmony with and will further State and local energy policies and efforts to address climate change.

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As discussed in the next Section of this Application, SMUD's commitment to environmentally beneficial, efficient, and reliable energy services is in harmony with and will further State and local energy policies and efforts to address climate change.

## B. State and Local Policies Favor Implementation of Thermal Energy Services to Address Climate Change Challenges and Energy Needs

### 1. Climate Change Poses a Tremendous Environmental Challenge

Climate change presents significant environmental and economic challenges. California's greenhouse gas emissions are substantial and growing. (2007 Integrated Energy Policy Report (California Energy Commission), p. 5.[10]) Resolution of greenhouse gas emissions issues is currently at or near the top of the State's agenda, and likely will continue in that position over the foreseeable future. California has a strong history as a leader in clean energy and energy efficiency and has implemented many regulatory programs to manage energy use and reduce carbon emissions in the energy industry. These programs include energy efficiency, renewable portfolio standards, demand response programs, and building and appliance standards.

Notably, the State has a goal of obtaining cost effective energy efficiency through a mix of utility and business programs, including new programs, incentives, delivery systems, and technologies. (*See, e.g.*, SB 1037 (Ch. 366, Stats. 2005); AB 2021 (Ch.734, Stats. 2006).) Looking forward, clean energy and energy efficiency programs will play an important role in helping California achieve its greenhouse gas reduction goals. Improving the efficient delivery of clean energy through the implementation of district energy fits well with state goals and policies for addressing climate change.

### 2. California's Legislature and State and Local Agencies Seek to Reduce Greenhouse Gas Emissions

#### a. State Efforts to Reduce Greenhouse Gas Emissions

California has taken important actions designed to reduce greenhouse gas emissions. In 2006, the Global Warming Solutions Act of 2006 (AB 32) was enacted (Núñez, Chapter 488, Statutes of 2006). AB 32 requires that California's greenhouse gas emissions be reduced to 1990 levels by 2020. The California Air Resources Board (ARB) is the lead agency for implementing AB 32. The ARB has already developed a list of discrete early actions to begin reducing greenhouse gas emissions, compiled an inventory of historic emissions, established greenhouse gas emission reporting requirements, and set the 2020 emissions limit. ARB recently developed a Scoping Plan outlining California's strategy for achieving the 2020 limit.

Among the measures recommended to reduce emissions of greenhouse gases are increased energy efficiency efforts, assessments of large industrial sources for emission reduction potential, and an expanded use of green building practices. (Climate Change Proposed Scoping Plan (ARB) (Scoping Plan), pp. 41-44, 54-56, and 57-59, December

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[10] The 2007 Integrated Energy Policy Report is available on the CEC's web site: http://www.energy.ca.gov/2007publications/CEC-100-2007-008/CEC-100-2007-008-CMF.PDF.

2008.[11]) District energy has the potential to achieve emission reductions in each of these areas. By consolidating the boilers and chillers used to produce hot and cold water, the production of thermal energy becomes more efficient, reliable, and cost effective. To the extent combined heat and power is used, a more efficient use of fuel results, as described in Section III.C, below. District energy may be suitable at new large industrial facilities. For example, use of on-site CHP may reduce emissions of greenhouse gases compared to the traditional combination of electricity deliveries from central station power plants and use of site specific boilers. Finally, by coordinating district energy with new development, including commercial and industrial uses, and technical, educational and health care campuses, and other mixed uses, district energy will help these new developments meet or exceed green building standards and contribute to Leadership in Energy and Environmental Design (LEED) certifications for new construction.[12]

Provision of thermal energy services using district energy also fits within the tenets of the State's Preferred Loading Order as described in the 2003 Energy Action Plan (EAP) and reiterated in EAP II. (California Energy Commission, CPUC, CPA Energy Action Plan, Spring 2003; and EAP II, CEC and CPUC, September 21, 2005.[13]) The loading order specifies a strategy that calls for, in order of priority, investments in energy efficiency and demand response, meeting new generation needs first with renewable resources and distributed generation, then clean fossil fuel generation, and improving the bulk transmission and distribution infrastructure. (EAP, p. 4.) District energy and CHP (which is a form of distributed generation), meet the top priorities of this plan. They do so first by aggregating heating and cooling loads and serving those loads from a central utility plant where more cost effective, high efficiency heating and cooling equipment are located; and second, by using CHP distributed generation to capture waste heat to offset heating and cooling that would otherwise be provided by additional boilers and chillers.

SMUD's proposal to activate its latent power so that it may provide thermal energy services through district energy at appropriate locations is entirely consistent with California's evolving strategies for improving energy efficiency and reducing greenhouse gas emissions.

### b. Local Efforts to Reduce Greenhouse Gas Emissions

Local agencies in the Sacramento region are also committed to reducing greenhouse gas emissions, consistent with State policies and goals. The Sacramento Area Council of Governments (SACOG) and Valley Vision, a nonprofit association working to secure the social, environmental, and economic health of the Sacramento region, are responsible for the "Sacramento Region Blueprint" (Blueprint), which addresses issues of regional

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[11] The Climate Change Proposed Scoping Plan is available on ARB's web site: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

[12] The LEED Green Building Rating System is a third party certification program and the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. It encourages and accelerates global adoption of sustainable green buildings. (*See* http://www.usgbc.org.)

[13] The 2003 EAP and EAP II are available on the CEC's web site: http://www.energy.ca.gov/energy_action_plan/2003-05-08_ACTION_PLAN.PDF and http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF.

growth, emphasizing transportation, housing, and land use. The Blueprint is focused on preservation of air quality generally, through transportation and land use planning. SB 375, enacted in 2008 and based largely on the Sacramento region's Blueprint, promotes sustainable community strategies. (Chap. 728, Stats. 2008 (Steinberg).) Both the Blueprint and SB 375 identify planning strategies that will help meet greenhouse gas reduction targets set pursuant to AB 32.

The County of Sacramento has stated its intent to comply with AB 32. To that end, the County undertook an inventory in 2008 to create a baseline for greenhouse gas emissions in preparation for future efforts to comply with AB 32. The County's efforts are ongoing.

The City of Sacramento also intends to meet AB 32 goals and recently issued a sustainability plan, "Creating a Sustainable City: 2008 Implementation Plan" (2008 Sustainability Plan).[14] The 2008 Sustainability Plan includes a number of policy goals, including goals relating to air quality, energy, and climate protection. The key goals relate to climate protection and air quality. The City plans to meet the intent of AB 32 for City operations, the community of Sacramento, and the SACOG region by working with community partners. (2008 Sustainability Plan, p. 10.) The City seeks to achieve carbon neutral fossil fuel energy use within City limits. (*Id.* at pp. 9-10.)

To meet these goals, the City is considering requiring development projects that result in substantial air quality impacts (*i.e.*, exceeding the Sacramento Metropolitan Air Quality Management District ROG and NOx emission limits) to incorporate design or operational features that result in a reduction in emissions equal to 15% below the level that would be produced by an unmitigated project. (Sacramento 2030 General Plan, ER 6.1.3.[15]) The City is also considering promoting (1) compact, mixed-use, pedestrian-friendly, and transit-oriented development, and (2) energy efficient building design and site planning. (*Id.* at ER 6.1.9.) Finally, the City is considering review of proposed development projects to ensure projects incorporate feasible measures that reduce emissions through project design. (*Id.* at ER 6.1.11.)

The City also seeks to foster energy independence, by significantly reducing the use of fossil fuels and replacing or renovating obsolete or resource inefficient infrastructure. (2008 Sustainability Plan, p. 9.) The City intends to improve "green" building standards and implement a program, developed with community partners, including SMUD, that will increase development of LEED certified projects. (*Id.* at pp. 14, 17.)

District energy has the potential to play an important role in achieving local goals and plans promoting clean, energy efficient development. Activation of SMUD's latent power for thermal energy service, in addition to clean, reliable, and efficient electric service, will enable SMUD to enhance its role as a community partner, committed to working with local governments to address the climate change challenge.

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[14] The 2008 Sustainability Plan is available on the City of Sacramento's web site: http://www.cityofsacramento.org/generalservices/sustainability/documents/SMPFinal.pdf.

[15] The Sacramento 2030 General Plan is available on the City of Sacramento's web site: http://www.sacgp.org/.

### C. CHP Provides Additional Benefits

As described in Section III.B.2.a, above, California has long supported and encouraged CHP. CHP plants use one fuel source to produce two useful outputs, electric energy and thermal energy. CHP plants capture waste heat from the electric generation process for use in producing thermal energy. Thus, CHP results in more efficient energy production, compared to standard power plants that produce electricity only. Because CHP plants may be located throughout an area where electric service is provided, they improve electric service reliability – fewer customers are affected by an outage at a CHP facility than at a large central station power plant.

The ARB's Scoping Plan recognizes that "[t]he widespread development of efficient CHP systems would help displace the need to develop new, or expand existing power plants." (Scoping Plan, p. 43.) Accordingly, the Scoping Plan "sets a target of an additional 4,000 MW of installed CHP capacity by 2020, enough to displace approximately 30,000 GWh of demand from other power generation sources" as a recommended action for achieving greenhouse gas emission reductions. (*Id.*)

Various other organizations have recognized the potential of CHP in terms of contributing to reductions in carbon emissions. For example, in March 2006, the Climate Action Team identified encouraging installation of CHP as a strategy important to reducing greenhouse gas emissions. (*See, e.g.*, Climate Action Team Report to Governor Schwarzenegger and the Legislature, Climate Action Team (March 2006) p. 62.[16]) The Sierra Club has also analyzed available and potential options for reducing the use of fossil fuel and emissions of greenhouse gases. The Sierra Club has called out distributed clean energy, including CHP, as a "key approach[] for immediate action." (2006 Energy Resources Policy, Sierra Club, pp. 7-8.[17])

Because of the environmental benefits of CHP, SMUD expects the support for CHP will continue to grow as strategies for addressing climate change evolve. Thus, use of CHP to provide district energy has significant potential for helping the State and region achieve its goals.

### D. District Energy Creates Other Wide-Ranging Benefits that Would Be Otherwise Unattainable

As described throughout this Application, the provision of thermal energy services using district energy systems is an environmentally sound, energy efficient, and cost effective way of heating and cooling buildings. In addition, district energy systems provide other important benefits.

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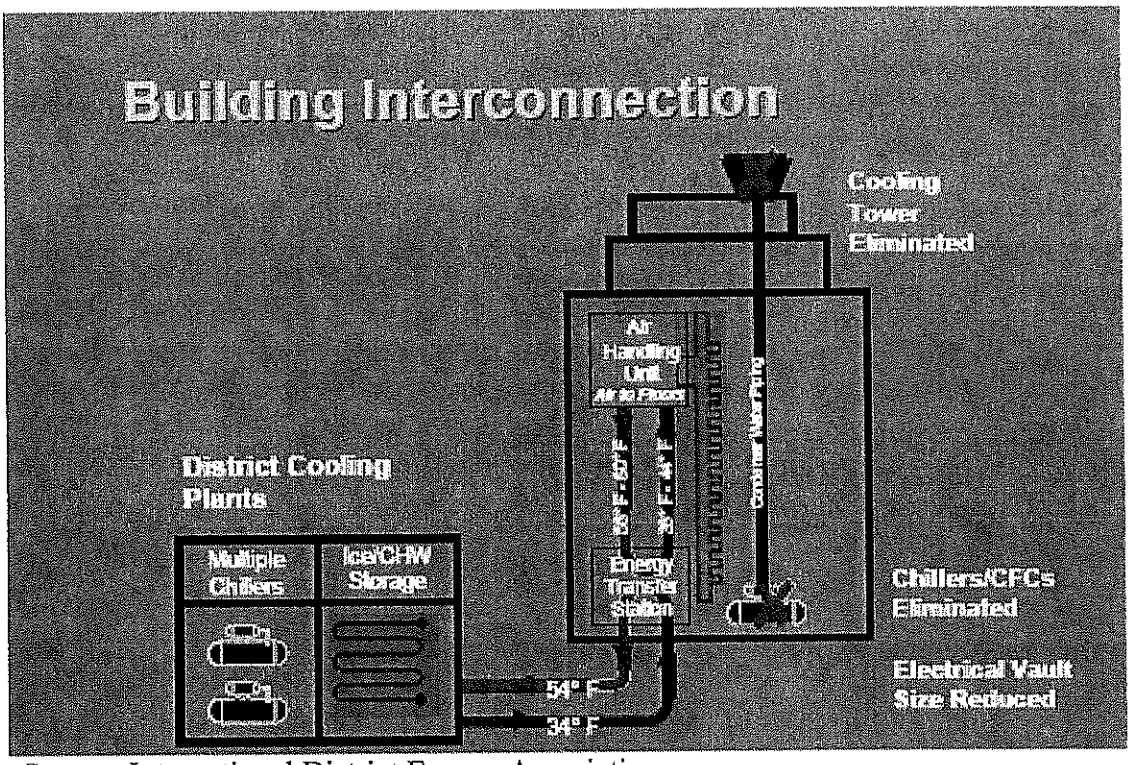
[16] The Climate Action Team Report is available on the State of California web site: http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF.

