



Utilities Policy Advisory Committee Enterprise Innovation Assignment Recommendation

Colorado Springs Utilities Board
June 16, 2021

Agenda

- Assignment overview
- Phase 1 - Benchmarking overview
- Phase 2 - Innovation vision and guiding principles
- Phase 3 - Innovation policy
- UPAC recommendation

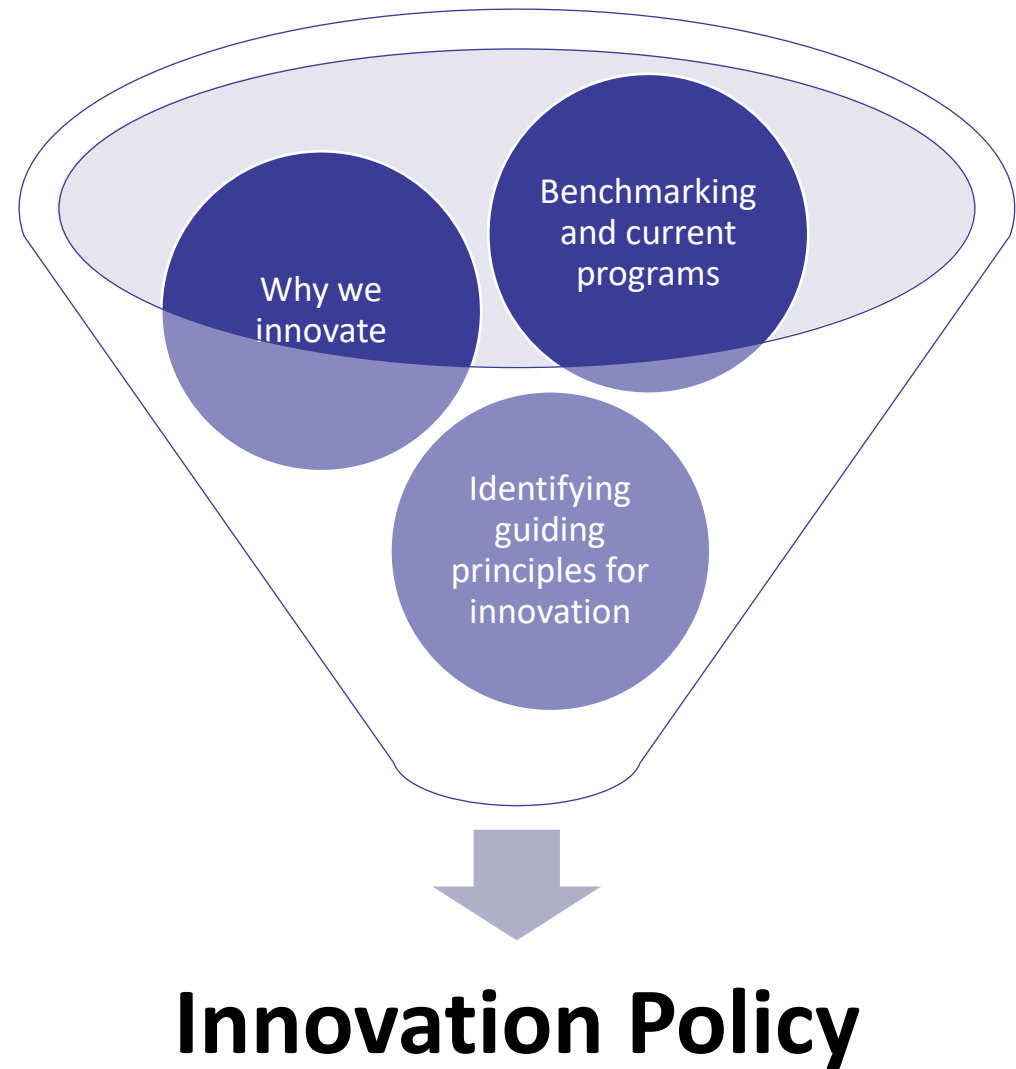
UPAC Enterprise Innovation Assignment

Purpose: Highlight the innovation work already underway at Colorado Springs Utilities; provide insight to industry best practices; define what innovation means to Colorado Springs Utilities; and provide policy guidance for future innovation programs.


