Exhibit to Agenda Item #1b
Technology 2021 Proposed Budget

Board Finance & Audit Committee and Special SMUD Board of Directors Meeting
2021 Proposed Budget
November 12, 2020, scheduled to begin at 5:30 p.m.
Virtual Meeting (online)
Technology
2021 Proposed Budget & Initiatives

Stephen Clemons
Chief Information Officer
## Business Segments & Functions

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<th>Strategy, Planning &amp; Governance</th>
<th>Strategic Initiatives</th>
<th>Infrastructure &amp; Operations</th>
<th>Cybersecurity</th>
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<td>Cyber Governance, Risk &amp; Compliance</td>
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<td>Operational Support</td>
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<td>CIP Compliance</td>
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<td>Problem Resolution</td>
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<td>Problem Resolution</td>
<td>Cyber &amp; Privacy Program</td>
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<tr>
<td>Technology Enhancements</td>
<td>Service Management</td>
<td>Planning &amp; Assessment</td>
<td>Threat Assessment &amp; Response</td>
<td>Technology Enhancements</td>
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<td>Contracts &amp; License Management</td>
<td>Planning &amp; Assessment</td>
<td>System Security Operations</td>
<td>Planning &amp; Assessment</td>
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<tr>
<td>Analytics &amp; Data Governance</td>
<td>Compliance</td>
<td>Incident Response &amp; Emergency Operations</td>
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<td>Enterprise Architecture</td>
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<td>Project Management</td>
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In 2021, $18.2M in Savings is built into the Proposed Budget.
Keeping the Lights On

Securing, maintaining and ensuring availability of the technology that enables staff to power SMUD forward. $59.6 million proposed for 2021.

- We maintain applications used across SMUD to high standards of reliability.
  - **99.99%** reliability of key systems: SAP, Outage, OMS, MyAccount, IVR, Meter Data Management System – Data System for billing
  - Manage the total portfolio of applications which number over 1,000
  - Manage software assets to ensure they meet license audit requirements
  - Supporting every business unit with their technology needs

- We manage complex interconnections of systems and data, both internal and external

- We ensure security of our systems through monitoring and updates
  - Security operations center
  - Patching and updates

- We provide technology support services for all staff in all environments

- We refresh hardware and software, on-time and on-budget

$7.1M in savings in 2021 for this planning theme
Keeping the Lights On

▪ Continue emphasis on safety, emphasizing safety in remote work environments  

▪ Support **business continuity** so that our employees can be connected and productive at all times, no matter the situation

▪ Ensure that SMUD’s applications and technology infrastructure are **available, reliable, secure and in compliance**

▪ Continually monitor all our systems for availability through our Network Operations Center

▪ Work throughout SMUD to provide **innovative technology** solutions
Keeping the Lights on – Itron Outage

- On April 11, we experienced a UIQ outage. UtilityIQ – UIQ – is a headend software suite that includes applications designed to help utility operators collect and manage AMI meter consumption data. Outage Staff in IT and Customer, working remotely with Itron, immediately began to resolve this Issue. Timeline below:

- Itron reported GMR sensor issue at 4/11 8:50pm
- 4/11 8:05 pm Read Job ran but did not complete
- 4/11 12:05am & 4/12 4:05am Read Jobs did not run
- 4/11 10:00 pm & 4/12 2am Export Jobs did not run
- Between 4/12 5-6am, GMR was restarted (Database and UIQ stack)
- 4/12 6:00 am export job and completed
  - Transfer was the results of the 8:05 pm read, which was Incomplete
  - We are still missing complete data for the 4/11 reads
- 4/12 8:05am read job did not run
- 4/13 Issue was resolved
Optimization & Operational Excellence

Delivering technologies that enables work to be accomplished effectively in any environment. Supporting all enterprise strategic initiatives. $16.4 million proposed for 2021.