[17] The 2006 Energy Resources Policy is available on the Sierra Club's web site: http://www.sierraclub.org/policy/conservation/energy.pdf.

Because district energy centralizes the generation of thermal energy, natural gas fuel and refrigerant are no longer needed at each building site. Fewer refrigerants used and stored at each building also reduces the risk of leaks and storage concerns that, while qualitative, reduces environmental risks.

The reduction in carbon emissions that results from district energy can be factored into LEED green building certification ratings, resulting in additional LEED certified structures in SMUD's service territory. Other environmental benefits of district energy include reductions in vibration and noise associated with heating and cooling equipment in each occupied building. From an aesthetic perspective, district energy eliminates the visual impact of packaged air conditioning units, cooling towers, and cooling mist. The following graphic illustrates the reduction of in-building equipment.




Source: International District Energy Association

There is a corollary benefit from removing cooling towers or package air conditioning units from building roof tops. It allows more unobstructed roof space, which in turn creates excellent opportunities for installation of photovoltaic systems to increase renewable power generation locally and to further reduce carbon emissions. Roof obstructions on commercial and high rise buildings presently are key barriers to photovoltaic system deployment.

District energy has a number of positive economic development impacts. Building developers gain interior and exterior square footage and save on capital expenditures by not installing traditional boiler and chiller plants or packaged air conditioning units traditionally required to serve building space heating and cooling loads. Mechanical rooms can be downsized by the elimination of larger traditional equipment. Additionally,

building owners and tenants benefit from reduced operating and maintenance costs and expenses related to equipment replacement. Building tenants do not need to retain higher skilled and higher paid maintenance staffs to maintain boiler and chiller plants.

District energy is highly reliable. District energy professionals operate the district energy systems 24/7 and backup systems are readily available. According to the International District Energy Association, district energy systems operate at a reliability of 99.999%, thereby providing enhanced reliability over conventional heating and cooling equipment.

### E. Conclusion: District Energy is Needed to Help Achieve These Important Goals

The table below illustrates the benefits a district energy system would bring within SMUD's territory – highlighting the increased efficiency, greenhouse gas reductions, peak load reduction, and criteria pollutant reductions associated with district energy. The district energy system used in the table includes a 5 MW cogeneration facility and thermal energy storage, and has a heating capacity of 130 million BTUs per hour and a cooling capacity of 9,000 tons.

**Sample SMUD Project**
**Annual Benefits Comparison**

| Draft Comparison | Traditional Energy Services | District Energy Services |
|---|---|---|
| Natural Gas Consumption (MMBtu/year)[1] | 1,059,178 | 969,975 |
| Equivalent Ghg Emissions (metric tons/year)[1] | 56,662 | 51,908 |
| Cooling Peak Electrical Usage (MW) | 18.8 | 1.9 |
| NOx Emissions (lbs./year)[1] | 16,309 | 15,150 |

[1] Compared to Cosumnes Power Plant

As the discussion in this Section shows, the provision of thermal energy services using district energy, including CHP and/or thermal energy storage where appropriate, all support key elements of State, regional, and local goals and policies, as well as SMUD's corporate strategies, goals, and policies, relative to greenhouse gas reduction, energy efficiency, cost effective energy, and improved energy system reliability. Thus, SMUD's

proposal to activate its latent power to be able to provide thermal energy services at appropriate locations within its existing service boundaries is timely and an important component of California's evolving energy landscape.

## IV. PLAN FOR SERVICE

### A. Overview

The CKH Act requires that a resolution of application to activate a latent power include a plan for service pursuant to CKH Act section 56653. (Gov. Code, § 56824.12(a).) Section 56653 requires that a plan for service include (1) an enumeration and description of the service to be extended to the affected territory, (2) the level and range of the service, (3) an indication of when the service may feasibly be extended, (4) an indication of any improvements or upgrades, or other conditions that would be imposed if the authority to exercise a latent power is granted, and (5) information with respect to how the proposed service will be financed.

Government Code section 56824.12(a) requires that a plan for service *also* include (1) the total estimated cost to provide the new service within the district's jurisdictional boundaries, (2) the estimated cost of the new service to customers within the district's jurisdictional boundaries, (3) an identification of existing providers, if any, of the new service proposed to be provided, and the fiscal impact to the customers of any such providers, (4) a summary whether the new service will involve activation of a latent power, (5) a plan for financing the establishment of the new service within the district's jurisdictional boundaries, and (6) alternatives to the establishment of the new service within the district's jurisdictional boundaries.[18]

Subject to limited exceptions, LAFCo is not to approve a proposal to activate a latent power unless it determines that the applicant district has sufficient revenues to carry out the new service. (Gov. Code §, 56824.14(a).) LAFCo may approve a proposal to activate a latent power if it determines the district will not have sufficient revenues if LAFCo conditions its approval on the concurrent approval of sufficient revenue sources pursuant to CKH Act section 56886 (incurring new indebtedness, issuing bonds, etc.). As described in Section IV.B.5, SMUD will ensure sufficient revenues exist to carry out the proposed thermal energy service.

Following is SMUD's plan for service, which would be implemented if LAFCo approves this Application and SMUD subsequently identifies appropriate locations for district energy systems.

### B. Elements of Plan for Service

#### 1. Enumeration and Description of Services to be Provided

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[18] LAFCo's Application Form also asks for an indication of whether the proposal territory is, or will be, proposed for inclusion within an existing or proposed improvement zone/district, redevelopment area, assessment district, or community services district. (LAFCo Application Form, p. 16.) Here, the answer is no. As described herein, SMUD seeks the authority to be able to provide thermal energy services at appropriate locations throughout its existing service boundaries.

SMUD seeks to activate its latent power to be able to provide retail thermal energy services at appropriate locations within its existing service territory through district energy systems. District energy systems can provide different kinds of thermal energy services, including chilled water for space cooling; hot water for space heating and domestic hot water; and/or steam for space heating, domestic hot water, and industrial processes, such as sterilization in hospitals, food processing, and other processes. In a district energy system, the different types of thermal energy are produced at a central plant. Within the central plant, large-scale natural gas boilers and electric chillers are used to produce the hot water, cold water, and/or steam that is then piped to buildings in the district through a network of pipes buried in city or county streets, in public rights-of-way to the extent feasible. District energy systems may also include CHP and/or thermal energy storage. In general, district energy systems have a useful life of approximately 20 to 30 years. (*See also* Section II.B, above, where district energy is described in detail.)

Ultimately, the nature of the loads (*i.e.*, customer uses and energy demands) to be served and the economics of district energy at a particular proposed development will determine whether and/or which services may be provided. SMUD does not currently own or operate district energy systems at customer locations.[19] In the future, SMUD could offer any or all of the described services, alone or in various combinations, depending on the specifics of customer requirements.

The configuration of district energy systems will vary based on application-specific considerations, including customer requirements, and technical and economic feasibility. The following table provides examples of some of the types of uses where district energy might be suitable, and the thermal services that might be provided within those uses.

[19] As described in Section IV.B.2, below, SMUD owns and operates a district energy system at its headquarters location.

| Sample District Energy Systems | | | | |
|---|---|---|---|---|
| **Type** | **District Energy Equipment** | **Services** | **End Uses** | **Buildings** |
| College Campus | Electric chillers, natural gas boilers, thermal energy storage, cogeneration[20] | Chilled Water | Space Cooling | Classrooms, dormitories, laboratories, sports facilities, offices |
| | | Steam | Space heating, domestic potable hot water, laboratory uses | Classrooms, dormitories, laboratories, sports facilities, offices |
| Industrial Park | Electric chillers, natural gas boilers, thermal energy storage, cogeneration | Chilled Water | Space Cooling | All buildings |
| | | Steam | Space heating, domestic potable hot water, industrial processes | All buildings |
| Business Park | Electric chillers, thermal energy storage | Chilled Water | Space Cooling | Office buildings |
| Downtown Business District | Electric chillers, thermal energy storage | Chilled Water | Space Cooling | High-rise office buildings |
| Mixed Use Development | Electric chillers, natural gas boilers, thermal energy storage, cogeneration | Chilled Water | Space Cooling | High-rise office buildings, retail, residential, food services, hotels |
| | | Hot Water | Space heating and domestic potable hot water | High-rise office buildings, retail, residential, food services, hotels |

To the extent SMUD provides thermal energy services, it will do so pursuant to a SMUD tariff and/or an appropriate contract. The tariff and/or contract will contain the terms and conditions applicable to the provision by SMUD and the receipt by the customer of thermal energy services. Such terms and conditions will include, but not be limited to, the following matters:

- Identification of the thermal energy services to be provided by SMUD
- The quality of the thermal energy services to be provided by SMUD, consistent with prudent utility practice

[20] Where district energy systems include cogeneration, the electric energy generated by the cogeneration plant would be delivered to retail electric customers throughout SMUD's service boundaries.

- The requirements and obligations applicable to the extension of service by SMUD and the connection of customer facilities to SMUD facilities
- The fixed and variable charges SMUD will levy for the specified thermal energy services
- Delineation of SMUD's and the customer's equipment and service obligations, including metering and meter testing
- The billing process
- The dispute resolution process

The terms and conditions will also provide for sufficient rights of way for SMUD to maintain the SMUD electrical conduits, heating, and cooling pipes, and other apparatus installed on the customer premises in connection with the delivery by SMUD of thermal energy services. Additionally, the terms and conditions will specify SMUD's and the customer's maintenance responsibilities on SMUD's and the customer's sides of the usage recording meters, including notice requirements for service interruptions necessary for maintenance.

## 2. Level and Range of Services

### a. Description of Services

SMUD seeks to be able to provide thermal energy services to retail customers at appropriate locations within its existing service territory. The level and range of these services will depend on the specific customer loads (*i.e.*, customer thermal energy uses and requirements) in the locations to be served. For example, in a mixed use development comprised of commercial, retail, and residential customers, services may include chilled and hot water for space conditioning and domestic hot water. Alternatively, in an industrial park type application where office and industrial loads may coexist, services may include chilled water and steam services to serve space conditioning, domestic hot water, and industrial heat processes. In a location where office space dominates the loads, service may include only chilled water services for cooling purposes.

In all cases, SMUD will strive to provide space conditioning services that are equal to or better than traditional services customers can attain on their own with privately installed and operated boilers and chillers, from reliability, efficiency, and price perspectives. As noted earlier, district energy systems operate at a reliability of 99.999%, thereby providing enhanced reliability over conventional heating and cooling equipment, according to the International District Energy Association. Moreover, energy efficiency gains will be realized through district energy systems due to the centralization of heating and cooling equipment coupled with dedicated, expertly trained staff to operate and maintain the central utility plant equipment over its life.

### b. Best Practices

SMUD will use best utility practices in the design, construction, and operation of the central district energy plant and hot/cold water distribution systems to ensure high levels of reliability and safety are met for its employees and customers. Additionally, all applicable laws, ordinances, regulations, and standards will be adhered to in design, construction, and operation of the district energy system. SMUD will replicate its processes used for existing electrical services to address safety, outage management, and emergency preparedness, and customer service. SMUD has a long, successful track record in these areas from which to leverage best practices.

### c. Safety and Emergency Preparedness

In general, the safety record of district energy compares favorably to other utility services.[21] Security and safety at a central district energy system plant starts with a Vulnerability and Risk Assessment (VRA), the results and recommendations of which will be incorporated in the final central plant design. Details of the VRA can only be developed once the specific parcel and design concept is initiated, but the VRA generally involves lighting, fencing, access control, alarms, and surveillance. SMUD will also develop and maintain a Physical Security and Response Plan (Plan) to address the potential for earthquakes and severe weather, such as wind and floods. The Plan would also list steps that are taken in the event of a nearby, but indirect, incident such as a vehicle accident that has the potential to affect the central plant or its ancillary facilities, such as the heating and cooling loop. The Plan would also address vandalism and burglary prevention, and steps for central plant staff and operators to take in case of bomb threats, trespass, or civil disturbance.

SMUD will also design district energy systems in a manner that minimizes impacts to the environment. District energy systems will meet all State and local building codes, including, where applicable, review and approval of system plans by the Chief Building Official or other appropriate official. A spill prevention control and countermeasure plan will be developed for any threshold materials used in the central plant, and will include response scenarios to address circumstances such as a broken pipe in the district heating and cooling loop. An emergency response plan will also be developed and reviewed with local fire officials to address spills (including any spills involving hazardous materials), leaks, fires, smoke, and medical emergencies.

[21] *See, e.g.*, International District Energy Association website: http://www.districtenergy.org/index.asp.

### d. Quality of Service

SMUD will endeavor to maintain a quality of electrical service (by voltage, power factor, and frequency) and thermal service (by pressure, temperature, and moisture content), within reasonable limits. If, in SMUD's opinion, there is an interference with that quality of service as a result of customer's noncompliance with any SMUD provisions, SMUD may require the customer to provide at its own expense such special equipment and services as required. SMUD may provide such equipment if customer pays the net estimated installed cost of such equipment service.