Phase 1 – Benchmarking

Phase 2 – Why We Innovate (or Innovation Culture)

Phase 3 – Guidelines and Policy



Phase 1 Benchmarking Components



Program Offerings

Customer Insights

Innovation Policy and Guidelines

Program Offering Insights

- Assuming the role of customer, program offerings were evaluated for Colorado peer utilities
- Colorado Springs Utilities' program offerings are in line with the industry
 - We offer a comprehensive selection of education programs
 - Other utilities offer a wider variety of rebates and incentives
 - Electric vehicles have more exposure in Northern Colorado
 - Some utilities offer warranties and insurance programs
- Best-in-class utilities do not have more programs than others. Innovation seems to be more linked to proactively putting the customer first and ensuring the innovative programs offered match the needs of the customer

Innovation Leaders and Customer Insights

- Size of product offering does not predict program engagement and satisfaction
- Meeting customer needs is foundational to maintaining an innovative, positive brand
- Common components utilized in innovative organizations:
 - Design to customer needs
 - Utilize an iterative process
 - Expect to fail
 - Use an innovation center
 - Encourage and foster creativity

Innovation Leaders

Chick-Fil-A

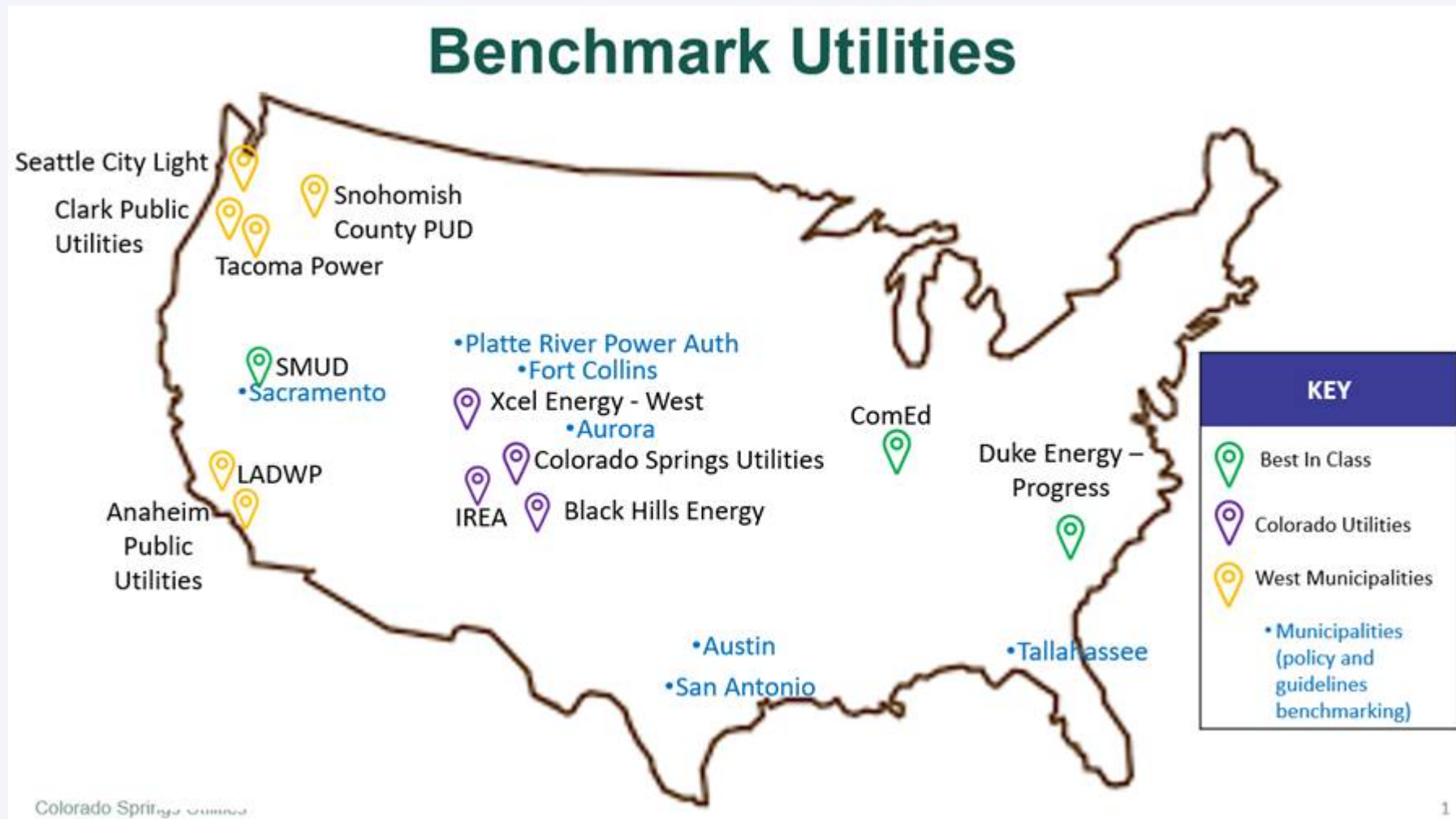
FedEx

Amazon

Starbucks

Microsoft

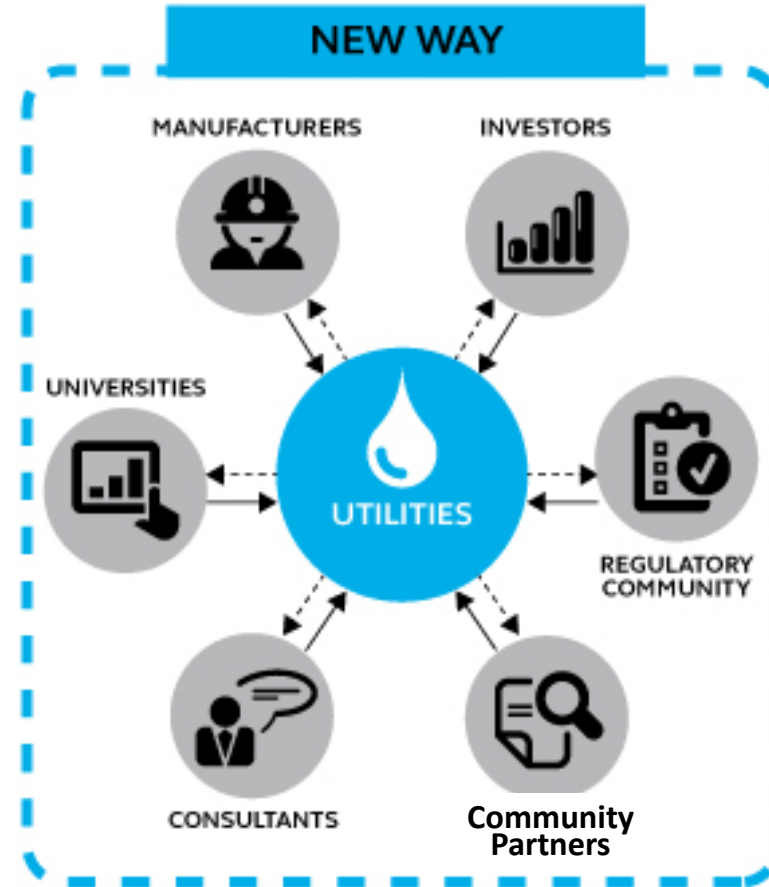
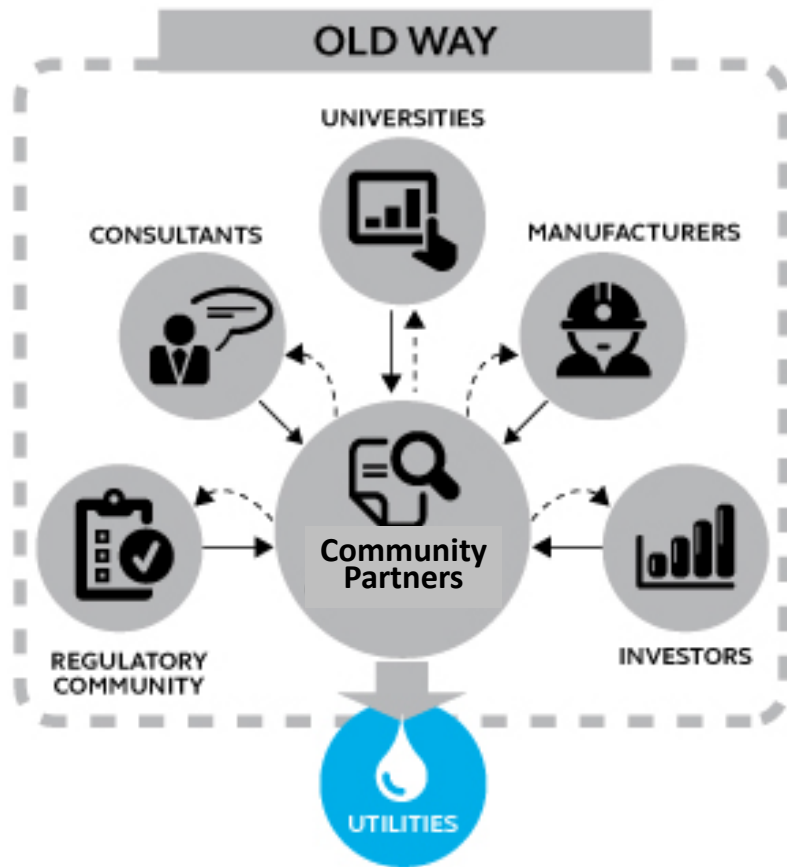
Peer Utilities Benchmarked



