



November 2, 2018
GM 18-277

BOARD OF DIRECTORS

2019 BUDGET

Dear Board Members:

I am pleased to submit SMUD's 2019 Budget proposal. It provides funding for operations and maintenance (O&M) and capital programs needed to meet all the Board's Strategic Directions over the coming year and ensures we will continue to do so in the future.

2019 will be an extremely critical year in laying the foundation for the future of SMUD. This year will see many transformational changes, with the rollout of Time-of-Day (TOD) rates, entry into the California Independent System Operator's (CAISO) Energy Imbalance Market, filing our Integrated Resource Plan (IRP) with the California Energy Commission (CEC), technology implementations such as Advanced Distribution Management System (ADMS) and the further exploration of new business models. In 2019 we will embark on commercial and net energy metering rate restructures which allow us to closer align our costs with our revenue. Together, all these changes help position SMUD to successfully navigate the significant changes facing our industry. We expect the pace of change will continue to increase, making the need to optimize our approaches, right-size mitigation efforts, ensure holistic views and collaborate across the organization more important than ever.

We are excited that the Headquarters rehabilitation will be complete in 2019 and expect employees to move back into the facility by mid-2019. The thoughtful rehabilitation of this historic landmark will deliver approximately 15% more floor area and provide flexibility to serve SMUD's needs for decades to come, with spaces that encourage creativity, nimbleness and collaboration. Approximately 400 employees will move back into the rehabilitated Headquarters building.

In 2019, we continue to focus on optimization and operational excellence, building on progress we've made to streamline our operations and reduce expected expenditures where we can do so without compromising safety, reliability and customer experience.

The proposed 2019 Budget is \$1.71 billion, which is \$25 million less than the 2018 Budget, primarily due to lower planned capital expenditures. The 2019 Budget funds a variety of programs including investments to support the development of our load serving capacity, grid modernizations, compliance with regulatory requirements and support for our TOD outreach and communications.

Arlen Orchard, Chief Executive Officer & General Manager

Major capital projects for 2019 include the continued rebuilding of Stations G and E, Franklin Substation, the Whiterock tunnel bolt replacement, beginning work on the Power Control Center and completion of our Headquarters project. The 2019 Budget includes funding for new and continuing technology projects. Major technology projects that will be completed in 2019 include the ADMS, network transformations (SONET and Frame Relay) and the Energy Trading & Risk Management project which improves energy resource and trading capabilities. In 2019, we'll begin upgrading to the Electronic Document Management system, building new microwave radio links to Solano Wind Farm and replacing old microwave radios. This contains funding for corporate contingency and reserve, which is for items with a high likelihood of occurring in 2019 but without enough definition to be included within a business unit's budget. In 2019, corporate contingency includes funds for load-serving capacity projects, a new carbon-free generation asset, the Downtown Street Car project, potential SD-14 projects, additional commercial development due to the changes to development fees and spare parts for the Cosumnes Power Plant.

The O&M budget is increasing, primarily due to an increase in our commodity budget, higher costs for wildfire insurance and mitigation and new programs for transportation and building electrification. As the Board knows, electrification is a critical part of our newly-adopted IRP, and an important part of our strategy to continue to provide a leadership role in the region's transformation to a low-carbon future. The budget also funds the rollout plan for switching our residential customers to TOD Rates. TOD is a significant change for our customers, and the funds allocated to TOD in 2019 focus on customer outreach and education.

The 2019 Budget authorizes 59 new positions, 19 are full-time and 16 are limited term positions. These positions are in support of the Technology, Energy Delivery, Workforce, and Community Energy Services (to support of Community Choice Aggregation (CCA)) workgroups. The positions for CCA work are all limited term as we continue to right size the staffing level for this new line of business. As our reliance on technology grows, many of the new positions, and in some cases new skill sets, are necessary to successfully move our business model and SMUD forward. We are also adding 24 student positions to support the expansion of our internship programs to draw on local collegiate resources to build our talent pipeline, particularly in STEM (science, technology, engineering and math) fields.

To fulfill the Strategic Directions you've set for us, strong financial management is imperative. The previously approved rate increase for 2019 of 1 percent for commercial customers (and no rate increase for residential customers) and our year-end cash balances will be sufficient to cover approximately half of our planned expenditures, with new borrowing in 2019 to fund the remaining capital expenditures.

We expect a modest increase in our customer count in 2019, and a slight decrease in our kWh sales volume. We recognize the potential for new growth related to indoor agriculture and mixed-use commercial/residential growth but have maintained conservative sales estimates as these markets are complex and still evolving. We'll continue to monitor and manage these and other factors, including local construction and employment and their impact on our Budget and operations.

Budget Breakdown

Here is a brief overview of the 2019 Budget compared to the 2018 Budget (dollars in millions):

	2018	2019	Change
Commodity	\$435.1	\$448.1	\$13.0
Public Goods	55.0	61.3	6.3
All Other O&M	545.7	571.7	26.0
Sub Total	\$1,035.8	\$1,081.1	\$45.3
Debt Service	181.1	186.1	5.0
Capital and Reserve	519.4	443.9	(75.5)
Total Authorization	\$1,736.3	\$1,711.0	(\$25.3)

Totals may reflect minor rounding differences

The 2019 Budget is projecting net income of \$61 million and a fixed charge ratio of 1.76.

The following sections provide details on the specific initiatives and programs funded in the 2019 Budget, grouped by Strategic Direction.

Competitive Rates (SD-2)

The 2019 Budget reflects the 1% rate increase for commercial customers and no rate increase for residential customers as approved by the Board in July 2017. Energy supply commodity costs make up almost half of our total O&M budget. Staff has locked in prices for most of our expected energy requirements for 2019 to ensure cost and rate stability for customers. Only a small portion of budgeted purchases are exposed to short-term market price fluctuations.

We'll enter 2019 with approximately \$64 million in the Hydro Rate Stabilization Fund and \$32 million in the Rate Stabilization Fund. A transfer of \$5.7 million from the Rate Stabilization Fund is expected in December 2018 because of lower energy deliveries from Western Area Power Administration (WAPA). These reserve funds help us absorb higher energy costs when hydroelectric production is down and serve as a buffer against unexpected financial developments.

We recognize that delivering operational efficiency improvements is an important tool to help reduce upward pressure on rates, and there are numerous initiatives planned for 2019 to make our processes more efficient. We'll continue to drive performance improvements by focusing on optimization and operational excellence with measured outcomes, benefits realization and streamlined planning and prioritization processes.

A few examples of 2019 Budget investments to create efficiencies are:

- A new Project Performance Management tool to deliver better tracking and validation of outcomes against project goals.

- Workforce optimization within Power Generation and Grid Assets is a set of projects to implement new tools to help employees do their jobs more effectively, including a mobile application and mobile devices for managing planned work, and a scheduling tool to help schedule work more efficiently. The new mobile tool will give employees access to data and information in the field, including customer access information and work completed previously for a specific customer on an asset.
- Improving self-service options for customers through various communication channels such a web, interactive voice response (IVR) and the SMUD App.
- Implementation of an Energy Trading & Risk Management (ETRM) system. The ETRM provides real-time transparency of our commodity portfolio to Energy Trading, Energy Settlements and Commodity Risk Management departments. Benefits include:
 - Daily credit and exposure reports instead of weekly and monthly.
 - All transactions captured in one system.
 - Ability to employ a broader range of hedging strategies aimed at lowering overall hedging costs while not increasing our risk exposure.
 - Significant improvement in the timeliness of performance results and reports as compared to our commodity budget.
- Optimizing training strategies for line crews, achieving step testing efficiencies and the continued use of EVALS, a mobile training platform, to reduce manual processes within Energy Delivery, freeing up staff hours to redirect to higher value work.
- Focusing our procurement practices to align strategic purchasing decisions with spend management and supplier performance while addressing information security, cyber security and third-party risk.