### e. Customer Service

SMUD provides monthly paper and/or online bills for electricity and related services to approximately 523,000 residential customers and 67,000 commercial customers. SMUD customer service representatives are available to assist customers with billing questions, service startup, and other services during regular business hours. SMUD provides a separate telephone number to assist customers with outage reporting and information. These same processes will be used for thermal energy services.

### f. SMUD's Experience

SMUD has a proven track record in the operation of thermal energy systems, central utility plants, and CHP systems. Since 1994, SMUD has operated a district energy system with a central plant at its headquarters campus in Sacramento. The central plant provides hot water for space heating and chilled water for space cooling to approximately 350,000 square feet of office space in four buildings. The cooling plant consists of two rotary screw chillers, one at 200 tons and one at 600 tons, and is equipped with an ASHRAE 15 compliant refrigerant monitoring system, including the appropriate detection, alarming, and exhaust. The heating plant consists of four natural gas hot water boilers, two at 1million BTU/hr and two at 5million BTU/hr.

There is also a 13,000 ton-hour chilled water thermal energy storage (TES) tank. In general, chilled water is supplied to SMUD's headquarters campus during the day from the TES tank. The chillers operate only at night to recharge the TES tank and serve small nighttime loads. The chiller plant has an overall efficiency of less than 0.7 kW/ton, which helped SMUD achieve a LEED Platinum certification for SMUD's Customer Services Center.

This district energy system consistently operates at a high level of efficiency, safety, and reliability. Operation and maintenance is performed almost entirely by SMUD personnel.

Beginning in 1995, SMUD began operating three utility grade cogeneration plants in the SMUD service territory through various joint powers authorities (*see* footnote 6). The plants were authorized pursuant to the California Energy Commission's power plant siting process. The three plants have a total peak power capacity of 423 MW. They produce electricity and steam, and have a history of reliable operation. The electricity is fed into the SMUD system-wide power grid to serve retail electric customers within

SMUD's service boundaries. Steam from the plants is piped to a manufacturing thermal host adjacent to each of the plants—Carson Ice Company, Procter and Gamble, and Campbell Soup Company.

### g. Other Resources

SMUD also looks to other utilities and trade organizations that serve, support, or implement district energy to understand current best practices. For example, SMUD has been consulting informally with Austin Energy in Austin, Texas, which owns and operates district cooling, district heating and cooling, CHP, and thermal energy systems.

Additionally, SMUD is a member of the International District Energy Association (IDEA), which is a nonprofit trade association founded in 1909 and governed by a 20-member board of directors.[22] IDEA fosters the success of its members as leaders in providing reliable, economical, efficient, and environmentally sound district energy services. Its vision is to promote energy efficiency and environmental quality through the advancement of district heating, district cooling, and CHP.

IDEA represents nearly 700 members who are district heating and cooling executives, managers, engineers, consultants, and equipment suppliers from 12 countries. Association members operate district energy systems owned by utilities, municipalities, hospitals, military bases, and airports in 38 of the 50 United States - and more are in the works in the U.S. and around the world. The largest district heating system in the United States, owned by Consolidated Edison of New York, is an IDEA member.[23] IDEA provides a forum for district energy professionals to exchange information on regular and timely basis.[24]

## 3. Indication of When Services Can Feasibly be Extended

SMUD could begin planning and installing district energy systems in appropriate locations as soon as practicable upon (a) receiving authorization from LAFCo, and (b) subsequent identification of an appropriate potential system and agreement with the involved developer or customer. SMUD is unable to identify specific projects at this time, but will identify appropriate new developments and/or respond to developer requests. Development of such projects, including any necessary permitting or CEQA review, will occur on a project by project basis. (*See also* Sections II.B.3 and IV.B.6.)

## 4. Improvements and/or Upgrading of Facilities

SMUD expects that in most cases, district energy facilities will be installed in coordination with new development proposed by others, thereby minimizing or avoiding construction impacts. In other words, district energy projects will follow new

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22 IDEA web site: http://www.districtenergy.org/.

23 Consolidated Edison has supplied steam heat to some of New York's most famous landmarks, including the Empire State Building, Grand Central Terminal, and Rockefeller Center.

24 IDEA web site (http://www.districtenergy.org/mission.htm), accessed March 4, 2009.

development. Thus, there will be little, if any, need to upgrade existing structures, roads, sewer, water, or other facilities to accommodate district energy.

However, there are examples around the U.S. where utilities have installed district heating or cooling systems to serve existing city cores because it was economic to do so. Should such opportunities arise within SMUD's service territory where economics and environmental benefits are favorable to do so, SMUD may install a district energy system. In these instances, which SMUD expects will be infrequent, SMUD will need to install hot and/or cold water distribution piping in city streets and construct a central utility plant. Coordination with city and county planning departments will be required to align with existing structures such as sewer, water, and electrical infrastructure to minimize disruption as much as possible.

District energy systems have predominately used natural gas to generate heated water and steam, and electricity to produce chilled water. SMUD anticipates this will also be the case within its service territory. Since PG&E is the natural gas service provider in SMUD's service area, SMUD anticipates it will become a PG&E natural gas customer with respect to fuel for most district energy projects. However, as California moves forward in the future to reduce its carbon emissions, it is possible that SMUD could pursue alternative fuel sources, including renewable fuels, to fuel district energy systems. As noted earlier, SMUD has adopted a Sustainable Energy Supply goal for 2050. To attain this aggressive carbon reduction goal, SMUD may seek fuel sources such as biogas from landfills, anaerobic digestion of food and municipal solid wastes, or other sources to fuel its district energy systems with carbon neutral fuels.

District energy systems require a water supply for central plant operations such as cooling towers, boilers, and chillers. In general, the water required for central plant operations over the life of a district energy system will be less than or comparable to the life cycle water required for traditional cooling towers, boilers, and chillers installed at individual buildings. District energy systems also require water for the initial charging of the hot and chilled water distribution systems. However, once charged, a district energy water distribution system will need little makeup water since it is a closed loop system. The amount of water required varies between different sized district energy systems and depending on whether thermal energy storage is included. The following table compares (a) the amount of water that would likely be required to initially charge a larger district energy system serving a mixed retail, commercial, and residential development and during the life cycle of system cooling tower, boiler, and chiller operations, to (b) the amount of water that would likely be required during the life cycle of traditional energy systems located at individual buildings. Notably, the amount of water required to initially charge the district energy thermal distribution system is only about 0.1% of the total life cycle water use.

| Comparative Water Usage (Acre-feet) for a Mixed-Use District Energy System | | |
|---|---|---|
| | District Energy System | Traditional Energy Systems |
| Initial Thermal System Charging | 15 | - |
| Life Cycle Water Usage | 13,887 | 13,902 |
| Total | 13,902 | 13,902 |

Implementation of district energy projects will not result in a loss of customer water connections by local water suppliers. SMUD will become a new water customer at district energy locations and anticipates adequate water supply to be available for district energy.

A side benefit of implementing CHP in conjunction with district energy systems is the potential for a net reduction in water consumption relative to water consumption for traditional electricity production. In a recent study published by the Oakridge National Laboratory, it was noted that tremendous amounts of water are used for cooling central station electric power generation plants.[25] Nearly a half gallon of water is lost to evaporation in cooling towers for every kWh of electricity consumed at the point of use. CHP recovers thermal energy from the electricity generation process and uses it for generating hot or chilled water, thus avoiding the need for condensers and cooling towers. The result is much lower water consumption for cooling purposes compared to central station electric power generation.

### 5. Information as to How Services will be Financed

SMUD anticipates using traditional debt financing for the capital expenditures associated with developing a district energy system. SMUD's underlying credit ratings of "A" from Standard & Poor's and Fitch and "A2" from Moody's provide SMUD with full access to the credit markets. It is SMUD's policy to maintain credit ratings that ensure access to capital markets.[26] SMUD considers this requirement in setting rates. Sources of capital include revenue bonds and bank secured variable rate debt. In addition to its borrowing capacity, SMUD also makes use of internally generated cash to finance capital projects with a goal of funding 20% of capital expenditures with cash generated from operations. Other capital sources may also include developer contributions commensurate with the developer's benefits. With respect to district energy, such benefits could include the reduced and/or avoided costs of heating and cooling systems normally installed in large buildings and the resulting increase in usable space available for lease.

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[25] Combined Heat and Power, Effective Energy Solutions for a Sustainable Future, Oakridge National Laboratory, publication number ORNL/TM-2008/224, December 1, 2008, p. 14.

[26] SMUD has adopted a strategic directive emphasizing the importance of maintaining access to credit markets. (Access to Credit Markets, SMUD Policy Number SD-3.)

Debt service and other ongoing costs, including fuel and operating and maintenance costs, will be recovered through district energy customer rates. Additionally, avoided generation, transmission, and distribution capacity costs may be considered as funding sources if they would otherwise be contributed by SMUD ratepayers using a conventional plan of service. If applicable, avoided environmental costs, such as costs to mitigate SMUD's carbon footprint, may be considered as sources of funds for district energy projects.

The costs and benefits derived by the provision of thermal services by SMUD to customers will primarily be borne by and directed to customers receiving those thermal services. To the extent that a district energy system benefits SMUD customers outside of a district energy system district, the costs and benefits of such system will flow to all SMUD customers.

### 6. Total Estimated Cost to Provide the New Services Within SMUD's Service Boundaries

It is difficult to estimate the total costs to provide thermal energy services within SMUD's service territory until specific projects are identified. Costs will be dictated by the type of district energy system (*e.g.*, chilled water, hot water, steam), the size of the loads to be served, the geographical expanse of the district energy system, inclusion of CHP and/or thermal energy storage, and other factors.

For illustrative purposes, SMUD has estimated the cost of a large-scale district energy system designed to serve a large area (over 200 acres), with retail, commercial, office, high-density residential, and hotel uses. Such uses could include over one million square feet of conditioned space and thousands of residential units. It is possible that nearby existing loads could be served by this system. In this scenario, a district energy system that includes CHP and thermal energy storage could cost approximately $100 million dollars to build. The costs to construct and operate this illustrative project would be recovered through rates, as described in Section IV.B.7, below.

SMUD will evaluate the economic feasibility of each potential district energy system. SMUD will only move forward with systems that are beneficial for all SMUD customers, *i.e.*, the customers in the potential district and other SMUD customers as well. If a potential system is not beneficial for all customers, SMUD will not pursue it. In determining whether a particular system is beneficial for its customers, SMUD will consider various factors throughout the life of the potential system, including thermal load characteristics and expected growth, trends in energy costs and rates, and environmental and reliability benefits. (*See also* Section II.B.3, above.)

### 7. Estimated Cost of the New Service to SMUD's District Energy Customers

Each district energy system will be designed, constructed, operated, and maintained to meet the requirements of the customer uses in the development district where it provides heat and cooling. SMUD will recover the costs of developing, constructing, owning, and

operating district energy systems from SMUD customers, as appropriate, through rates. (*See also* Section IV.B.5, above.) This may involve a public ratesetting proceeding to establish rates for thermal energy services. As noted in the preceding section, SMUD will only develop district energy systems that it determines are beneficial for district energy customers and other SMUD customers.

Rates for heating, cooling, steam, and any other thermal energy services will be designed to achieve the following goals:

- To accurately transmit to the customer the cost of the thermal energy delivered and used
- To encourage energy efficiency and conservation
- To present information to the customer in a readily understandable format
- To equitably allocate costs and benefits across all pertinent customer classes

In general, SMUD will construct, own, and maintain all conduits and piping necessary to provide service to a district. In some cases developers may be required to pay costs where conduit and piping requirements exceed a certain distance.

### 8. There Are No Providers of Retail Thermal Energy Service Within SMUD's Service Boundaries

Government Code section 56824.12(a)(3) requires that a plan for service include an identification of existing service providers, if any, of the new service proposed to be provided and the potential fiscal impact to the customers of any such existing providers.

No local government or other entity presently provides retail thermal energy service within SMUD's service boundaries.[27] Thus, there is no potential for customers of other providers to be affected by activating SMUD's power to provide retail thermal energy service within its service boundaries. If LAFCo authorizes SMUD to exercise its latent power for thermal energy service, SMUD envisions it will be the exclusive provider of such service to retail customers within its service boundaries.[28]

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[27] Individual customers currently are allowed to serve their own loads using thermal energy and/or CHP facilities, and they may continue to do so even after LAFCo authorizes SMUD to activate its latent power to provide thermal energy services. Such individual customers generally may not provide such services to multiple customers unless they obtain authority to do so from the California Public Utilities Commission, or unless they are a publicly owned utility, like SMUD.