- Provide technology that delivers strategic goals
  - Collaboration tools
  - Additional capacity for remote work
- Partner with Business Units to deliver technology that leads to increased value delivered to customers and staff
  - Finding the right applications that cost-effectively meet SMUD’s needs
  - Dedicated Business Management and Business Transformation teams
- Analytics and data management tools that facilitate decision making
  - Business Intelligence and Analytics agile team
  - Dashboards in support of COVID-19 response teams
  - Sustainable Communities Resource Priorities map

$4.3M in savings in 2021 for this planning theme
COVID Challenge: Transition to Remote Work

Proactively moved to cloud-based applications and collaboration tools that enabled business continuity necessary as a result of COVID.

- Expanded remote access capacity
- Increased remote patching capability
- Successfully supported expansion of users from 100 to 1,400, kept SMUD employees on the job
- Accelerated rollout of Microsoft Teams with “on the fly” change management to drive adoption
- Help desk teams worked long and hard to keep SMUD staff working, with support from other Business Units
  - Customer & Community Services staff taking advantage of training opportunities
  - Staff unable to do their regular work due to COVID pitched in
COVID Challenge: Home-Based Agents

Contact Center agents were transitioned to remote work, keeping the Contact Center operational

- Productivity and service levels were maintained

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<tr>
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<th>Pre-COVID</th>
<th>Post-COVID</th>
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<tr>
<td>Home-Based Agents</td>
<td>24</td>
<td>122</td>
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<tr>
<td>Average Speed of Answer</td>
<td>48 seconds</td>
<td>20 seconds</td>
</tr>
<tr>
<td>Service Level</td>
<td>93.45%</td>
<td>93.91%</td>
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- The home-based agents expressed appreciation

“I am so grateful to work for a company like SMUD. I have been so impressed with how the COVID-19 pandemic has been handled, as well as the opportunity to stay safe and work from home”

“I am so happy working from home. I feel more productive and my stats have all improved”

“It was an amazing experience. I feel much better mentally to not have to drive in traffic to work everyday”
COVID Challenge: Looking Forward

• We are prepared to support any configuration of the SMUD workforce now and into the future
   - New functionality, optimized processes
     • Remote work tools (Remote PC / Teams enhancements)
     • Revamp patching process to minimize work impact
   - Further training on best use of remote tools
   - Hotel stations at SMUD sites

• Expense management
  - Provide employees with one fully-equipped workstation (either remote or in-office)

• Empower the workforce of the future
  - Transition from office work to “anywhere work”
  - Technology to deliver full productivity, access and ability to collaborate and succeed with improved collaboration
Optimization & Operational Excellence

- Deliver SAP C/4 cloud-based technology to integrate contact management and marketing email functions  
  - SD-5
- Increase use of chatbots to provide 24/7 support for more customer experiences  
  - SD-5
- Utilize Business Transformation best practices to help business units harvest full value from technology deployments  
  - SD-2, 8
- Complete planning work for the transformation of our core Enterprise Resource Planning systems that are the foundational tools for SMUD’s workforce  
  - SD-2, 4, 17
- Begin implementation of upgraded Human Resources systems to provide a robust and integrated suite of tools that will more efficiently support SMUD employees
- Deliver specialized Distribution Planning Load Allocation software to provide robust tools for detailed long-term planning encompassing the entire grid
- Leverage smart meter data to develop robust analytics and tools to support implementation of restructured commercial rates
Optimization & Operational Excellence – Customer Platform

• Needed a platform for customer 360-degree view
• Replaced two aging and out of date platforms for customer program marketing
• Needed data clean-up and updating
• Remotely implemented cloud-based customer platform, C/4 Hana Sales and Marketing Cloud
• Won the SAP for Utilities award for Excellence in Customer Service Award
• Part of the overall upgrade of the customer platform
Risk Mitigation

Keeping our technology and information assets safe. Implementing best practice cyber and business continuity practices. $9.3 million proposed for 2021.