In 2019 we will transition most of our residential customers to TOD Rates. Adoption of the TOD pricing structure is an important milestone, but we need to continue to evolve our pricing strategy. Key pricing initiatives that staff will work on in conjunction with the Board is the commercial rate restructure and revamp of net energy metering rates. Overhauling these rates will closer align our rate structures with our costs. In early 2019 we will present to the Board our proposed rates for 2020 and 2021 as part of the rate process.

Access to Credit Markets (SD-3)

SMUD is in a strong financial position. Last year, S&P and Fitch upgraded SMUD's credit rating to AA. To maintain this high credit rating, we've set a strategic financial target to maintain strong operating cash flow. Although the Board has set a minimum target of cash flow cover (fixed charge) of 1.50 times operating cash flow, we aim to exceed that target to

support the higher level of proposed capital spending. Our forecasted 2019 operating cash flow cover is 1.76. This higher credit rating produces a lower cost of borrowing.

We'll start 2019 with lower cash balances with the anticipation of a new issuance in the first quarter of 2019. We're forecasting to end 2019 with an unrestricted cash balance of \$394 million, and a Rate Stabilization Fund balance of \$32 million, which combined, is more than the target minimum for cash reserves. We intend to issue new money in the amount of \$300 million in 2019 to replenish SMUD's cash balances after spending on the replacement or upgrade of aging infrastructure such as the Headquarters building, underground cable, Stations E, G and Franklin substation and the Power Control Center.

As always, the largest budget exposure for 2019 will be the effect a dry winter could have on hydroelectric generation and the hydropower SMUD receives from the Central Valley Project via WAPA. Due to lower than expected WAPA deliveries this year, we will be transferring funds out of the Rate Stabilization Fund. A dry year could force us to make unbudgeted market purchases, potentially reducing net income and cash flows. To reduce the negative impacts of an extremely dry year, we can enact a hydroelectric rate surcharge and will again ask to use the Rate Stabilization Fund to offset the purchase of any needed replacement power.

Reliability (SD-4)

Keeping the lights on for our customers remains a top priority. The 2019 Budget funds the ongoing preventive maintenance and capital improvement projects needed to ensure high reliability of our distribution system. Our reliability is generally high, but we continue to see an increase in outage frequency and duration largely attributable to car/pole accidents and outages associated with trees outside of SMUD's right-of-way. However, our increased investments in 2017 and 2018 have delivered the projected improvements in reliability, and we're continuing to invest in reliability enhancements in 2019. We understand that any power outage is a negative experience for our customers and will continue efforts with proactive communications with customers during outages.

Some major efforts to address reliability in the 2019 Budget are:

- Programming and design work for our new Power Control Center (PCC) with construction activities expected to be complete by 2022. The PCC will be designed and built to meet all Federal Energy Regulatory Commission (FERC), North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) standards and guidelines. It will achieve at least a Tier 3 level of reliability to make sure SMUD's mission-critical functions are always up and running.
- Cable replacement – We plan to remove and replace approximately 267,000 circuit feet of existing cable. The expected outcome is to replace the worst performing cable, which will decrease future outages and repair costs.

- 69kV motorized switches – This project will automate twenty-four 69kV switches and provide remote operational capability and data acquisition. With more and more distributed energy resources (DER) interconnecting onto the distribution system, it is imperative to ensure our Operations staff have higher visibility and remote operational capability.
- Upgrades and expansion of the distribution system to serve load growth in downtown Sacramento including a 21kV extension, new communities such as Folsom Ranch and Cordova Hills, proposed developments in the northwest area of our service territory and new indoor cultivation facilities.
- Re-configure Hurley Bulk substation with the installation of a 230kV bus-tie circuit breaker to minimize negative impacts should an outage event occur at the substation.
- Upper American River Project (UARP) road repair and reconstruction following the 2017 storms.

Ongoing annual activities in the 2019 Budget include funds for the continued systematic evaluation of the condition of our assets to determine capital replacement plans and help prioritize maintenance work.

Customer Relations (SD-5), Outreach and Communication (SD-15)

2019 is a big year for maintaining and expanding on our strong customer relations and brand loyalty. We expect to finish transitioning our residential customers to the new TOD Rate during the first half of the year. Our integrated and multi-lingual communications, marketing, education and outreach campaign aims to help customers understand how TOD could impact their bill and how best to mitigate those impacts. By focusing on empowering our customers to thrive in a new energy future, we'll foster stronger customer loyalty. We want customers to feel in control of their energy usage by reliably delivering energy, information and the tools they need in a way that is easy, responsive, personal and collaborative. Our overarching goal is to increase customer loyalty among all our customer segments as measured through our Value for What You Pay metric.

In support of our work to deliver value to our customers and community, our 2019 Budget includes funds for:

- Support of new pricing products including the TOD mass transition and Energy Assistance Program Rate (EAPR) restructure. 2019 is the first year of the new EAPR rates that aim to provide assistance to the customers who need it most.
- Providing a seamless customer interconnection experience for solar, EVs, battery storage and indoor cultivation by focusing on improving cycle times through communication and coordination.

- Implementation of a Sustainable Communities Strategy, which is a holistic strategy that defines SMUD's vision for creating a healthy community and region through workforce development, economic development, social equity, climate change leadership and environmental justice initiatives.
- Continuing our work in the community with our SMUD Cares campaign, Shine Awards, and work with the Powerhouse Science Center. New for 2019, we'll introduce a "Powerful Ideas" pilot, a new grant program to support teachers with ideas for engaging students in STEM education.
- Improving relationships with commercial developers through early action, closer coordination, removal of barriers and improved communication and education.
- Enhancing our meter-to-cash systems to accommodate more complex billing and payment options for our customers.

Safety (SD-6)

SMUD continues to implement a plan to be a recognized leader in safety – Be Safe. Always. In 2019, we'll finalize and implement a 5-year Occupational Health and Safety Strategy that improves SMUD's safety culture and safety leadership and our organizational goal of a zero-incident culture.

Key safety commitments in the 2019 Budget are:

- Getting the basics right – A safety assessment and strategic foundation, along with ongoing program improvements and clearly defined roles and responsibilities.
- Safety basics – Safety leadership development, employee involvement, planning and strategy implementation.
- Safety improvements – Improved safety communications, formalized health and safety programs for areas like driver safety, incident investigations, risk assessments and safety culture (including the Safety for Life program).
- Safety evaluation and corrective action – Review of program effectiveness and development of corrective actions to ensure continuous safety improvements.
- Management review – review of safety programs as well as evaluation of SMUD Safety program achievements and improvement areas.

Environmental Leadership (SD-7)

SMUD's commitment to the environment is evident in what we do every day. It's part of how we work, our community involvement, the power we deliver to our customers, the materials we buy and the decisions we make. We're always looking to reduce our impact on the

environment and conserve resources for future generations. These efforts benefit our employees, customers and most of all, our community.

A large focus next year is on reducing Sulfur Hexafluoride (SF6) usage, an extremely potent greenhouse gas, engineering teams are looking into the use of non-SF6 gas equipment at the different voltage levels utilized on SMUD's electric system. Staff will start reducing dependencies on SF6 gas equipment by utilizing vacuum interrupting technology on four 69kV breaker replacement projects at Hedge Substation. At higher voltage levels such as 115 and 230 kV, clean air technology is in development as SF6 remains the dominant gas used throughout the industry. SMUD engineering teams are working with the California Air Resources Board (CARB) and equipment manufacturers to come up with a manufacturing schedule that is acceptable to all parties and meets CARB's new proposed SF6 regulation to phase out the purchasing of new SF6 equipment by 2025. The maintenance teams will also be piloting a SF6 Management Tracking Program to track existing SF6 equipment, cylinder inventory and emission rates. The tool will be used to automate reporting to the California Air Resources Board and U.S. Environmental Protection Agency

Other environmental leadership commitments in the 2019 Budget are:

- Develop a strategy to coordinate, communicate and bolster the impact of existing and new SMUD sustainable community efforts. Our strategy includes identifying and aligning existing SMUD programs, services and operations related to sustainable community concepts, developing a Community Advisory Council and formalizing partnerships with community stakeholders.
- Completion of our Headquarters rehabilitation project, which incorporates energy efficiency features and targets LEED Gold certification.
- Establish environmental sustainability within our workforce and workplace to lower the environmental footprint of our business practices through energy use reduction, water conservation, waste minimization, GHG emission reduction, and Fleet Electrification through employee participation, metrics, communication and advocacy.
- Aggressively expanding our fleet electrification with a plan to purchase 12 hybrid electric-operated bucket trucks and 24 sedans, increasing our fleet pool to 13% electric by the end of 2019.
- Continuing the recreational improvements that we committed to under the new operating license for the UARP.