[28] SMUD is a political subdivision of the state and a "municipal corporation" deriving power from the California Constitution. (*Sacramento Municipal Utility District v. Pacific Gas and Electric Company* (1946) 72 Cal.App.2d 638; *also see Glenbrook Development Co. v. Brea* (1967) 253 Cal.App.2d 267, 275 (the term "municipal corporation" includes a municipal utility district).) Municipal corporations have broad powers to furnish their inhabitants with light, water, power, and heat. (Cal. Const., art. XI, § 9.) In addition to its Constitutional authority, SMUD derives its authority from the MUD Act. (Cal. Pub. Util. Code § 11501 *et seq.*) In *Grason Electric Company v. Sacramento Municipal Utility District*, (9th Cir.

### 9. The New Service Involves Activation of the Power to Provide the New Service

Government Code section 56824.12(a)(4) requires that a plan for service include a written summary of whether the proposed new or different function or class of services, within all or part of the jurisdictional boundaries of a district, will involve the activation of the power to provide the service, service function or class of service.

As explained herein, SMUD seeks to be able to provide thermal energy service at appropriate locations throughout its service boundaries. SMUD is authorized by section 12801 of the MUD Act to provide thermal energy service, however, it does not currently provide this service within its boundaries and has not done so in the past. Accordingly, SMUD's proposal to provide thermal energy service within its boundaries involves activation of the power to provide such service. Through this Application, SMUD seeks LAFCo approval to activate SMUD's power for thermal energy service within its service boundaries. SMUD does not propose to change its boundaries in connection with activation of a latent power.

### 10. Plan for Financing the Establishment of the New Service

Government Code section 56824.12(a)(5) requires that a plan for service include a plan for financing the establishment of a new service. SMUD's plan for financing the establishment of thermal energy services is set forth in Section IV.B.5, above, in compliance with Government Code section 56653(b)(5). SMUD does not repeat that information here.

### 11. Alternatives to the Establishment of the New Services

One alternative to the activation of SMUD's latent power for thermal energy service is to continue with the status quo. That is, customers will continue to meet their space conditioning, process heat, and domestic hot water needs using natural gas boilers and electric chillers, and packaged air conditioning and heating units, using electricity provided by SMUD, from its central station power plants or through contracts, or using natural gas purchased from PG&E. Customers could also continue to install customer-specific district energy systems (like the one at SMUD headquarters (*see* Section IV.B.2, above)). Under the status quo, the community would not realize the benefits of district energy, as described throughout this Application. Moreover, although there may be isolated district energy systems (*i.e.*, systems that serve only the installing customer and no others), such isolated installations would not maximize the benefits of the larger scale district energy systems that SMUD could develop after activation of its latent authority to provide thermal energy service.

Another alternative would be for another service provider to try to provide retail thermal energy service. This would likely be either another publicly owned utility authorized to provide heat/thermal energy service, or a public utility that has been granted a certificate

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1985) 770 F.2d 833, 838, the court considered these and other authorities and determined that SMUD was the exclusive provider of electric service within its service boundaries.

of public convenience and necessity by the CPUC authorizing it to provide thermal energy service. SMUD is not aware that any other such entity or entities have contemplated or are contemplating the provision of thermal energy service within SMUD's service boundaries.

## V. CONCLUSION

District energy systems will further State, regional, local, and SMUD goals and policies relating to climate change and the provision of environmentally beneficial, cost effective, efficient, and reliable energy service. District energy, both with and without CHP, furthers these goals and policies by utilizing centralized and efficient technologies to replace relatively less efficient and decentralized heating and cooling facilities. Activation of SMUD's latent power for thermal energy service will enable SMUD to help fill a vital need that has been identified by policymakers and regulators. SMUD respectfully requests LAFCo's approval of SMUD's proposal to activate its latent power for thermal energy service.

**RESOLUTION NO. 09-05-04**

**WHEREAS**, the State of California has a long history of promoting the conservation of energy and protection of the environment, through air quality regulation, including greenhouse gas emissions standards and policies, energy efficiency requirements, renewable energy standards, and natural resource conservation; and

**WHEREAS,** in conjunction with SMUD's overall purpose to meet its customers' electrical energy needs, SMUD's vision is to empower its customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower costs of service in the Sacramento region; and

**WHEREAS,** in furtherance of the State's and SMUD's goals and policies, SMUD has long been committed to being a leader in providing environmentally beneficial, cost effective, efficient, and reliable energy services; and

**WHEREAS,** SMUD's policies and programs regarding greenhouse gas reductions, renewable energy procurement, sustainable energy development, and efficient energy production and use are well-aligned with and promote the State's and SMUD's goals and policies; and

**WHEREAS,** as part of its ongoing efforts to improve the delivery of environmentally beneficial, cost effective, efficient, and reliable energy services, SMUD has investigated the feasibility of providing thermal energy services (*i.e.*, heat) through district energy systems at appropriate locations within its existing service boundaries; and

**WHEREAS,** SMUD will provide thermal energy services through a district energy system only if the system is beneficial for SMUD customers; and

**WHEREAS,** SMUD does not presently provide thermal energy services (*i.e.*, heat), although it is authorized to do so pursuant to Public Utilities Code section 12801; and

**WHEREAS,** SMUD has determined that this proposal is consistent with the adopted spheres of influence of the counties, cities, and district relevant to this change of organization; and

**WHEREAS,** SMUD has determined it prudent and in the best interests of its customers to activate its latent power to provide thermal energy services; and

**WHEREAS,** SMUD desires to undertake the proposal subject to the terms and conditions set forth in **Attachment B**, hereto; and

**WHEREAS,** the activation of SMUD's latent power to provide thermal energy service shall be made subject to Part 3 of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (the "CKH Act"), commencing with Section 56650 of the Government Code, and that Government Code section 56824.12 provides that SMUD shall initiate proceedings with the Sacramento County Local Agency Formation Commission ("LAFCo") by resolution of application and the filing of an application with LAFCo; and

**WHEREAS,** notice of intent to adopt this resolution of application requesting LAFCo initiate proceedings for a change of organization (*i.e.*, the activation of SMUD's latent power to provide thermal energy service), has been given, and this Board has conducted a public hearing based upon this notification; **NOW, THEREFORE,**

**BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:**

**Section 1.** The Board has carefully considered the information provided by staff and public comments on this issue and, based on the information and comments, finds that activation of SMUD's latent power to provide thermal energy services within its existing service boundaries will enhance SMUD's ability to make environmentally beneficial, cost effective, efficient, and reliable energy available to customers.

**Section 2.** The General Manager and CEO, or his designee, is authorized, on behalf of SMUD, to undertake activities reasonably necessary to activate SMUD's latent power to provide thermal energy services within its existing service boundaries, as more particularly described in **Attachment A** hereto, including, but not limited to, the filing of an application to activate a latent power which includes the terms and conditions set forth in **Attachment B** hereto, and any other necessary documents, with the Sacramento County LAFCo, sufficient to cause LAFCo to initiate proceedings on the proposal pursuant to the CKH Act.

**Section 3.** The contact persons with respect to SMUD's activities necessary to activate its latent power to provide thermal energy services within its existing service

boundaries are:

John DiStasio, General Manager & CEO
SMUD
6201 S Street
Sacramento, CA 95852

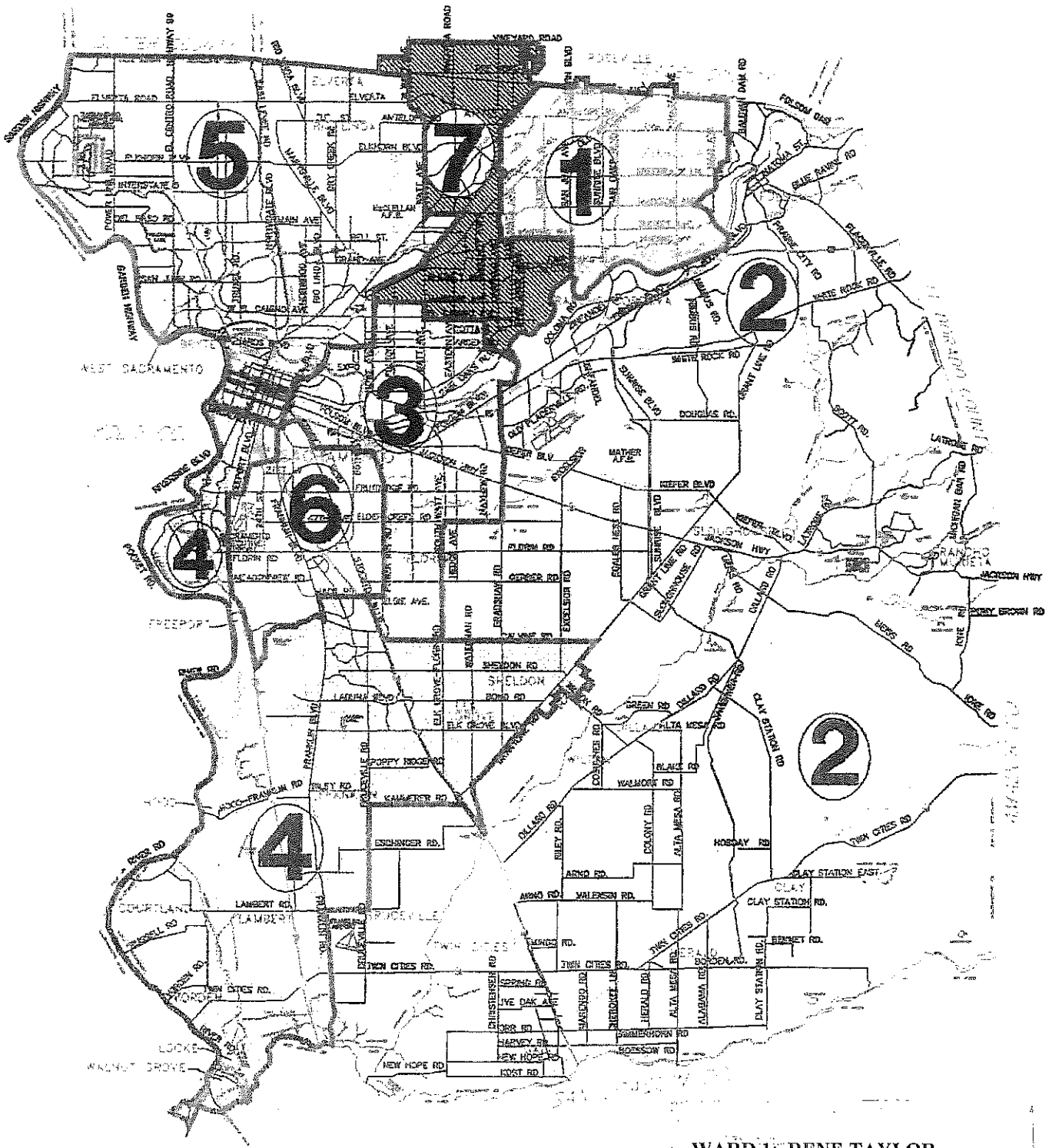
Arlen R. Orchard, General Counsel
SMUD
6201 S Street
Sacramento, CA 95852

Adopted: May 7, 2009

| INTRODUCED: DIRECTOR CARR | | | | |
|---|---|---|---|---|
| SECONDED: DIRECTOR SLATON | | | | |
| DIRECTOR | AYE | NO | ABSTAIN | ABSENT |
| POSNER | X | | | |
| SLATON | X | | | |
| TAYLOR | | | | X |
| BUI | X | | | |
| SHIROMA | X | | | |
| KERTH | X | | | |
| CARR | X | | | |

# SACRAMENTO MUNICIPAL UTILITY DISTRICT
# BOARD OF DIRECTORS
# WARD BOUNDARIES

**ATTACHMENT A**




**WARD 1 RENE TAYLOR**
**WARD 2 NANCY BUI**
**WARD 3 HOWARD POSNER**
**WARD 4 GENEVIEVE SHIROMA**
**WARD 5 ROB KERTH**
**WARD 6 LARRY CARR**
**WARD 7 BILL SLATON**