- We provide expert cybersecurity consulting that builds a strong focus and awareness on risk and business continuity
  - CIO Cybersecurity Standard
  - Increased insurance coverage

- We collaborate to keep SMUD secure
  - Cybersecurity Supply Chain risk management - NERC CIP-013-1
  - Maturing emergency operations and incident management capability

- We secure SMUD’s information and data by providing governance practices and through collaboration with Records Information Management
  - Ensure data is managed uniformly and securely across the organization
  - Expand and improve external data sharing request processes
  - Establish accountability for key data sets revolving around customers, employees and energy

$0.1M increase in spending for this planning theme
### Risk Mitigation

- Work closely across SMUD to manage enterprise risk by strategic alignment of policies and processes across cybersecurity, physical security, customer privacy and records management
- Continue to increase cybersecurity awareness, training and education to protect SMUD’s people, processes and technology from the threat of attack
- Continue to mature implementation of cybersecurity best practices, focusing on a risk management framework to codify context and priorities
Risk Mitigation

- Implement a new safety management solution to streamline the tracking of safety interactions
- Install video monitoring capabilities which provide the ability to remotely assess site conditions
- Improve protection of SMUD's information assets by employing data categorization practices covering confidentiality, integrity and accessibility of key data sets
Embracing the Future

*Focusing on emerging technologies to identify innovative ways for SMUD to thrive in a new energy future. $13.2 million proposed for 2021.*

- Across IT, staff walk hand in hand with Business Units to identify and deliver technology solutions that move us towards our goals
  - Business Relationship Managers link your business goals with existing and future technological capabilities
  - Shared services functions such as Business Transformation, Project Management, Telecomm, OT Network and Contracts/License Management

- Focus on achieving the 2030 Zero Carbon Plan
  - Grid modernization to manage a complex, distributed grid
  - Communication and data transfer of distributed solar sites ranging from utility-scale to third party locations
  - Future Internet of Things applications

- New strategies to support work anywhere it happens – in the field, remote offices and SMUD locations
  - Evolve cloud strategies for SMUD’s infrastructure
  - End-user devices that enhance mobility and productivity

$4.9M in savings in 2021 for this planning theme
Embracing the Future

- Complete ADMS and DERMS phase 1, foundational grid modernization projects to enable overall management of a more complex, distributed and dynamic grid SD-4, 8

- Continue to establish communications between distributed generation sites and SMUD’s dynamic grid infrastructure SD-7, 9

- Explore further field deployments of the RealWear headsets that act as a mobile tablet, enabling work efficiencies SD-8, 10
Embracing the Future

- Complete delivery of workforce optimization mobile work management technology
- Increase utilization of the IT Innovation Fund to discover, pilot and deliver cutting-edge technology that moves SMUD forward to realizing its vision

SD-2, 8, 10
SD-8, 10
Embracing the Future - Innovation

Due to COVID-19 and associated travel restrictions, the timeline for commissioning the South Fork Powerhouse was at risk.

- The IT innovation team identified a low-cost solution that would allow SMUD engineers to stream live video to remote contractors via Microsoft Teams and continue commissioning activities using the HMT-1 headset by RealWear.
- Manufacturer representatives were able to remotely provide test direction and to witness and verify steps in testing and data acquisition.
- RealWear is a voice activated mobile tablet designed to be worn around the head, underneath a hardhat. It has a front facing video lens, is voice activated, and is equipped with a high-resolution camera that can stream video to other devices.

Without this solution commissioning of the powerhouse would have been delayed

- Contractors were in Austria and Canada
- Power Generation needed these contractors to verify staff followed proper processes for commissioning activities that would normally occur in person
- This ensured that commissioning complied with manufacturer’s requirements and validated equipment warranties
2021 Proposed Budget

- Keeping the Lights On
- Optimization/Operational Excellence
- Risk Mitigation
- Embracing the Future
- Allocated Costs

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<th>2020 Forecast</th>
<th>2020 Budget</th>
<th>2021 Proposed</th>
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<tbody>
<tr>
<td>O&amp;M</td>
<td>$31.8</td>
<td>$40.4</td>
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<tr>
<td>Capital</td>
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<th></th>
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<th>2020 Budget</th>
<th>2021 Proposed</th>
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<tbody>
<tr>
<td>Allocated (info only)</td>
<td>$61.7</td>
<td>$65.6</td>
<td>$62.4</td>
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