Employee Relations (SD-8)

In 2019, we'll continue to focus on attracting and retaining the right talent at the right time. Many initiatives are planned to ensure we create a culture that values employees' ideas and fosters innovation, collaboration, inclusiveness and accountability. We'll continue to implement our strategic workforce planning, knowledge capture and succession planning

strategies based on data and insights into current and future workforce trends. The nature of the electric utility business is changing, which requires an evolving range of skill sets for our employees. Our Learning & Development programs will continue to evolve and adapt to give our employees the skills they need to succeed and help ensure SMUD succeeds.

Culture remains one of our top focuses and priorities. We'll conduct an employee engagement survey in 2019 and focus on specific cultural areas to enhance, develop and maintain an engaged, collaborative and agile workforce, based on the results of our 2018 culture survey. We'll also implement new designs in our physical workspaces to support a culture of collaboration and innovation.

We are making investments to assess, market and improve our employer brand. We are researching an investment in GlassDoor, an online job search company, and are looking to participate in the "Great Place to Work" and "National Intern Day" campaigns to broaden our reach and expand our talent pipeline. Interns are our workforce pipeline of the future, and in 2019 we will continue to focus on our existing internship programs. Departments will be encouraged to extend their interns where practical and hire more interns. We will create a seamless path for high-potential/high-performing interns to join SMUD in entry-level capacities.

We continue to evaluate our Total Rewards offerings to maintain the strength to attract and retain top talent. We are on track to offer a flexible cafeteria-style benefits plan for active employees, with an expected roll out in 2020 for unrepresented employees. This would allow employees to select benefits that meet their preferences and needs, including offerings for child care, elder care and insurance options for legal, travel and pet needs.

Resource Planning (SD-9)

As you are aware, the Board just adopted a new Integrated Resource Plan (IRP). SMUD has always had an aggressive IRP that met or exceeded goals established by the State for renewable energy and the reduction of carbon emissions. Our new IRP, with updated targets, aims to go even further by providing our customers with a sustainable power supply, which will reduce our net long-term greenhouse gas emissions to net zero by 2040. This will be achieved through investment in vehicle and building electrification, energy efficiency, distributed resources, renewable energy plus additional investments in reliability.

Some efforts toward this goal included in the 2019 Budget are:

- Entering the CAISO Energy Imbalance Market in April 2019.
- Filing our IRP with the CEC. This includes the roll-out of new DER programs, especially electrification.
- Optimizing our Renewable Portfolio Standards to ensure we use the most cost-effective resources available to meet State requirements.

- Evaluating the benefit of additional managed services such as Energy Market & Portfolio Services, Energy Management Systems and Demand Response.
- A multi-pronged approach to encouraging EV adoption in SMUD territory by expanding charging infrastructure to reduce range anxiety through incentives for SMUD co-branded fast chargers, workplace and multi-family charging. We are also expanding support for medium/heavy-duty EVs.
- Transition from “Charge Free for 2 Years” program to a statewide “Point of Purchase” program.
- Expanding our building electrification offerings to look at neighborhood approaches and offer electrification options within our existing low-income programs. Some potential projects for 2019 include:
 - Working with local governments on establishing “reach” codes to adopt energy standards that are more stringent than statewide standards.
 - Incorporating heat pump water heater technologies into the North Franklin project.
 - Targeting homes and infrastructure within neighborhoods to gain efficiencies and address infrastructure needs.
- Leveraging opportunities with Volkswagen and the Sacramento Metropolitan Air Quality Management District to provide funds to increase charging for vehicles with low-income car share programs, examine pre-owned EVs for disadvantaged communities and helping our key community partners complete grant applications to accelerate electrification.
- Deploying customer energy storage offerings, such as virtual demand reduction, that position SMUD to better share energy storage benefits with customers as costs continue to decline.

Innovation (SD-10)

One of our core values is delivering innovative solutions, products and services to our customers. 2019 will be a key year for DER projects, with a focus on energy storage. We'll investigate, research and demonstrate a variety of DER projects, including:

- Expanding our energy storage efforts with the introduction of 4 new pilots:
 - Residential and commercial “commitment to operate”: Targets existing storage customers by gaining commitment to operate their batteries with our TOD Rates.

- New residential construction
 - Residential and Commercial Thermal energy storage
 - Virtual demand reduction: Install battery storage where SMUD and commercial customers can both benefit.
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- Continuing work with indoor cannabis growers to improve the energy efficiency of grow facilities and reduce grid impacts.
 - The Second Life Battery Storage project which demonstrates leveraging used EV batteries as an economic stationary storage resource.
 - Continuing to work with local developers to identify all-electric new home projects. These homes will have no natural gas service to the property which will save approximately one tonne of greenhouse gas per home per year.
 - Creating a SolarShares® program for developers.

Public Power Business Model (SD-11)

We'll continue to guard local decision making and flexibility as we pursue innovative solutions that meet the needs of our customers and community.

The main focus areas for Government Affairs activities in the 2019 Budget are:

- Policy changes to mitigate wildfires and their associated costs.
- The post-2020 carbon policies and regulations, including Cap and Trade, Low Carbon Fuel Standard and SF6 equipment amendments.
- Implementation of new benchmarking and data filing requirements with the CEC and changes to the Renewable Portfolio Standard.
- Proposals to regionally expand the CAISO and the Energy Imbalance Market.
- Address issues relating to Community Choice Aggregation (CCA).
- Cybersecurity legislation.
- Federal policies on transportation.

Economic Development (SD-13)

SMUD promotes the economic vitality of our region and the growth of our customer base through strategic leadership and active participation in regional economic development partnerships. This includes supporting efforts to retain, recruit and grow commercial and industrial rate-paying customers, offering economic development rates and program incentives and providing a SMUD contracting program for certified small business customers. We're also helping build a strong innovation ecosystem through support for start-ups, entrepreneurs and business incubators.

SMUD helps make our region an attractive destination for businesses of all sizes through affordable rates and customized energy solutions.

Key initiatives in the 2019 Budget are:

- Implementing our Sustainable Communities Strategy.
- Providing strategic leadership for local economic development organizations and initiatives; implementing and promoting the new Economic Development Rate in conjunction with business attraction, retention and growth efforts.
- Continuing to promote SEED awareness and vendor participation through key partnerships, outreach and the launch of engagement tools including online program webinars; enhancement of the SEED vendor verification process and development and implementation of a key study to assess small business availability in, and surrounding SMUD's service area to inform a SEED outreach strategy.

System Enhancement (SD-14)

There are two SD-14 projects included in the 2019 Budget. The first project is Sacramento County's streetscape project at Fair Oaks Blvd between Landis Ave and Angeline Ave. The second project is Sutter Village which is in the city of Sacramento. Both projects will underground the existing overhead facilities that are within the project boundaries.

Information Management and Security (SD-16)

The effective and efficient use of technology is a strategic imperative for all our operations. The 2019 Budget funds technology solutions as well as the components of SD-16.

Key initiatives in the 2019 Budget are:

- Continuing work on grid modernization including ADMS and the Distributed Energy Resource Management System (DERMS), which lays the foundation for the transactive grid and enables integration of DERs such as solar, energy storage and EVs.