# SACRAMENTO MUNICIPAL UTILITY DISTRICT

## WARD BOUNDARY DESCRIPTIONS

## FROM MARCH 7, 2002 TO CURRENT DATE

# WARD 1

Beginning at the intersection of the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad) with the northerly line of Sacramento County; thence from said point of beginning Easterly, along the northerly line of Sacramento County to the centerline of Interstate 80; thence Northeasterly, along the centerline of Interstate 80 to its intersection with the east-west centerline of Section 14, Township 10 North, Range 6 East, M.D.B. &M.; thence Easterly, along the east-west centerline of Section 14 to the southerly prolongation of the east line of Lots 5 and 6 as shown on the plat of "Livoti Tract", recorded in the office of the Recorder of Placer County in Book E of Maps at Page 5; thence Northerly, along the east line of Lots 5 and 6 and its southerly and northerly prolongation 660 feet, more or less, to the northerly right of way line of Livoti Avenue; thence Easterly, along the northerly line of Livoti Avenue 210.13 feet, to the easterly line of Lot 26 of "Livoti Tract"; thence Northerly, along the easterly line of Lot 26, 227 feet, more or less, to a point 3.00 feet northerly of the northerly line of Lot 25 of "Livoti Tract"; thence Easterly, along a line parallel with and 3.00 feet northerly of the northerly line of Lot 25, 138.75 feet; thence Northerly, along a line parallel with and 138.75 feet easterly of the easterly line of Lot 26, 445.23 feet to the northerly line of "Livoti Tract"; thence along the northerly line of "Livoti Tract", North 89°22'20" East 1712.24 feet to the northeast corner of "Livoti Tract"; thence Southerly, along the easterly line of "Livoti Tract", also being the westerly line of Section 13, Township 10 North, Range 6 East, M.D.B. &M., 1332.60 feet to the southwest corner of the Northwest one-quarter of Section 13; thence Easterly, along the southerly line of the Northwest one-quarter of Section 13, 2640 feet, more or less, to the westerly line of Sunrise Boulevard; thence Southerly, along the westerly line of Sunrise Boulevard 112 feet, more or less, to its intersection with the westerly prolongation of the north line of the parcel of land conveyed to Charles R. and Marjory A. Knoche and recorded in Volume 1138 of Official Records of Placer County at Page 138; thence East, along the westerly prolongation of the north line of the Knoche parcel to the east line of Sunrise Boulevard; thence continuing East, along the north line of the Knoche parcel, 344.67 feet to the northeast corner of Knoche parcel, said northwest corner of the Knoche parcel being a point on the east line of Lot 166, as shown on the plat of "Citrus Heights Addition No. 8" recorded in the Placer County Recorder's Office in Book C of Maps, Page 53; thence South 00°01'00" East 635.60 feet along the east line of Lot 166 to a point on the northerly line of Sacramento County; thence South 84°18'41" East 994.92 feet, along the Sacramento County Line to a point on the east line of Lot 169, as shown on "Citrus Heights Addition No. 8"; thence North 00°01'00" West 845.91 feet, along the east line of Lot 169 to the northeast corner of Lot 169, also being a point on the south line of the North one-half of Section 13, Township 10 North, Range 6 East; thence Easterly 652 feet, more or less, along the south line of the North one-half of Section 13 to the northwest corner of Lot 172, as shown on "Citrus Heights Addition No. 8"; thence Southerly, along the west line of Lot 172, 906.6 feet, more or less, to the Sacramento County line; thence along the Sacramento County line, South 85°18'30" East 6391 feet, more or less, to the easterly right of way line of Old Auburn Road; thence along the easterly right of way line of Old Auburn Road the following five (5) courses: 1) North 50°33'00" East 120 feet; 2) along a curve to the left, having a radius of 90.3 feet, the chord of which bears North 21°15'00" East 89.3 feet; 3) North 08°41'50" West 413.2 feet; 4) along a curve to the right, having a radius of 330 feet, the chord of which bears North 14°16'50" West 257.6 feet; and 5) North 37°14'50" East 815 feet; thence North 30 feet to the centerline of Old Auburn Road; thence Easterly, along the centerline of Old Auburn Road 4100 feet, more or less, to the centerline of Sierra

College Boulevard; thence Southerly, along the centerline of Sierra College Boulevard to the Sacramento County line; thence Easterly, along the Sacramento County line to a point on the easterly line of Section 15, Township 10 North, Range 7 East, M.D.B. &M. as shown on the Record of Survey entitled "Portions of Sections 14, 15, & 16, T.10 N., R.7 E., M.D.B. &M.", recorded in the office of the Recorder of Sacramento County on August 17, 1977, in Book 33 of Surveys at Page 11; thence along the easterly line of Section 15, South 01°20'29" East 133.40 feet to the southeast corner of Section 15; thence along the southerly line of Section 15, North 88°33'23" West 1444.16 feet to a point on the centerline of Santa Juanita Avenue as shown on the Record of Survey recorded in Book 33 of Surveys at Page 11; thence Southerly, along the centerline of Santa Juanita Avenue to a point on the northerly line of the plat of "San Juanita Colonies - Colony 'A'", recorded in the office of the Recorder of Sacramento County on November 11, 1902, in Book 4 of Maps, Map No. 36; thence Easterly, along the northerly line of "San Juanita Colonies - Colony 'A'" to the northeast corner of "San Juanita Colonies - Colony 'A'"; thence Southerly, along the easterly line of "San Juanita Colonies - Colony 'A'", to a point on the centerline line of Central Avenue, said point being the most northerly corner of the plat of "Scenic Oaks", recorded in the office of the Recorder of Sacramento County on July 2, 1979, in Book 132 of Maps, Map No. 2; thence along the exterior boundary of "Scenic Oaks" the following four (4) courses: 1) South 67°15'59" West 1122.78 feet; 2) South 01°05'30" West 355.82 feet; 3) North 88°54'48" West 295.00 feet; and 4) South 01°05'30" West 1046.17 feet to a point on the centerline of Orangevale Avenue; thence Westerly, along the centerline of Orangevale Avenue to the northeast corner of Lot 202 as shown on the plat of "Orange Vale Colony", recorded in the office of the Recorder of Sacramento County on September 18, 1895, in Book 3 of Maps, Map No. 20; thence Southerly, along the easterly line of Lots 202 and 239 of "Orange Vale Colony", to a point on the centerline of Greenback Lane; thence Easterly 100 feet along the centerline of Greenback Lane; thence South 190 feet; thence West 100 feet to a point on the westerly line of Block 3 as shown on the plat of "Orange Bluffs" recorded in the office of the Recorder of Sacramento County on February 10, 1909, in Book 9 of Maps, Map No.29; thence Southerly along the westerly line of Block 3 to a point on the northerly line of the Parcel Map entitled " A Portion of Rancho San Juan lying Within Projected Section 34, T10N, R7E, M.D.M. & a Portion of Orangevale Bluffs 9 BM 29", recorded in the office of the Recorder of Sacramento County on May 25, 1979, in Book 48 of Parcel Maps at Page 27; thence along the Parcel Map the following three (3) courses: 1) South 88°42'15" East 27.36 feet; 2) South 55°23'00" East 109.77 feet; and 3) along the arc of a curve to the right, having a radius of 20 feet, subtended by a chord bearing South 10°23'17" East 28.28 feet; thence South 55°24'30" East 49.37 feet to a point on the centerline of Madison Avenue, thence Westerly, along the centerline of Madison Avenue to the centerline of Winding Oak Drive as shown on the plat of "Rollingwood Unit No. 7", recorded in the office of the Recorder of Sacramento County on October 13, 1976, in Book 106 of Maps, Map No. 19; thence Southerly, along the centerline of Winding Oak Drive to the westerly prolongation of the northerly line of Lot 7-A as shown on "Rollingwood Unit No. 7"; thence Easterly, along the westerly prolongation of Lot 7-A to the most westerly corner of Lot 7-A; thence along the northerly line of Lot 7-A the following nine (9) courses: 1) North 89°15'40" East 405.49 feet; 2) North 32°33'00" East 113.22 feet; 3) North 89°20'24" East 217.01 feet; 4) North 28°48'39" East 91.30 feet; 5) North 60°01'06" East 30.02 feet; 6) South 68°18'06" East 258.30 feet; 7) South 71°12'19" East 327.46 feet; 8) South 67°22'49" East 234.00 feet; and 9) South 48°41'31" East 115.51 feet; thence South 83°46'33" East 458.94 feet to an angle point on the easterly line of Lot 7-A; thence South 02°58'39" West 753.37 feet to a point on the easterly

line of Lot 7-A; thence along the easterly line of Lot 7-A the following nine (9) courses: 1) South 29°11'39" East 82.84 feet; 2) South 24°00'00" East 173.45 feet; 3) South 15°24'57" West 88.51 feet; 4) South 26°40'44" East 74.06 feet; 5) South 89°15'19" East 80.62 feet; 6) South 29°00'00" East 150.00 feet; 7) South 15°12'25" East 197.18 feet; 8) South 26°33'52" East 211.56 feet; and 9) South 48°44'49" East 165.75 feet to the most westerly corner of Lot A as shown on the plat of "Rollingwood Unit No. 3", recorded in the office of the Recorder of Sacramento County on November 4, 1975, in Book 101 of Maps, Map No. 14; thence South 03°16'06" East 530.00 feet to a point on the centerline of Winding Oak Drive as shown on "Rollingwood Unit No. 3"; thence along the centerline of Winding Oak Drive the following three (3) courses; 1) North 86°43'54" East 135.26 feet; 2) along the arc of a curve to the right, having a radius of 900.00 feet, subtended by a chord bearing South 88°54'42" East 136.73 feet; and 3) South 84°33'19" East 151.54 feet to a point on the centerline of Main Avenue as shown on "Rollingwood Unit No. 3"; thence South 05°26'41" East 349.59 feet to the southeast corner of Lot B as shown on "Rollingwood Unit No. 3"; thence South 60° East to the centerline of the American River; thence Southwesterly, along the centerline of American River to the southerly prolongation of the centerline of San Juan Avenue; thence Northerly, along the southerly prolongation of the centerline of San Juan Avenue and the centerline of San Juan Avenue to the centerline of Winding Way; thence Westerly, along the centerline of Winding Way to the centerline of Garfield Avenue; thence Northerly, along the centerline of Garfield Avenue to the centerline of Greenback Lane; thence Northwesterly, along the centerline of Greenback Lane and the centerline of Elkhorn Boulevard to the centerline of Diablo Drive; thence Northerly, along the centerline of Diablo Drive and its northerly prolongation to the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad); thence Northeasterly, along the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad) to a point on the northerly line of Sacramento County, said point being the point of beginning.

## WARD 2

Beginning at the intersection of the northerly line of Sacramento County with the easterly line of Section 15, Township 10 North, Range 7 East, M.D.B. & M. as shown on the Record of Survey entitled "Portions of Sections 14, 15, & 16, T.10 N., R.7 E., M.D.B. &M", recorded in the office of the Recorder of Sacramento County on August 17, 1977, in Book 33 of Surveys at Page 11; thence along the easterly line of Section 15, South 01°20'29" East 133.40 feet to the southeast corner of Section 15; thence along the southerly line of Section 15, North 88°33'23" West 1444.16 feet to a point on the centerline of Santa Juanita Avenue as shown on the Record of Survey recorded in Book 33 of Surveys at Page 11; thence Southerly, along the centerline of Santa Juanita Avenue to a point on the northerly line of the plat of "San Juanita Colonies - Colony 'A'", recorded in the office of the Recorder of Sacramento County on November 11, 1902, in Book 4 of Maps, Map No. 36; thence Easterly, along the northerly line of "San Juanita Colonies - Colony 'A'" to the northeast corner of "San Juanita Colonies - Colony 'A'"; thence Southerly, along the easterly line of "San Juanita Colonies - Colony 'A'", to a point on the centerline line of Central Avenue, said point being the most northerly corner of the plat of "Scenic Oaks", recorded in the office of the Recorder of Sacramento County on July 2, 1979, in Book 132 of Maps, Map No. 2; thence along the exterior boundary of "Scenic Oaks" the following four (4) courses: 1) South 67°15'59" West 1122.78 feet; 2) South 01°05'30" West 355.82 feet; 3)

North 88°54'48" West 295.00 feet; and 4) South 01°05'30" West 1046.17 feet to a point on the centerline of Orangevale Avenue; thence Westerly, along the centerline of Orangevale Avenue to the northeast corner of Lot 202 as shown on the plat of "Orange Vale Colony", recorded in the office of the Recorder of Sacramento County on September 18, 1895, in Book 3 of Maps, Map No. 20; thence Southerly, along the easterly line of Lots 202 and 239 of "Orange Vale Colony", to a point on the centerline of Greenback Lane; thence Easterly 100 feet along the centerline of Greenback Lane; thence South 190 feet; thence West 100 feet to a point on the westerly line of Block 3 as shown on the plat of "Orange Bluffs" recorded in the office of the Recorder of Sacramento County on February 10, 1909, in Book 9 of Maps, Map No.29; thence Southerly along the westerly line of Block 3 to a point on the northerly line of the Parcel Map entitled " A Portion of Rancho San Juan lying Within Projected Section 34, T10N, R7E, M.D.M. & a Portion of Orangevale Bluffs 9 BM 29", recorded in the office of the Recorder of Sacramento County on May 25, 1979, in Book 48 of Parcel Maps at Page 27; thence along the Parcel Map the following three (3) courses: 1) South 88°42'15" East 27.36 feet; 2) South 55°23'00" East 109.77 feet; and 3) along the arc of a curve to the right, ~~having a radius of 20 feet, subtended by a chord bearing South 10°23'17" East 28.28 feet; thence~~ South 55°24'30" East 49.37 feet to a point on the centerline of Madison Avenue, thence Westerly, along the centerline of Madison Avenue to the centerline of Winding Oak Drive as shown on the plat of "Rollingwood Unit No. 7", recorded in the office of the Recorder of Sacramento County on October 13, 1976, in Book 106 of Maps, Map No. 19; thence Southerly, along the centerline of Winding Oak Drive to the westerly prolongation of the northerly line of Lot 7-A as shown on "Rollingwood Unit No. 7"; thence Easterly, along the westerly prolongation of Lot 7-A to the most westerly corner of Lot 7-A; thence along the northerly line of Lot 7-A the following nine (9) courses: 1) North 89°15'40" East 405.49 feet; 2) North 32°33'00" East 113.22 feet; 3) North 89°20'24" East 217.01 feet; 4) North 28°48'39" East 91.30 feet; 5) North 60°01'06" East 30.02 feet; 6) South 68°18'06" East 258.30 feet; 7) South 71°12'19" East 327.46 feet; 8) South 67°22'49" East 234.00 feet; and 9) South 48°41'31" East 115.51 feet; thence South 83°46'33" East 458.94 feet to an angle point on the easterly line of Lot 7-A; thence South 02°58'39" West 753.37 feet to a point on the easterly line of Lot 7-A; thence along the easterly line of Lot 7-A the following nine (9) courses: 1) South 29°11'39" East 82.84 feet; 2) South 24°00'00" East 173.45 feet; 3) South 15°24'57" West 88.51 feet; 4) South 26°40'44" East 74.06 feet; 5) South 89°15'19" East 80.62 feet; 6) South 29°00'00" East 150.00 feet; 7) South 15°12'25" East 197.18 feet; 8) South 26°33'52" East 211.56 feet; and 9) South 48°44'49" East 165.75 feet to the most westerly corner of Lot A as shown on the plat of "Rollingwood Unit No. 3", recorded in the office of the Recorder of Sacramento County on November 4, 1975, in Book 101 of Maps, Map No. 14; thence South 03°16'06" East 530.00 feet to a point on the centerline of Winding Oak Drive as shown on "Rollingwood Unit No. 3"; thence along the centerline of Winding Oak Drive the following three (3) courses; 1) North 86°43'54" East 135.26 feet; 2) along the arc of a curve to the right, having a radius of 900.00 feet, subtended by a chord bearing South 88°54'42" East 136.73 feet; and 3) South 84°33'19" East 151.54 feet to a point on the centerline of Main Avenue as shown on Rollingwood Unit No. 3"; thence South 05°26'41" East 349.59 feet to the southeast corner of Lot B as shown on "Rollingwood Unit No. 3"; thence South 60° East to the centerline of the American River; thence Southwesterly, along the centerline of the American River to a point on the northerly prolongation of the west line of the plat of "Larchmont Riviera East Unit No. 2", recorded in the office of the Recorder of Sacramento County on July 7, 1970, in Book 85 of Maps, Map No. 16; thence Southerly, along the northerly prolongation of the west line of "Larchmont Riviera East Unit No.

2" and the west line of "Larchmont Riviera East Unit No. 2" to the northwest corner of the plat of "Larchmont Riviera East Unit No. 1", recorded in the office of the Recorder of Sacramento County on September 10, 1969, in Book 84 of Maps, Map No. 15; thence South 105.00 feet, along the west line of "Larchmont Riviera East Unit No. 1", to the southwest corner of Lot 73 as shown on "Larchmont Riviera East Unit No. 1"; thence Southeasterly to the centerline of Hyannis Way; thence Southerly, along the centerline of Hyannis Way to the centerline of Bradshaw Road; thence Southerly, along the centerline of Bradshaw Road to the centerline of Elder Creek Road; thence Westerly along the centerline of Elder Creek Road to the centerline of South Watt Avenue; thence Southerly along the centerline of South Watt Avenue and the centerline of Elk Grove-Florin Road to the centerline of Calvine Road; thence Easterly along the centerline of Calvine Road to the centerline of Grant Line Road; thence Southwesterly along the centerline of Grant Line Road to its intersection with the northwesterly prolongation of the northeasterly line of "Spanish Grant Ranch Unit No 1", recorded on the office of the Recorder of Sacramento County in Book 91 of Maps, Map No. 17; thence Southeasterly along said prolongation to the most northerly corner of Lot 4 of "Spanish Grant Ranch Unit No 1"; thence South 49°34'07" East 1103.46 feet; thence South 42°24'17 West 457.00 feet; thence South 80°14'16" West 78.10 feet; thence South 40°25'53" West 462.28 feet; thence North 49°34'07" West 215.90 feet; thence South 40°25'53" West 230.87 feet to the northeasterly line of Parcel 3 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 30 of Parcel Maps, at Page 18; thence Southeasterly along the northeasterly line and continuing southeasterly along the northeasterly line of Parcel 4 of the parcel map recorded in Book 30 of Parcel Maps, at Page18 to the most easterly corner of Parcel 4; thence Southeasterly along the northeasterly line of Parcels 1 and 2 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 128 of Parcel Maps, at Page 25 to the most westerly corner of Parcel C as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 6 of Parcel Maps, at Page 28; thence Northeasterly, Southeasterly and Southwesterly along the exterior boundary of Parcel C to the most southerly corner thereof, said point being the most easterly corner of Parcel C of said parcel map recorded in Book 29 of Parcel Maps, at Page 27; thence South 40°30'47" West 686.16 feet to the northeasterly line of Parcel A as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 24 of Parcel Maps, at Page 24; thence South 49°26'45" East to the centerline of Deer Creek; thence in a general southerly direction along the centerline of Deer Creek to the southwesterly line of Lot 13 of "Central California Traction No. 13", recorded in the office of the Recorder of Sacramento County in Book 13 of Maps, Map No. 33; thence Northwesterly along Lot 13 to the most easterly corner of Lot 10 of "Vineyard Estates", recorded in the office of the Recorder of Sacramento County in Book 180 of Maps, Map No. 23; thence along the southeasterly line of Lots 10,11,12 and 13 of "Vineyard Estates" 1607.40 feet to the most southerly corner of Lot 13; thence North 50°13'16" West to the most easterly corner of Lot 25 of "Sheldon Woods", recorded in the office of the Recorder of Sacramento County in Book 126 of Maps, Map No. 19; thence South 40°58'30" West 1550 feet more or less to the centerline of Mooney Road; thence Northwesterly along the centerline of Mooney Road to the most easterly corner of Parcel 3 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 96 of Parcel Maps, at Page 8; thence along the south line of Parcels 3 and 2 of said parcel map recorded in Book 96 of Parcel Maps, at Page 8 to the boundary of Parcel 1 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 117 of Parcel Maps, at Page 20; thence Southeasterly, Southwesterly and Northwesterly along the boundary of Parcel 1 of said

parcel map recorded in Book 117 of Parcel Maps, at Page 20 to the most southerly corner of Parcel 2 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 96 of Parcel Maps, at Page 8; thence Southwesterly along the southwesterly prolongation of the southeasterly line of Parcel 2 of said parcel map recorded in Book 96 of Parcel Maps, at Page 8 the intersection with the westerly right of way line of the Central California Traction Railroad right of way, said point being situated on the northwesterly boundary of Parcel 2 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 128 of Parcel Maps, at Page 30; thence Southeasterly along the northwesterly boundary line to the most southerly corner of Parcel 2 of said parcel map recorded in Book 128 of Parcel Maps, at Page 30; thence South 41°22'58" West 40 feet more or less to the centerline of Wilton Road; thence Northwesterly along the centerline of Wilton Road to the most easterly corner of "Sunburst Solar Ranchettes Unit No.2", recorded in the office of the Recorder of Sacramento County in Book 141 of Maps, Map No. 30; thence along the southwesterly line of Lots 20, 19 and 17of of "Sunburst Solar Ranchettes Unit No.2", South 41°21'30" West 1983.08 feet to the northeasterly line of Lot 15 of "Sunburst Solar Ranchettes Unit No.2"; thence South 49°11'40" East 1231.95 feet; thence South 41°21'30" West 1320.00 feet to the northeasterly line of "Hop Ranch" recorded in the office of the Recorder of Sacramento County in Book 129 of Maps, Map No. 4; thence Southeasterly along the northeasterly line of "Hop Ranch" to the most easterly corner of Lot 11 of "Hop Ranch"; thence along the south line of Lots 11, 12, 13, 14, 15, 16, 17 and 18 of "Hop Ranch" to the most southerly corner of Lot 18 of "Hop Ranch"; thence North 49°02'50" West to the centerline of Grant Line Road; thence Southwesterly along the centerline of Grant Line Road to the easterly line of the Southern Pacific Transportation Company's Sacramento-Stockton Main Line right of way (now owned by Union Pacific railroad); thence Southeasterly along the easterly line of the Southern Pacific Transportation Company's Sacramento-Stockton Main Line right of way (now owned by Union Pacific railroad) to the centerline of California State Highway 99; thence Northwesterly along the centerline of California State Highway 99 to the easterly prolongation of the centerline of Kammerer Road; thence Westerly along the easterly prolongation of the centerline of Kammerer Road and the centerline of Kammerer Road to the centerline of Bruceville Road; thence Southerly along the centerline of Bruceville Road to the centerline of Lambert Road; thence Westerly along the centerline of Lambert Road to the centerline of Franklin Boulevard; thence Southerly along the centerline of Franklin Boulevard to the centerline of the Mokelumne River and the northerly boundary line of the County of San Joaquin, as shown on that certain Record of Survey entitled "The Sacramento-San Joaquin County Line from Mokelumne River to Amador County Line along Dry Creek", recorded in the office of the Sacramento County Recorder on May 20, 1969 in Book 27 of Surveys at Page 3; thence Easterly, along the northerly boundary line of the County of San Joaquin to a point on the easterly boundary line of the County of Sacramento; thence Northerly, along the easterly boundary line of the County of Sacramento to the northerly boundary line of the County of Sacramento; thence Westerly, along the northerly boundary line of the County of Sacramento to the westerly line of Folsom-Auburn Road; thence Northerly, along the westerly line of Folsom-Auburn Road to the northerly line of Section 23, Township 10 North, Range 7 East, M.D.B. &M.; thence Westerly, along the northerly line of Section 23 to a point on the boundary line of the 75-foot wide canal described in Parcels Three and Five of that certain Deed to San Juan Suburban Water District recorded in the office of the Recorder of Placer County in Book 664 of Official Records at Page 618; thence Westerly and Southerly, along the Deed recorded in Book 664 at Page 618 to the northerly line of Sacramento County; thence Westerly, along the

northerly line of Sacramento County to a point on the easterly line of Section 15, Township 10 North, Range 7 East, M.D.B. & M., said point being the point of beginning.

## WARD 3

Beginning at the intersection of the centerline of Howe Avenue with the centerline of Marconi Avenue; thence from said point of beginning Southerly, along the centerline of Howe Avenue to the centerline of Arden Way; thence Westerly, along the centerline of Arden Way to the centerline of Exposition Boulevard; thence Westerly, along the centerline of Exposition Boulevard of the centerline of Business 80; thence Southwesterly, along the centerline of Business 80 to the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad); thence Southwesterly, along the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad) to the northerly prolongation of the centerline of Alhambra Boulevard; thence Southerly, along the northerly prolongation of the centerline of Alhambra Boulevard and the centerline of Alhambra Boulevard to the centerline of California State Highway 50; thence Northeasterly along the centerline of California State Highway 50 to the centerline of Stockton Boulevard; thence Southeasterly along the centerline of Stockton Boulevard to the centerline of Broadway; thence Easterly, along the centerline of Broadway to the centerline of 65th Street; thence Southerly, along the centerline of 65th Street to the centerline of San Joaquin Street; thence Easterly, along the centerline of San Joaquin Street and its easterly prolongation, to the centerline of the Southern Pacific Transportation Company's Sacramento-Stockton Main Line right of way (now owned by Union Pacific railroad); thence Southeasterly, along the centerline of the Southern Pacific Transportation Company's Sacramento-Stockton Main Line right of way (now owned by Union Pacific railroad) to the centerline of Power Inn Road; thence Southerly, along the centerline of Power Inn Road to the centerline of Elsie Avenue; thence Westerly along the centerline of Elsie Avenue to the centerline of Stockton Boulevard; thence Southerly along the centerline of Stockton Boulevard and its southerly prolongation to the centerline of California State Highway 99; thence Southerly along the centerline of California State Highway 99 to centerline of Old Calvine Road; thence Easterly along the centerline of Old Calvine Road to the centerline of Elk Grove-Florin Road; thence Northerly along the centerline of Elk Grove-Florin Road and the centerline of South Watt Avenue to the centerline of Elder Creek Road; thence Easterly along the centerline of Elder Creek Road to the centerline of Bradshaw Road; thence Northerly, along the centerline of Bradshaw Road to the centerline of Hyannis Way; thence Northerly, along the centerline of Hyannis Way and its northerly prolongation to the southwest corner of Lot 73, as shown on the plat of "Larchmont Riviera East Unit No. 1", recorded in the office of the Recorder of Sacramento County on September 10, 1969, in Book 84 or Maps, Map No. 15; thence North 105.00 feet, along the west line of "Larchmont Riviera East Unit No. 1", to the northwest corner of "Larchmont Riviera East Unit No. 1"; thence Northerly, along the west line of "Larchmont Riviera East Unit No. 2" recorded in the office of the Recorder of Sacramento County on July 7, 1970 in Book 85 of Maps, Map No. 16, and the northerly prolongation of the west line of "Larchmont Riviera East Unit No. 2" to the centerline of the American River; thence Northeasterly, along the centerline of the American River to the southeasterly prolongation of the centerline of Arden Way; thence Northwesterly, along the prolongation of the centerline of Arden Way and the centerline of Arden Way to the centerline of Fair Oaks Boulevard; thence Northeasterly, along the centerline of Fair Oaks Boulevard to the centerline of Walnut Avenue;

thence Northerly, along the centerline of Walnut Avenue to the centerline of El Camino Avenue; thence Westerly, along the centerline of El Camino Avenue to the centerline of Watt Avenue; thence Northerly, along the centerline of Watt Avenue to the centerline of Marconi Avenue; thence Westerly, along the centerline of Marconi Avenue to the centerline of Howe Avenue, said point being the point of beginning.