- Continuing to make Information Security a cornerstone of technology and having all employees on alert for increasing risks of cyberattacks on a 24/7 basis. We are expanding our program to improve our security posture in the areas of CIP, privacy, Operational Technology security and overall awareness.
- Application rationalization – We are developing a strategic view of applications with potential future savings to be achieved by retiring or consolidating applications used across SMUD as part of our efforts to update our enterprise application architecture.
- Enhancing our customers' experiences by implementing flexible and nimble payment technology, expanding digital channels and improving mobile applications, while also ensuring security for these transactions.

Enterprise Risk Management (SD-17)

The 2019 Budget fully funds identified risk mitigation activities. SMUD's enterprise-level risks span the spectrum of operational and strategic business risks and include those associated with energy commodities, strategy, operations, natural hazards, political and regulatory issues, economics and the environment. Risk assessments and mitigation plans continue to be refined and improved by taking into account SMUD's changing internal and external risk environment and enhancing how SMUD addresses risks. Risk mitigations for significantly-high and high risks identified in the enterprise risk register will continue to be monitored closely to ensure risks are managed appropriately. Some key initiatives for 2019 include addressing aging infrastructure, wildfire risk mitigation, technology projects for grid transformation, creating a more agile workforce through mobility and managing the transition of customers to TOD Rates.

SMUD continues to work closely with all compliance and regulatory bodies to stay current with all compliance standards and reviews, and updates procedures and systems to ensure full compliance. SMUD recently adopted a standard internal controls framework for its Internal Controls Evaluation for NERC-related assessments. SMUD proactively monitors the direction of future standards and manages the strategic direction of our systems to provide safe and reliable energy to our customers.

Staff continues to update the enterprise risk portfolio and provide the Board with leading risk indicators as early warning signals that call for action. The overarching goal is to encourage the integration of risk-based thinking into decision-making at all levels. Enterprise Risk Management will continue to align with Internal Audit and other lines of defense through shared best practices.

Diversified Business (SD-19)

Broadening and diversifying our products and services is a key value for SMUD. In 2019 we will pursue opportunities that benefit our customers and community, create economic value, achieve a balanced and diversified portfolio, leverage and optimize our strengths, assets and expertise, all while maintaining our financial health and reputation.

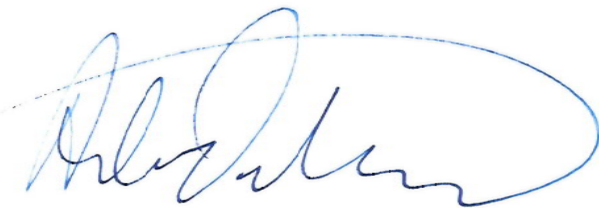
In 2019 we'll officially launch SMUD's Retail Sales & Consultation line of business where we'll begin to monetize our brand. This line of business monetizes SMUD strategies and lines of business that we have successfully delivered and provided to others as a product or service.

Some new net revenue areas in the 2019 Budget are:

- DER as a service to residential and commercial customers who are seeking onsite solar, battery storage or energy efficiency upgrades to provide more options from SMUD as a trusted energy advisor.
- Provide EV charging infrastructure as a service to commercial and multi-family customers to reduce barriers to EV adoption.
- Fleet electrification as a hassle-free service to allow commercial customers the flexibility and simplicity to convert their fleets to EVs.
- Participation in energy and power markets, selling transmission and ancillary services.
- Continued work on our Community Energy Services business for Valley Clean Energy and East Bay Community Energy.

2019 promises to be an exciting and transformational year for SMUD, and the budget includes funding for many industry-leading initiatives, such as TOD, ADMS, SolarShares® for developers and electrification, to position SMUD for future success. Staff will continue to update the Board on these issues throughout the upcoming year.

Respectfully submitted,



Arlen Orchard
Chief Executive Officer and General Manager

2019 Budget

Budget Summary

DRAFT

Powering forward. Together.



Overview

The 2019 Budget totals \$1.71 billion. This represents a decrease of \$25 million from the 2018 Budget. The 2019 Budget is a request to authorize new spending.

The 2019 SMUD Budget summarized on the following pages is a blueprint of planned operating, public goods and debt service expenses and capital expenditures for the fiscal year beginning January 1, 2019. Historical comparisons to the 2018 Budget adopted by the Board on December 21, 2017 are shown to put the 2019 Budget in perspective. A forecast of actual 2018 expenses is also shown.

The O&M and Capital Budgets are shown by Business Unit. SMUD Business Units correspond to business processes which deliver specific products and services to SMUD customers. The core business processes are represented by the Customer & Community Services, Energy Operations and Energy Delivery Business Units. Included within Energy Operations and Customer/Community are Public Good costs related to energy efficiency, low income assistance, renewable generation and research and development. These costs are shown separately because they are designated as Public Goods programs as determined by statute.

The Technology, Internal Services and Corporate Services Business Units provide services which enable the other business units to perform their work. The planning and budgeting philosophy is to more accurately plan and measure the total cost of SMUD business processes and set performance improvement targets for the processes and Business Units that will most efficiently accomplish strategic goals. This budgeting methodology also most efficiently allocates and plans resources from throughout SMUD to the Business Units and work processes.

Within each Business Unit budget, work processes are subdivided into business segments and individual business processes. Budget detail is provided at both levels. Business segments and processes enable each business unit to effectively plan and measure performance of its operations at a manageable level.

The budgeted costs shown under each core Business Unit include all the costs of performing the work planned for 2019. These include labor costs from departments throughout SMUD which perform work in the core business processes. Labor costs include employee benefits. Also included in the budget is a surcharge allocation of internal service costs such as transportation, facilities, technology, human resources, and security. Expenditures budgeted by Technology and Internal Services represent those process costs that are not allocated to the core business units, such as dedicated software implementations or enhancements that do not meet minimum SMUD criteria for capitalization. The Corporate Services budget includes insurance and risk management, cash and debt management, and corporate legal, reliability compliance, legislative, regulatory and government relations, planning and performance, executive management and Board of Directors; a portion of this budget is allocated to Capital and Public Good.

The 2019 Budget includes the following major components:

OPERATING EXPENSES: Expenses related to producing and acquiring energy, operating and maintaining the electrical delivery system, providing service to customers including public goods (energy efficiency, low income assistance, new renewable generation sources, and research and development of advanced technologies) programs, and corporate activities. Included within this category as a separate line item are commodity costs associated with energy supply. These costs include purchased power, fuel for energy production, and transmission wheeling costs.

Also included under Energy Operations are fuel, operating and interest expense associated with CVFA's Carson Cogeneration plant, SCA's Procter & Gamble plant, SPA's Campbell Soup Cogeneration plant, SFA's Cosumnes Power Plant, and NCGA No. 1 pass-through gas costs. These expenses are shown in the SMUD Budget because SMUD will reimburse CVFA, SCA, SPA, SFA and NCGA No. 1 for their costs under the terms of the Power and Gas Purchase Agreements. The detail CVFA, SCA, SPA, SFA and NCGA No. 1 Budgets are also in separate booklets as they will be approved by the CVFA, SCA, SPA, SFA and NCGA No. 1 Commissions.

CAPITAL INVESTMENT: Investment in additions and improvements to SMUD's property, plant and equipment. The Capital Investment budget includes all qualifying costs related to acquiring or constructing tangible and intangible assets which meet SMUD's capitalization guidelines - cost exceeding \$5,000 and an estimated service life greater than two years. SMUD follows Federal Energy Regulatory Commission (FERC) capitalization guidelines which dictate the inclusion of all direct costs (labor, employee benefits, materials, services and other) and a proportionate share of indirect costs (engineering and construction supervision and support, transportation, insurance, etc.) related to capital projects. Capital assets are depreciated on a straight-line basis over their estimated useful service life.

ALLOCATED: Costs in the two supporting business units, Technology and Internal Services, which enable the core business units to perform work. These costs are allocated to both O&M and capital costs, based on the quantity of labor hours. The aggregated allocated costs for Technology and Internal Services are presented in the budget documentation separately as information only; the actual costs are reflected in each of the Business Unit's budgets as the total cost of their work processes.

DEBT SERVICE: Interest expense on and principal repayments of SMUD's outstanding long-term debt and commercial paper notes, any revenues or payments on interest rate swaps, and trustee fees and debt issuance costs. Detail is provided in the Budget Summary.

Description of Cost Categories

Activity Type Labor	SMUD employee labor planned to a business unit work process. Each Activity Type has a standard hourly charge-out rate that is based on work (non-leave) hours, average annual employee salaries, and includes benefits.
Materials & Equipment	Materials and equipment either issued from inventory or purchased for a specific project or task.
Dues & Publications	Dues and publications and general membership requirements to accomplish work.
General Expenditures	All services and other non-material costs not covered by other specific cost categories including training, travel, rents, leases, licenses, fees, taxes, etc.
Outside Services	The cost of outside services contracts, consultants, and outside legal service.
Advertising	The cost of advertising.
Utilities & Postage	The cost of telephones, other utilities and postage.
Insurance	The cost of property and liability insurance.
Rebates & Incentives	The cost of energy efficiency rebates and incentives.
Commodities	The cost of purchased power, wheeling, and fuel for SMUD and JPA generating plants.
Surplus/Whsl Pwr Sales	The revenue generated from selling energy which is not needed to meet SMUD retail load.
LI/LS Rate Discount	The discount given to customers who qualify for the Low Income or Medical Energy Discount (MED) rate subsidy.
Cost Reductions/Reimb	Reimbursements, cost-sharing grants, or pass-through amounts received from outside parties to reduce net costs.
Cost Center Overhead	A rate developed to recover the indirect costs of a Cost Center. Includes Activity Type labor for administration, supervision, training, and miscellaneous general expenses such as office supplies and travel. It is assessed per hour of Activity Type Labor planned directly to the work.
Surcharges	Surcharge rates developed to recover 1) an allocation of internal service costs such as transportation and technology assessed per hour of Activity Type Labor planned directly to the work, 2) the costs of procuring outside service agreements (excluding outside legal service) and cost of procuring, storing, and handling materials and equipment assessed relative to the contract amount or whether material issued from inventory or purchased specifically for a project or task, 3) miscellaneous general and administrative SMUD expenses including insurance and risk management, cash management, debt management, and other assessed to capital and public good projects based on a flat percentage of overall SMUD activity type labor.

O&M Budget Summary



Description (\$000s)	2018 Budget	2018 Forecast	2019 Proposed	\$ Change vs Frcst	% Change vs Frcst
<i>Customer/Community (excl. PubGd)</i>	113,733	110,728	122,010	11,282	10%
<i>Public Good</i>	40,324	44,316	45,661	1,345	3%
Customer/Community	154,057	155,044	167,671	12,627	8%
<i>Energy Delivery (excl. JPA)</i>	200,359	192,564	196,749	4,185	2%
<i>JPA Interest Expense</i>	8,674	8,674	7,576	(1,098)	-13%
Energy Delivery (excl. JPA)	209,033	201,238	204,325	3,087	2%
<i>Commodity (net)</i> [1]	435,134	426,173	448,091	21,918	5%
<i>Energy Operations (excl. PubGd)</i>	79,304	79,429	84,527	5,097	6%
<i>Public Good</i>	14,681	12,156	15,629	3,473	29%
Energy Operations	529,119	517,758	548,246	30,488	6%
Internal Svcs	13,221	28,760	12,893	(15,867)	-55%
Technology	37,464	34,584	39,308	4,723	14%
Corporate Services	63,041	60,215	78,022	17,807	30%
Other Employee Benefits [2]	29,859	25,237	30,634	5,396	21%
O&M Budget Authorization	\$1,035,795	\$1,022,837	\$1,081,099	\$58,262	6%
Revenue	(203)	(108)	(55)	53	49%
O&M Net	\$1,035,592	\$1,022,730	\$1,081,044	\$58,314	6%

[1] Net of surplus sales. The 2019 Budget assumes median water year.

[2] Other Post-Employment Benefits (OPEB) and Workers Compensation - These benefits are not allocated or included as a labor expense in the Business Units.

O&M Budget Summary (continued)



Cost Category* (\$000's)	2018 Budget	2018 Forecast	2019 Proposed	\$ Change vs Frcst	% Change vs Frcst
ActivityType Labor	\$211,833	\$213,611	\$228,683	\$15,072	7%
<i>Material & Equipment</i>	10,929	9,262	11,057	1,796	19%
<i>Dues & Publications</i>	6,288	5,710	6,846	1,136	20%
<i>General Expenditures</i>	24,373	35,459	31,994	(3,465)	-10%
<i>Outside Services</i>	146,742	130,926	128,243	(2,683)	-2%
<i>Advertising</i>	3,866	2,859	3,707	849	30%
<i>Utilities & Postage</i>	7,397	7,559	7,243	(316)	-4%
<i>Insurance</i>	13,166	14,284	18,931	4,647	33%
<i>Rebates & Incentives</i>	23,234	24,662	27,452	2,790	11%
<i>Commodities</i> [1]	499,013	489,179	562,737	73,559	15%
<i>Surplus/Whsl Pwr Sales</i>	(37,817)	(54,021)	(72,620)	(18,598)	34%
Non-Labor Expenditures	697,190	665,877	725,592	59,715	9%
Cost Reduction/Reimb	(40,103)	(25,205)	(54,783)	(29,578)	117%
Cost Center Overhead	46,755	52,104	51,746	(358)	-1%
Surcharges	81,586	82,539	91,651	9,112	11%
Expenditures Subtotal	997,261	988,926	1,042,889	53,963	5%
JPA Interest	8,674	8,674	7,576	(1,098)	-13%
Other Employee Benefits	29,859	25,237	30,634	5,396	21%
O&M Budget Authorization [2]	\$1,035,795	\$1,022,837	\$1,081,099	\$58,262	6%
Revenue	(203)	(108)	(55)	53	49%
O&M Net	\$1,035,592	\$1,022,730	\$1,081,044	\$58,314	6%

[1] Net of surplus sales. The 2019 Budget assumes median water year.

[2] O&M Budget Authorization includes Public Good. A summary of Public Good is provided on the following page. The budget resolution provides up to a ten percent contingency per line item.

*Cost categories described on page 29

O&M Budget Summary (continued)



Public Good

2019 Summary (\$000)	Customer/ Community	Energy Operations	Total
Energy Efficiency	\$33,988	\$759	\$34,747
Residential Assistance	8,946	0	8,946
Renewables	2,728	0	2,728
Research & Development	0	14,870	14,870
Public Good Budget Authorization [1]	\$45,661	\$15,629	\$61,290
Revenue	0	0	0
Rate Subsidy	0	0	32,629
Total Public Good [2]	\$45,661	\$15,629	\$93,919

[1] Public Good expenditures are included in SMUD O&M summary (this table is information only)

[2] Specific information is provided within Customer/Community & Energy Operations Business Units

The O&M Budget for 2019 totals \$1,081 million, which is \$45.3 million or 4 percent higher than the 2018 Budget.

Commodities: The Energy Operations Commodity budget for 2019 of \$448.1 million is \$13.0 million higher than the 2018 Plan. Details on the commodity assumptions in the 2019 Budget are found on pages 20-24.

Business Unit:

- **Energy Operations:** Excluding commodities and public good, O&M costs in 2019 Budget total \$84.5 million, which is \$5.2 million or 7 percent higher than the 2018 Budget. The 2019 budget is higher due to the new Bring Your Own Thermostat project, new modeling software costs for Energy Trading and the implementation of the Energy Imbalance Market.
- **Energy Delivery:** Excluding JPA interest, the 2019 Budget for O&M totals \$196.7 million, which is \$3.6 million or 2 percent lower than the 2018 Budget. The 2019 budget includes costs for overhaul expenses, Solano Wind Phase 1 & 2, and work related to wildfire mitigation which includes UARP easement widening and routine tree trimming.
- **Customer/Community:** Excluding public good, the 2019 O&M Budget is \$122.0 million; this is \$8.3 million higher than the 2018 Budget. The increases are primarily driven by changing business needs, Time of Day outreach and communication, and increasing customer programs such as SolarShares®, building electrification, and electric vehicle programs.
- **Corporate Services:** O&M costs in the 2019 budget total \$78 million, which is \$15 million or 24 percent higher than the 2018 budget. This increase is primarily driven by increased insurance needs and contingency amounts for the enterprise.