## WARD 4

Beginning at the intersection of the centerline of the Sacramento River with the westerly prolongation of Broadway; thence from said point of beginning Easterly, along the westerly prolongation of Broadway and the centerline of Broadway to the centerline of California State Highway 99; thence Southerly, along the centerline of California State Highway 99 to the centerline of Sutterville Road; thence Westerly, along the centerline of Sutterville Road to the centerline of Freeport Boulevard; thence Southerly, along the centerline of Freeport Boulevard to the centerline of Fruitridge Road; thence Westerly along the centerline of Fruitridge Road to easterly line of the Record of Survey entitled "A Portion of the East 1/2 of Section 2 and the NE 1/4 of Section 11, Township 7 North, Range 4 East, Mount Diablo Meridian and a Portion of Sections 14, 23, 26, and 35, Township 8 North, Range 4 East, Mount Diablo Meridian", recorded in the office of the Recorder of Sacramento County on November 25, 1991, in Book 49 of Surveys at Page 29; thence Southerly, along the easterly line of the Record of Survey recorded in Book 49 of Surveys at Page to the centerline of Interstate 5; thence Southeasterly, along the centerline of Interstate 5 to the centerline of Morrison Creek; thence Northeasterly, along the centerline of Morrison Creek to the centerline of Union House Creek; thence Easterly, along the centerline of Union House Creek to the centerline of Franklin Boulevard; thence Northwesterly, along the centerline of Franklin Boulevard to the centerline of Mack Road; thence Easterly, along the centerline of Mack Road and Elsie Avenue to the centerline of Stockton Boulevard; thence Southerly along the centerline of Stockton Boulevard and its southerly prolongation to the centerline of California State Highway 99; thence Southerly along the centerline of California State Highway 99 to the centerline of Old Calvine Road; thence Easterly along the centerline of Old Calvine Road to the centerline of Grant Line Road; thence Southwesterly along the centerline of Grant Line Road to its intersection with the northwesterly prolongation of the northeasterly line of "Spanish Grant Ranch Unit No 1", recorded on the office of the Recorder of Sacramento County in Book 91 of Maps, Map No. 17; thence Southeasterly along said prolongation to the most northerly corner of Lot 4 of "Spanish Grant Ranch Unit No 1"; thence South 49°34'07" East 1103.46 feet; thence South 42°24'17 West 457.00 feet; thence South 80°14'16" West 78.10 feet; thence South 40°25'53" West 462.28 feet; thence North 49°34'07" West 215.90 feet; thence South 40°25'53" West 230.87 feet to the northeasterly line of Parcel 3 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 30 of Parcel Maps, at Page 18; thence Southeasterly along the northeasterly line and continuing southeasterly along the northeasterly line of Parcel 4 of the parcel map recorded in Book 30 of Parcel Maps, at Page18 to the most easterly corner of Parcel 4; thence Southeasterly along the northeasterly line of Parcels 1 and 2 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 128 of Parcel Maps, at Page 25 to the most westerly corner of Parcel C as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 6 of Parcel Maps, at Page 28; thence Northeasterly, Southeasterly and Southwesterly along the exterior boundary of Parcel C to the most southerly corner thereof, said point being the most easterly corner

of Parcel C of said parcel map recorded in Book 29 of Parcel Maps, at Page 27; thence South 40°30'47" West 686.16 feet to the northeasterly line of Parcel A as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 24 of Parcel Maps, at Page 24; thence South 49°26'45" East to the centerline of Deer Creek; thence in a general southerly direction along the centerline of Deer Creek to the southwesterly line of Lot 13 of "Central California Traction No. 13", recorded in the office of the Recorder of Sacramento County in Book 13 of Maps, Map No. 33; thence Northwesterly along Lot 13 to the most easterly corner of Lot 10 of "Vineyard Estates", recorded in the office of the Recorder of Sacramento County in Book 180 of Maps, Map No. 23; thence along the southeasterly line of Lots 10,11,12 and 13 of "Vineyard Estates" 1607.40 feet to the most southerly corner of Lot 13; thence North 50°13'16" West to the most easterly corner of Lot 25 of "Sheldon Woods", recorded in the office of the Recorder of Sacramento County in Book 126 of Maps, Map No. 19; thence South 40°58'30" West 1550 feet more or less to the centerline of Mooney Road; thence Northwesterly along the centerline of Mooney Road to the most easterly corner of Parcel 3 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 96 of Parcel Maps, at Page 8; thence along the south line of Parcels 3 and 2 of said parcel map recorded in Book 96 of Parcel Maps, at Page 8 to the boundary of Parcel 1 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 117 of Parcel Maps, at Page 20; thence Southeasterly, Southwesterly and Northwesterly along the boundary of Parcel 1 of said parcel map recorded in Book 117 of Parcel Maps, at Page 20 to the most southerly corner of Parcel 2 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 96 of Parcel Maps, at Page 8; thence Southwesterly along the southwesterly prolongation of the southeasterly line of Parcel 2 of said parcel map recorded in Book 96 of Parcel Maps, at Page 8 the intersection with the westerly right of way line of the Central California Traction Railroad right of way, said point being situated on the northwesterly boundary of Parcel 2 as shown on the parcel map recorded in the office of the Recorder of Sacramento County in Book 128 of Parcel Maps, at Page 30; thence Southeasterly along the northwesterly boundary line to the most southerly corner of Parcel 2 of said parcel map recorded in Book 128 of Parcel Maps, at Page 30; thence South 41°22'58" West 40 feet more or less to the centerline of Wilton Road; thence Northwesterly along the centerline of Wilton Road to the most easterly corner of "Sunburst Solar Ranchettes Unit No.2", recorded in the office of the Recorder of Sacramento County in Book 141 of Maps, Map No. 30; thence along the southwesterly line of Lots 20, 19 and 17of of "Sunburst Solar Ranchettes Unit No.2", South 41°21'30" West 1983.08 feet to the northeasterly line of Lot 15 of "Sunburst Solar Ranchettes Unit No.2"; thence South 49°11'40" East 1231.95 feet; thence South 41°21'30" West 1320.00 feet to the northeasterly line of "Hop Ranch" recorded in the office of the Recorder of Sacramento County in Book 129 of Maps, Map No. 4; thence Southeasterly along the northeasterly line of "Hop Ranch" to the most easterly corner of Lot 11 of "Hop Ranch"; thence along the south line of Lots 11, 12, 13, 14, 15, 16, 17 and 18 of "Hop Ranch" to the most southerly corner of Lot 18 of "Hop Ranch"; thence North 49°02'50" West to the centerline of Grant Line Road; thence Southwesterly along the centerline of Grant Line Road to the easterly line of the Southern Pacific Transportation Company's Sacramento-Stockton Main Line right of way (now owned by Union Pacific railroad); thence Southeasterly along the easterly line of the Southern Pacific Transportation Company's Sacramento-Stockton Main Line right of way (now owned by Union Pacific railroad) to the centerline of California State Highway 99; thence Northwesterly along the centerline of California State Highway 99 to the easterly prolongation of the centerline of Kammerer Road; thence Westerly along the

easterly prolongation of the centerline of Kammerer Road and the centerline of Kammerer Road to the centerline of Bruceville Road; thence Southerly along the centerline of Bruceville Road to the centerline of Lambert Road; thence Westerly along the centerline of Lambert Road to the centerline of Franklin Boulevard; thence Southerly along the centerline of Franklin Boulevard to the centerline of the Mokelumne River; thence Southwesterly, along the centerline of the Mokelumne River to a point located South 85°45'00" East 1534.5 feet and South 76°45'00" East 1181.4 feet from the most southerly corner of Tract 2 as shown on the "Amended Plat of Survey of Property of Green, Harley, Marsh, and Sansforth", recorded in the office of the Recorder of Sacramento County in Book 3 of Surveys at Page 61; thence North 76°45'00" West 1181.4 feet; thence North 85°45'00" West 1534.5 feet to the most southerly corner of Tract 2; thence North 57°32'00" West 1458.64 feet, along the south line of Tract 2 to the easterly right of way line of the Southern Pacific Railroad (now abandoned); thence Southerly, along the easterly right of way line of the Southern Pacific Railroad (now abandoned); to the south line of that certain Record of Survey recorded in the office of the Recorder of Sacramento County in Book 3 of Surveys at Page 100; thence Westerly, along the south line of the Record of Survey recorded in Book 3 of Surveys at Page 100, to the westerly right of way line of the Southern Pacific Railroad (now abandoned); thence Northerly, along the westerly right of way line of the Southern Pacific Railroad (now abandoned); to the westerly line of Race Track Road; thence Northerly, along the westerly line of Race Track Road to the most southerly corner of Parcel B as shown on the Parcel Map entitled "Swamp Land Survey No 336 Located on Tyler Island", recorded in the office of the Recorder of Sacramento County on September 30, 1985, in Book 89 of Parcel Maps at Page 12; thence North 64°12'51" West along the southwesterly line of the Parcel Map recorded in Book 89 of Parcel Maps at Page 12, and along it's northwesterly prolongation to the centerline of Georgiana Slough; thence Northeasterly, along the centerline of Georgiana Slough to the centerline of the Sacramento River; thence Northerly, along the centerline of the Sacramento River to a point on westerly prolongation of the centerline of Broadway, said point being the point of beginning.

## WARD 5

Beginning at the intersection of the northerly boundary line of Sacramento County and the centerline of Watt Avenue; thence from said point of beginning, Southerly along the centerline of Watt Avenue to the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad); thence Northeasterly along the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad) to the westerly prolongation of the centerline of Madison Avenue; thence Easterly along the westerly prolongation of the centerline of Madison Avenue and the centerline of Madison Avenue to the centerline of Business 80; thence Southwesterly along the centerline of Business 80 to the centerline of Watt Avenue; thence Southerly along the centerline of Watt Avenue to the centerline of Auburn Boulevard; thence Southwesterly line of Auburn Boulevard to the centerline of Howe Avenue; thence Southerly, along the centerline of Howe Avenue to the centerline of Arden Way; thence Westerly, along the centerline of Arden Way to the centerline of Exposition Boulevard; thence Westerly, along the centerline of Exposition Boulevard of the centerline of Business 80; thence Southwesterly, along the centerline of Business 80 to the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad); thence Southwesterly, along the centerline of the Southern Pacific Transportation Company's

Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad) to the northerly prolongation of the centerline of Alhambra Boulevard; thence Southerly, along the northerly prolongation of the centerline of Alhambra Boulevard and the centerline of Alhambra Boulevard to the centerline of Broadway; thence Westerly, along the centerline of Broadway and its westerly prolongation to the centerline of the Sacramento River; thence Northerly, along the centerline of the Sacramento River to its intersection with the northerly boundary line of Sacramento County and the southerly boundary line of Sutter County; thence Easterly, along the northerly boundary line of Sacramento County to a point on the centerline of Watt Avenue, said point being the point of beginning.