- **Technology:** 2019 O&M budget is \$39.3 million, this is \$1.8 million higher than the 2018 budget. The increase is related to the costs of planning for capital projects as well as planning and implementing O&M projects proposed for 2019 such as Telecommunications GIS Fiber Audit, Wireless Broadband Feasibility and Telecommunications DC Battery Monitoring.
- **Internal Services:** O&M total is \$12.9 million; this is a decrease of \$0.3 million. This decrease is primarily due to shifting the GIS project from Internal Services to technology beginning in 2019.

Specific information is provided within each Business Unit's documentation

Public Good: Total Public Good is \$93.9 million, an increase of \$2.1 million, after inclusion of grant revenues and rate subsidy. The Public Good Budget is \$61.3 million. The difference is because the Budget represents the cash disbursement portion of the program that requires Board authorization.

The subsidy for low income customers is decreasing by \$8.6 million, or 22%. By December 2019, the number of subsidized customers is expected to be approximately 73,989. The total cost of the EAPR subsidy is budgeted at \$30.7 million in 2019. The subsidy for customers who use medical equipment has increased by \$0.2 million to \$1.9 million. Total subsidies are \$32.6 million.

Energy efficiency spending has been adjusted upwards by \$5.5 million to reflect an increase due to new building electrification work and the incorporation of savings from building and equipment codes and standards. Incorporation of savings from codes and standards was included as a component of the portfolio to match standard industry practice going forward. The energy efficiency budget remains in line with the goal of achieving savings of 1.5% of average annual retail energy sales.

Specific information is provided within Customer & Energy Operations Business Unit documentation

Other Employee Benefits: SMUD's Other Employee Benefits, is \$30.6 million, an increase of \$0.7 million. This item consists of the O&M portion (unfunded liability) of Other Post-Employment Benefits (OPEB) expense of \$27.0 million and \$3.6 million of workers compensation.

The total OPEB cost of \$36.9 million is the sum of the O&M portion of \$27.0 million and the current year contribution of \$9.9 million. OPEB are costs related to other post employment benefits other than pension (primarily health and dental insurance), for SMUD current and future retirees.

Revenue: In our proforma income statement, SMUD has included revenue from electric sales in addition to forecasted revenue from Greenergy®, field service charges, and customer connection charges. Revenue from electric sales has increased compared to the 2018 Budget due to the impact of the 2019 rate increase.

Capital Budget Summary



Description (\$000s)	2018 Budget	2018 Forecast	2019 Proposed	\$ Change vs Frctst	% Change vs Frctst
Customer/Community	\$ 3,318	\$ 3,051	\$ 4,518	\$ 1,467	48%
Energy Delivery	207,481	186,249	213,329	27,080	15%
Energy Delivery Resource Projects [1]	76,909	46,445	68,559	22,114	48%
Energy Operations	6,496	5,764	5,308	(456)	-8%
Energy Operations Resource Projects [1]	6,675	5,027	6,072	1,045	21%
Internal Services [2]	88,195	84,785	54,143	(30,642)	-36%
Technology	72,422	45,498	42,227	(3,271)	-7%
Corporate Contingency & Reserve	42,900	6,000	49,700	43,700	728%
CAPITAL SUBTOTAL	\$ 504,396	\$ 382,819	\$ 443,856	\$ 61,038	16%
Reserve [3]	15,000	0	0	0	0%
Capital Budget Authorization	\$ 519,396	\$ 382,819	\$ 443,856	\$ 61,038	16%
Revenue [4]	(487)	(1,465)	(705)	760	52%
Capital Net	\$ 518,909	\$ 381,353	\$ 443,151	\$ 61,798	16%

[1] Includes projects that support the Integrated Resource Plan

[2] Internal Services capital projects include \$31M for Headquarters Rehabilitation and \$4M for Power Control Center in 2019

[3] Capital Reserve is included in Corporate Contingency & Reserve starting in 2019

[4] DOE Grant Reimbursement

Capital Budget Summary (continued)



Project Summary (\$000s)	2019 [1]	2020-21 [2]
<i>Meters</i>	4,518	9,444
Customer/Community	\$ 4,518	\$ 9,444
<i>New Substation</i>	63,423	63,346
<i>Line Projects</i>	37,561	47,528
<i>Substation Lifecycle and Improvements</i>	11,535	21,868
<i>Cable Replacement</i>	21,918	57,493
<i>New Services/Local Agency</i>	15,240	27,408
<i>Pole Replacement</i>	16,456	33,329
<i>Transmission</i>	33,880	18,955
<i>Hydro Production</i>	14,404	25,914
<i>Renewable Production</i>	2,848	1,348
<i>Gas Pipeline</i>	655	925
<i>Thermal Production</i>	2,185	450
<i>Other Energy Assets</i>	424	813
Energy Assets	\$ 220,528	\$ 299,376
<i>Thermal</i>	14,500	-
<i>Hydro License</i>	9,854	32,371
<i>Hydro Other</i>	27,543	8,957
<i>Decommissioning</i>	5,562	11,860
<i>Other Energy Assets Resource</i>	3,901	39,636
Energy Assets Resource	\$ 61,360	\$ 92,825
<i>Energy Operations Technology</i>	1,164	600
<i>Interconnection</i>	1,706	3,529
<i>Substation Land & Easement</i>	2,438	1,326
Energy Operations	\$ 5,308	\$ 5,455

Capital Budget Summary (continued)



Project Summary (\$000s)	2019 [1]	2020-21 [2]
Gas	3,250	6,500
Transmission	2,822	1,460
Energy Operations Resource	\$ 6,072	\$ 7,960
Headquarters Rehabilitation	31,056	-
Power Control Center	4,260	39,422
Facilities	8,036	18,240
Vehicle Replacement	8,322	-
Environmental	2,469	9,791
Internal Services	\$ 54,143	\$ 67,453
Telecom	10,486	11,531
DMS	9,474	3,806
Shared Services Technology	6,348	-
Grid Technology	10,650	7,942
IT Lifecycle and Infrastructure	5,110	4,383
Time of Day	160	-
Technology	\$ 42,227	\$ 27,663
Corporate Contingency [3]	49,700	105,400
Capital Subtotal	\$ 394,156	\$ 615,576
Capital Budget Authorization [1] [2]	\$ 443,856	\$ 615,576

[1] Requested Board Authorization amount for 2019 spending.

[2] Provided for Board information as an estimate of the amount needed to complete projects started in 2019 or earlier. 2020-21 costs do not include amounts for ongoing annual programmatic spending or for projects starting after 2019.