## WARD 6

Beginning at the intersection of the centerline of Alhambra Boulevard and the centerline of California State Highway 50; thence from said point of beginning, Northeasterly along the centerline of California State Highway 50 to the centerline of Stockton Boulevard; thence Southeasterly along the centerline of Stockton Boulevard to the centerline of Broadway; thence Easterly, along the centerline of Broadway to the centerline of 65th Street; thence Southerly, along the centerline of 65th Street to the centerline of San Joaquin Street; thence Easterly, along the centerline of San Joaquin Street and its easterly prolongation, to the centerline of the Southern Pacific Transportation Company's Sacramento-Stockton Main Line right of way (now owned by Union Pacific railroad); thence Southeasterly, along the centerline of the Southern Pacific Transportation Company's Sacramento-Stockton Main Line right of way (now owned by Union Pacific railroad) to the centerline of Power Inn Road; thence Southerly, along the centerline of Power Inn Road to the centerline of Elsie Avenue; thence Westerly along the centerline of Elsie Avenue and Mack Road to the centerline of Franklin Boulevard; thence Southeasterly, along the centerline of Franklin Boulevard to the centerline of Union House Creek; thence Westerly, along the centerline of Union House Creek to the centerline of Morrison Creek; thence Southwesterly, along the centerline of Morrison Creek to the centerline of Interstate 5; thence Northwesterly, along the centerline of Interstate 5 to the southerly prolongation of the easterly line of the Record of Survey entitled "A Portion of the East 1/2 of Section 2 and the NE 1/4 of Section 11, Township 7 North, Range 4 East, Mount Diablo Meridian and a Portion of Sections 14, 23, 26, and 35, Township 8 North, Range 4 East, Mount Diablo Meridian", recorded in the office of the Recorder of Sacramento County on November 25, 1991, in Book 49 of Surveys at Page 29; thence Northerly, along the easterly line of the Record of Survey recorded in Book 49 of Surveys at Page 29 to the centerline of Fruitridge Road; thence Easterly, along the centerline of Frutridge Road to the centerline of Freeport Boulevard; thence Northeasterly along the centerline of Freeport Boulevard to the centerline of Sutterville Road; thence Easterly along the centerline of Sutterville Road to the centerline of California State Highway 99; thence Northerly, along the centerline of California State Highway 99 to the centerline of Broadway; thence Easterly, along the centerline of Broadway to the centerline of Alhambra Boulevard; thence Northerly, along the centerline of Alhambra Boulevard to the centerline of California State Highway 50, being the point of beginning.

## WARD 7

Beginning at the point of intersection of the northerly boundary line of Sacramento County and the centerline of Watt Avenue; thence from said point of beginning Westerly along the northerly boundary line of

Sacramento County to the west line of Section 11, Township 10 North, Range 5 East, M.D.B. &M.; thence Northerly, along the westerly line of Section 11, one-half mile, more or less, to a road running east and west through the center of Section 11; thence Easterly, along east-west road to the west line of Section 12, Township 10 North, Range 5 East, M.D.B. &M.; thence Northerly, along the west line of Section 12, one-half mile, more or less, to the northwest corner of Section 12; thence Easterly, along the north line of Section 12 to the Range line between Township 10 North, Range 5 East, M.D.B. &M. and Township 10 North, Range 6 East, M.D.B. &M.; thence continuing Easterly, along the north lines of Sections 7, 8, 9 and 10 Township 10 North, Range 6 East, M.D.B. &M. to the northeast corner of Lot 28 as shown on the plat of "Hicken Tract", recorded in the office of the Recorder of Placer County in Book A of Maps, Page 31; thence South 00°03'55" West 20 feet; thence South 00°19'40" East 2635.13 feet, thence South 00°28'00" West 20.22 feet to the southerly line of Booth Road; thence Westerly, along the southerly line of Booth Road the following three (3) courses: 1) South 82°05'00" West 513.96 feet; 2) South 89°18'00" West 292.20 feet; and 3) North 85°19'00" West 237.29 feet; thence leaving the southerly line of Booth Road, and along the Roseville City Limits line South 00°02'00" East 794.50 feet; thence South 89°56'00" East 1038.21 feet to the north-south centerline of Section 10, Township 10 North, Range 6 East, M.D.B. &M.; thence along north-south centerline South 00°28'00" West 367.40 feet to a point in the westerly line of Atkinson Street; thence along the westerly line of Atkinson Street South 33°56'00" East 1221.02 feet; thence along a curve to the right, having a radius of 870 feet, the chord of which bears South 61°12'07" West 810.35 feet, to a point in the northerly line of P.F.E. Road; thence Westerly, along the northerly line of P.F.E. Road, 148 foot to the easterly line of Parcel D as shown on "Parcel Map No. 71906", recorded in the office of the Recorder of Placer County in Book 10 of Parcel Maps at Page 133; thence Northerly, along the easterly line of Parcel D, 1564.15 feet, more or less, to the northeast corner of Parcel D; thence Westerly, along the northerly line of Parcel D and the northerly line of Parcels B and C of the Parcel Map, 1629 feet, more or less, to the northwest corner of Parcel B; thence Southerly, along the westerly line of Parcel B and its southerly prolongation, 1631.43 feet, more of less, to the southerly line of P.F.E. Road; thence, along the southerly line of P.F.E. Road, North 89°07'01" East 636.84 feet; thence South 00°02'00" East 450 feet; thence South 89°59'00" West 96.80 feet to the westerly line of Section 15, Township 10 North, Range 6 East, M.D.B. &M.; thence along the westerly line of Section 15, South 00°02'00 East 1412.00 feet to the northerly boundary line of Sacramento County; thence Easterly, along the northerly boundary line of Sacramento County to the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad); thence Southwesterly, along the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad) to the northerly prolongation of the centerline of Diablo Drive; thence Southerly, along the northerly prolongation of the centerline of Diablo Drive and the centerline of Diablo Drive to the centerline of Elkhorn Boulevard; thence Southeasterly, along the centerline of Elkhorn Boulevard and the centerline of Greenback Lane to the centerline of Garfield Avenue; thence Southerly, along the centerline of Garfield Avenue to the centerline of Winding Way; thence Easterly, along the centerline of Winding Way to the centerline of San Juan Avenue; thence Southerly, along the centerline of San Juan Avenue and the southerly prolongation of San Juan Avenue to centerline of the American River; thence Southwesterly along the centerline of the American River to the southeasterly prolongation of the centerline of Arden Way; thence Northwesterly, along the prolongation of the centerline of Arden Way and the centerline of Arden Way to the centerline of Fair Oaks

Boulevard; thence Northeasterly, along the centerline of Fair Oaks Boulevard to the centerline of Walnut Avenue; thence Northerly, along the centerline of Walnut Avenue to the centerline of El Camino Avenue; thence Westerly, along the centerline of El Camino Avenue to the centerline of Watt Avenue; thence Northerly, along the centerline of Watt Avenue to the centerline of Marconi Avenue; thence Westerly, along the centerline of Marconi Avenue to the centerline of Howe Avenue; thence Northerly, along the centerline of Howe Avenue to the centerline of Auburn Boulevard; thence Northeasterly, along the centerline of Auburn Boulevard to the centerline of Watt Avenue; thence Northerly along the centerline of Watt Avenue to the centerline of Business 80; thence Northeasterly along the centerline of Business 80 to the centerline of Madison Avenue; thence Westerly, along the centerline of Madison Avenue and its westerly prolongation to the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad); thence Southwesterly, along the centerline of the Southern Pacific Transportation Company's Sacramento-Salt Lake City Right of Way (now owned by Union Pacific Railroad) to the centerline of Watt Avenue; thence Northerly, along the centerline of Watt Avenue to a point on the northerly boundary line of County of Sacramento, said point being the point of beginning.

## ATTACHMENT B

## PROPOSED TERMS AND CONDITIONS FOR LAFCO APPLICATION

1. SMUD shall ensure sufficient revenues exist to carry out thermal energy services.

2. SMUD shall ensure that the costs and benefits of thermal energy services are equitably allocated to SMUD's customers.

3. SMUD shall include thermal energy service in its next scheduled municipal service review.

4. SMUD shall ensure that any CEQA review that may be required in connection with future thermal energy service at district energy projects occurs.

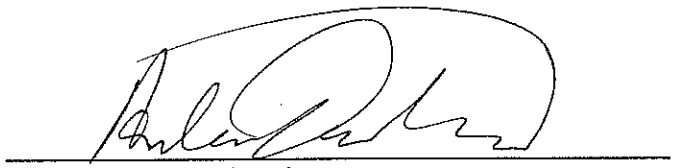
## SECRETARY'S CERTIFICATE

I, Arlen Orchard, Secretary of Sacramento Municipal Utility District (SMUD), hereby certify that the foregoing is a full, true and correct copy of Resolution No. 09-05-04 duly adopted at a regular session of the Board of Directors of SMUD on the 7th day of May 2009, at which meeting all of the members of said Board of Directors had due notice and at which a majority thereof were present; and that at said meeting said resolution was adopted by the following vote:

| INTRODUCED BY DIRECTOR CARR | | | | |
|---|---|---|---|---|
| SECONDED BY DIRECTOR SLATON | | | | |
| DIRECTOR | AYE | NO | ABSTAIN | ABSENT |
| POSNER | X | | | |
| SLATON | X | | | |
| TAYLOR | | | | X |
| BUI | X | | | |
| SHIROMA | | | | |
| KERTH | X | | | |
| CARR | X | | | |

I further certify that I have carefully compared the same with the original minutes of said meeting on file and of record in my office; that said resolution is a full, true and correct copy of the original resolution adopted at said meeting and entered in said minutes; and that said resolution has not been amended, modified, or rescinded since the date of its adoption, and is now in full force and effect.

WITNESS my hand and the seal of Sacramento Municipal Utility District this 13th day of May 2009.

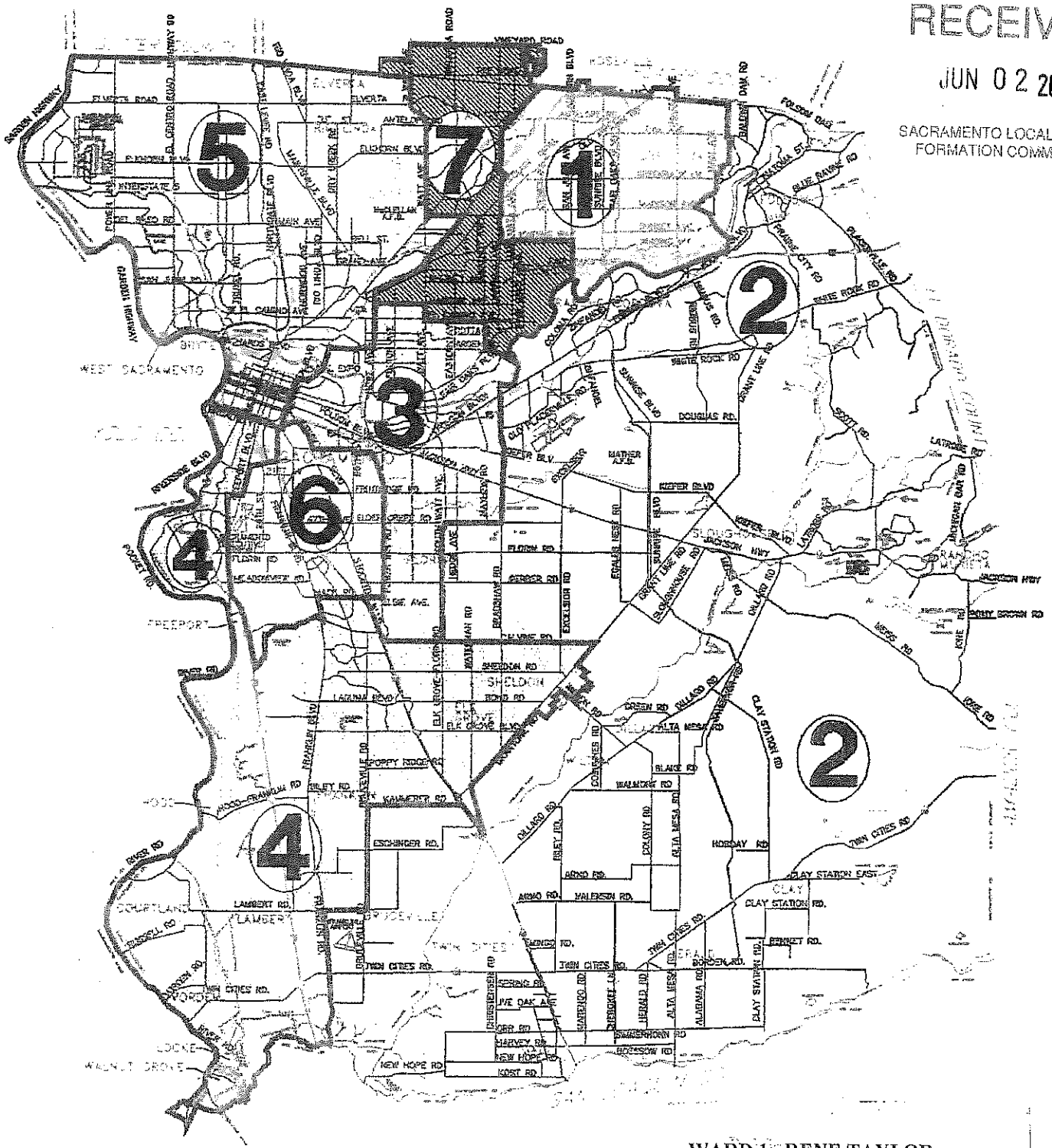


Arlen Orchard
General Counsel and Secretary of the
Sacramento Municipal Utility District

# SACRAMENTO MUNICIPAL UTILITY DISTRICT
# BOARD OF DIRECTORS
# WARD BOUNDARIES

**ATTACHMENT A**






**WARD 1 RENE TAYLOR**
**WARD 2 NANCY BUI**
**WARD 3 HOWARD POSNER**
**WARD 4 GENEVIEVE SHIROMA**
**WARD 5 ROB KERTH**
**WARD 6 LARRY CARR**
**WARD 7 BILL SLATON**