[3] 2019 Corporate Contingency

Capital Budget Summary (continued)



Cost Category* (\$000's)	2018 Budget	2018 Forecast	2019 Proposed	\$ Change vs Frcst	% Change vs Frcst
ActivityType Labor	\$63,905	\$58,714	\$65,192	\$6,478	11%
<i>Material & Equipment</i>	77,898	68,761	66,026	(2,735)	-4%
<i>Dues & Publications</i>	208	202	211	8	4%
<i>General Expenses</i>	75,246	17,407	68,978	51,571	296%
<i>Outside Services</i>	270,214	209,669	213,442	3,773	2%
<i>Utilities & Postage</i>	0	14	8	(6)	-42%
<i>Insurance</i>	592	637	645	8	1%
Non-Labor Expenses	\$424,157	\$296,690	\$349,309	\$52,619	18%
Cost Reduction/Reimb	(\$39,426)	(\$26,104)	(\$27,153)	(\$1,049)	4%
Expenditures	\$448,636	\$329,300	\$387,348	\$58,048	18%
Cost Center Overhead	18,008	17,909	19,120	1,211	7%
Surcharges	37,752	35,609	37,388	1,779	5%
Capital Total	\$504,396	\$382,819	\$443,856	\$61,038	16%
Reserve [1]	15,000		0	0	0%
Capital Budget Authorization	\$519,396	\$382,819	\$443,856	\$61,038	16%
Revenue [2]	(487)	(1,465)	(705)	760	52%
Capital Net	\$518,909	\$381,353	\$443,151	\$61,798	16%

*Cost categories described on page 29

[1] Capital Reserve is planned in Corporate Services starting in 2019

[2] DOE Grant Reimbursement

SMUD has historically had two categories of capital for budget authorization, Annual and Reserve Capital. Annual Capital are projects with completion dates or specific milestone dates within the current budget year and as such budget dollars are requested during the annual budget cycle. Projects that were approved in prior years but have not been completed are resubmitted to the Board annually for approval to continue the project. Reserve Capital projects will be completed if load growth or customer growth is greater than expected, or if there are unexpected expenditures, or if there are projects in which the planning phase will be completed and work will begin in 2019. Beginning in 2019, Reserve Capital is planned within the Corporate Business Unit.

A summary of Business Unit Capital is provided on the following pages and specific information is provided within each Business Unit's Documentation.

Capital: The proposed 2019 capital investment budget is \$443.9 million, for planned investment in generation, transmission, distribution, buildings, vehicles, technology and other assets critical to meeting the energy needs of our customers. Proposed ongoing capital expenditures go through a rigorous evaluation and prioritization process, based on value and risk, to ensure we fund those that have the highest contribution to the Board's strategic directives. Resource projects are evaluated and funded through the Integrated Resource Planning process. This total includes the Reserve Capital Budget of \$15.0 million for unexpected end-of-year project carryover and capital contingency.

Customer/Community Capital: Customer Business Unit capital expenditures include \$4.5 million for metering equipment.

Energy Delivery Capital: These projects represent capital improvements and investment in the energy delivery infrastructure such as overhead and underground lines and substations that deliver electricity to our customers. Proposed capital investment for 2019 is \$213.3 million. Of this total, \$38 million is for pole and cable replacement, \$103.2 million is for improvements to existing substations, rebuilds of Station G and Station E, construction of the new Franklin substation as well as the new Street Car project. \$15 million is for new services and local agency work.

Energy Delivery Resource Projects: Resource project capital spending for the 2019 budget totals \$68.6 million, of which \$35.6 million is for hydro. In addition, \$5.6 million is for nuclear decommissioning.

Energy Operations Capital: These projects focus on customer interconnection, telemetry and substation land. The proposed capital investment for 2019 is \$5.3 million.

Energy Operations Resource Projects: Resource project capital spending for the 2019 Budget totals \$6.1 million, which includes \$2.8 million for CoSu transmission line and \$3.3 million for new power and gas projects and gas reserves.

Internal Services Capital: Internal Services Business Unit capital investments in the 2019 Budget total \$54.1 million. Of this, \$31 million is for the Headquarters Rehabilitation, \$4 million is for the Power Control Center, \$6.3 million is for facilities improvements, \$8.3 million for vehicle replacements, and \$1.8 million for pollution remediation.

Technology Capital: Technology Business Unit capital projects are for additions or improvements to SMUD's computer network, including hardware and operating software, the SAP enterprise software system, distribution automation systems, document management, desktop and laptop PCs, and telecommunications and telephone system infrastructure. The Technology capital budget for 2019 totals \$42.2 million. The business unit is planning \$2.9 million for lifecycle and infrastructure programs to replace storage, network, and applications out of support. The 2019 Budget includes work on multi-year initiatives such as \$8.4 million for Workforce Mobility Optimization, \$9.5 million for Advanced Distribution Management System, \$5.8 million for network communications transformation, and \$3.9 million for improvements to Human Resources and Supply Chain back-office systems. New work in 2019 includes \$1.7 million for replacement of microwave radios for communication between SMUD headquarters and Fresh Pond and \$1.1 million for new microwave radio links to Solano Windfarm.

Corporate Capital Contingency & Reserve: Corporate Business Unit capital investments in the 2019 Budget total \$49.7 million. The business unit is holding contingency money for the following potential items: additional Technology projects, Downtown Street Car, system enhancement projects, Rule 16 additional development, CPP spare parts, and records management work associated with Workplace 3.0. Beginning in 2019, Reserve Capital of \$15 million is included in Corporate Capital.

Specific information is provided within each Business Unit's Documentation

Allocated Budget Summary



Description (\$000s)	2018 Budget	2018 Forecast	2019 Proposed	\$ Change vs Frctst	% Change vs Frctst
<i>Supply Chain</i>	\$ 14,229	\$ 14,889	\$ 14,967	\$ 77	1%
<i>Fleet & Fuel</i>	8,569	8,633	9,398	765	9%
<i>Other Internal Services</i> ^[1]	42,770	41,989	46,023	4,035	10%
Internal Services	65,568	65,511	70,388	4,877	7%
Technology	51,408	52,078	59,800	7,722	15%
Total Allocated Budget ^[2]	\$116,976	\$117,589	\$130,188	\$12,599	11%

^[1] Other Internal Services: Health & Safety, Organizational Development, Inclusion, Fire Protection, Security, Postal & Print Shop, Graphics, Human Resources, Labor Relations, Facilities and Fleet (excluding fuel)

^[2] Allocated Budget expenditures are included in all SMUD Business Unit's O&M and Capital summaries (this table is information only)

Allocated Budget Summary (continued)



Cost Category* (\$000's)	2018 Budget	2018 Forecast	2019 Proposed	\$ Change vs Frctst	% Change vs Frctst
ActivityType Labor	\$55,374	\$55,259	\$58,729	\$3,470	6%
<i>Material & Equipment</i>	7,529	9,945	13,296	3,351	34%
<i>Dues & Publications</i>	61	29	38	10	33%
<i>General Expenses</i>	1,123	1,491	1,305	(186)	-12%
<i>Outside Services</i>	31,839	29,016	33,394	4,378	15%
<i>Advertising</i>	153	151	153	2	2%
<i>Utilities & Postage</i>	1,560	1,477	1,752	275	19%
<i>Insurance</i>	161	142	420	278	195%
Non-Labor Expenses	\$42,426	\$42,251	\$50,358	\$8,107	19%
Cost Reduction/Reimb	(\$81)	(\$413)	(\$86)	\$327	79%
Expenditures	97,720	97,097	109,002	11,905	12%
Cost Center Overhead	14,456	15,668	15,814	145	1%
Surcharges	4,800	4,823	5,372	549	11%
Total Allocated Budget [1]	\$116,976	\$117,589	\$130,188	\$12,599	11%

*Cost categories described on page 29

[1] Allocated Budget expenditures are included in all SMUD Business Unit's O&M and Capital summaries (this table is information only)

The Allocated Budget for 2019 totals \$130.2 million, which is \$13.2 million higher than the 2018 budget. This is shown as **information only** as 100% of these allocated expenditures are included in the budget dollars of all SMUD O&M and Capital described in this documentation. Internal Services and Technology costs are allocated to business units based on the quantity of labor hours.

- **Internal Services Allocated:** The budget for Internal allocated is \$70.4 million. It is increasing by \$4.8 million over 2018 budget. This increase is driven by additional work for Facilities & Maintenance, support of changes to high voltage/electrical grounding procedures to comply with Cal-OSHA Title 8 rules, training requirements for Security staff and anticipated fuel cost increases.
- **Technology Allocated:** Technology Allocated in the 2019 budget is \$59.8 million, an increase of \$8.4 million over 2018 budget. 2019 reflects increased labor and outside services costs for ongoing support of enterprise systems, the new Data Analytics and Network Transformation efforts, as well as support of Energy Trading systems. Additionally, 2019 reflects increases in maintenance and support costs for the SAP Enterprise system, Smart Meter network support services hosting fees (Silver Spring Networks), new distribution and sub-transmission design tool, Enterprise document management system and information security systems.

Specific information is provided within Internal & Technology Business Unit Documentation

Position Count Summary



Executive Hierarchy	2018 Full-time	2018 Limited Term	2018 Part-time	2018 Approved Positions	2019 Full-time	2019 Limited Term	2019 Part-time	2019 Positions Planned	Increase/Decrease
CEO & General Manager	38	5	2	45	33	21	9	63	18
Chief Legal Officer	41	1	2	44	42	2	4	48	4
Chief Financial Officer	84	8	10	102	91	2	10	103	1
Chief Energy Delivery Officer	694	16	14	724	698	19	14	731	7
Chief Grid Strategy & Operations Officer	286	4	23	313	286	3	23	312	(1)
Chief Customer Officer	411	22	101	534	409	22	102	533	(1)
Chief Workforce Officer	365	15	9	389	369	15	10	394	5
Chief Information Officer	230	9	30	269	240	12	43	295	26
Full-time				2,149				2,168	19
Limited Term				80				96	16
Part-time				191				215	24
SMUD Total ^[1]	2,149	80	191	2,420	2,168	96	215	2,479	59

[1] The 2019 position count change from 2018 is +59; however, the 2019 funding level change is increasing by 56 full-time equivalent (FTE) positions based on planned hours. The difference between position count and FTE is to account for vacancies during the hiring process and part-time positions.

Position Count: The full-time count is identified in the Board Resolution and the budget provides funding for less than the total position count to account for vacancies during the hiring process.

Labor Cost Summary



Executive Hierarchy (\$000)	2018 Budget	2018 Forecast	2019 Proposed	\$ Change vs Frcst	% Change vs Frcst
CEO & General Manager	\$7,381	\$7,750	\$8,543	\$794	16%
Chief Legal Officer	5,461	5,732	6,160	427	13%
Chief Financial Officer	10,893	10,836	11,308	472	4%
Chief Generation & Grid Assets Officer	91,736	93,999	95,917	1,918	5%
Chief Grid Strategy & Operations Officer	39,559	40,048	42,565	2,517	8%
Chief Customer Officer	43,768	45,171	44,935	(236)	3%
Chief Workforce Officer	38,785	38,297	39,971	1,674	3%
Chief Information Officer	30,777	30,662	34,511	3,849	12%
Salaries & Wages*	\$252,356	\$252,539	\$267,104	\$14,565	5.8%
Overtime	\$16,004	\$19,956	\$16,807	(\$3,149)	5.0%
SMUD TOTAL	\$268,360	\$272,495	\$283,911	\$11,416	4.3%

*Salaries & Wages includes paid leave ----- 2018 Budget not adjusted for any organizational realignment

Labor Salaries: The labor summary reflects the cost of wages for SMUD employees. The budget for labor and associated benefit costs is included on the previous budget summary pages.

2019 Budget Debt Service

Powering forward. Together.



Debt Service Budget



The following schedules show the summary and details of the 2019 Budget for Debt Service. SMUD issues Electric Revenue Bonds and Commercial Paper Notes to finance long-lived capital assets. The Debt Service Budget includes accrued interest expense on outstanding Electric Revenue Bonds and Commercial Paper Notes, net of any swap revenues tied to debt issues, scheduled principal repayments of Bonds and Commercial Paper, trustee fees associated with administration of debt service payments, and interest expense and issuance costs associated with planned new debt issues.

Revenue Bond Interest totals \$92.6 million in the 2019 Budget, an increase of \$3.5 million from 2018.

Commercial Paper Interest totals \$10.6 million in the 2019 Budget, an increase of \$6.5 million from 2018. Short-term interest rates assumed for 2019 are slightly higher than those assumed for 2018 and there is an increase to the commercial paper program of \$88.8 million.

Scheduled Principal Repayments of revenue bonds and commercial paper notes total \$87.4 million in 2019, a \$11.1 million increase from 2018.

Trustee and Rating Agency Fees of \$270 thousand are similar to the amount budgeted in 2018.

Bond Issuance Costs of \$1.5 million are included for two new 2019 bond issuances.

Debt Service Budget (continued)



Summary (\$000s)	2018 Budget	2018 Forecast	2019 Proposed	\$ Change vs Frcst	% Change vs Frcst
Interest Expense <small>[1]</small>	\$95,198	\$93,207	\$103,208	\$10,001	11%
Principal Repayments	90,920	76,300	87,425	11,125	15%
Trustee & Rating Agency Fees	250	243	270	27	11%
Bond Issuance Costs	1,120	600	1,493	893	149%
Total Debt Service	\$187,488	\$170,350	\$192,397	\$22,046	13%
Allocated to JPAs	(6,389)	(6,389)	(6,314)	75	-1%
NET DEBT SERVICE	\$181,099	\$163,962	\$186,083	\$22,121	13%

[1] Build America Bonds are shown gross of the rebate of \$9.2 million expected in 2019. The budget authorization is requested gross of the rebate. Includes net debt related swap payments and interest on long-term, variable rate, and subordinated debt. Assumes an interest rate of 2.66% (incl. all related fees & swaps) on avg. commercial paper balance of \$288.75 million.

The Debt Service component of the 2019 Proposed totals \$192.4 million, an increase of \$4.9 million or 13% percent over 2018. The increase is due to a normal fluctuation in debt service schedules.

Interest expense represents accrued interest on revenue bonds and commercial paper, net of any related swap revenue. The credit for debt service charged to the JPAs represents the portion of the interest expense on the District's investments in the PG&E Line 301/400 pipeline, the local gas pipeline (including Cosumnes extension) and the Rosa natural gas reserves which is allocated to the cogeneration plants for fuel delivery and included in the SMUD and JPA budgets under fuel commodity. Principal repayments represent scheduled repayment of revenue bonds and commercial paper notes.

Debt Service Budget (continued)



SUMMARY OF DEBT SERVICE ON EXISTING SMUD BOND ISSUES (\$000'S)						
Date Issued	Issue	1/1/2019 Principal Balance	Issued Interest Rate	Final Maturity Date	2019 Scheduled Principal Payment	2019 Interest Expense
Electric Revenue Bonds						
Jun-97	Series K ¹	103,455	5.25% to 5.90%	2024	14,985	1,815
May-08	Series U (Refunding)	0	3.00% to 5.00%	2028	-	0
May-09	Series V ²	200,000	6.322% (4.11% net)	2036	-	12,644
Jul-10	Series W ³	250,000	6.156% (4.00% net)	2036	-	15,390
Sep-11	Series X (Refunding)	210,825	1.50% to 5.00%	2036	22,385	10,022
Jan-12	Series Y (Refunding)	180,395	3.00% to 5.00%	2033	5,330	8,652
May-13	Series A	132,020	3.75% and 5.00%	2041	-	6,592
May-13	Series B (Refunding)	93,975	3.00% to 5.00%	2033	3,340	4,487
Jul-16	Series D (Refunding)	149,890	5.00%	2028	10,085	7,152
Dec-17	Series E (Refunding) ⁴	187,515	3.00% to 5.00%	2028	16,760	9,059
Aug-18	Series F (Refunding)	165,515	5.00%	2028	14,540	8,001
Apr-19	Series G ⁵	0	5.00%	2049	-	8,750
Subtotal		1,673,590			87,425	92,564
Total Outstanding Bonds		\$1,673,590	Principal & Interest Payments		87,425	92,564
Total Debt Service					\$87,425	\$92,564

1) Swapped to a variable rate for the life of the debt, interest expense net of swap payment. Interest expense without swap would be \$5,182,265.

2) Interest expense gross of federal government Build America Bond rebate of \$4,151,025.

3) Interest expense gross of federal government Build America Bond rebate of \$5,052,537.

4) Refunding issue forecast for 2017.

5) New money issue forecast for 2018.