Policy and Guidelines Insights

- No two utilities are alike
- There doesn't appear to be a set formula for having innovative programs or projects, or umbrella policy
- Our approach to innovation programs appears to align with peer utilities and the industry
- Some programs are embedded in sustainability programs, while others are embedded in economic development programs
- Some feature innovation as part of their core values, and others are part of strategic or master plans

The Future of Utilities in Innovation



Phase 2 Innovation Vision:

Why We Innovate

- Achieve organizational goals and objectives
- Adapt to change
- Solve problems
- Capitalize on opportunities
- Move toward the utility of the future



Phase 3 Innovation Guiding Principles

- Design to customer needs
- Utilize an iterative process
- Learn through trial and error
- Use an innovation center
- Encourage and foster creativity
- Visualize long-term needs of the community
- Align with organizational strategy
- Evaluate, test and measure current and alternative methods
- Engage internal/external stakeholders and partners
- Reach out to peers to consistently share, learn and test

UPAC Policy Recommendation: Instruction to the CEO Regarding Enterprise Innovation

Enterprise Innovation (I-14) - The Chief Executive Officer shall direct that Colorado Springs Utilities use industry best practices in innovation to achieve long-term needs of the community and enterprise strategic objectives.

Accordingly, the CEO shall:

1. Encourage and foster an environment for the workforce that promotes creativity, efficiency and empowerment.
2. Advance services and programs that achieve customer interests, community goals and enterprise objectives.
3. Take reasonable risks, measure results and learn quickly from failures.
4. Engage the municipal government and other community stakeholders to evaluate emerging utility services to assure constructive collaboration.

Next Steps

- Incorporate feedback from Utilities Board
- July Utilities Board meeting: Governance Policy I-14 approval

UPAC Members Contributing to the Innovation Assignment



Gary Burghart, Chair



Larry Barrett, Vice Chair



Rex Adams



Balu Bhayani



James "Doc" Colvin



Scott Harvey



Rich Kramer



Hilary Dussing



Michael Borden



Colorado Springs Utilities[®]

It's how we're all connected



**Utilities Policy Advisory Committee
Enterprise Innovation Assignment
Recommendation**

SUPPLEMENTAL INFORMATION

Purpose of Assignment

- Highlight the innovative work already underway at Colorado Springs Utilities.
- Provide insight to industry best practices.
- Define what innovation means to Colorado Springs Utilities.
- Provide policy guidance for future innovation programs.

Colorado Springs Utilities Established Policies and Plans

Utilities Board Instructions to the CEO

- I-1 Pricing of Services
- I-2 Financial Condition and Activities
- I-3 Financial Planning and Budgeting
- I-4 Risk Management
- I-5 Economic Development
- I-6 Infrastructure
- I-7 Water Supply Management
- I-8 Asset Protection
- I-9 Treatment of Customers and
Customer Information
- I-10 Treatment of Staff
- I-11 Compensation and Benefits
- I-12 Environmental Stewardship
- I-13 Community Investment

Enterprise Level Plans

- Strategic Plan
- Annual Operating and Financial Plan
- Comprehensive Integrated Resources Plan
- Technology Integrated Resource Plan

Service Level Plans

- Electric Integrated Resource Plan
- Gas Integrated Resource Plan
- Integrated Water Resource Plan
- Wastewater System Master Plan
- Multiple system and facilities plans

Colorado Springs Utilities

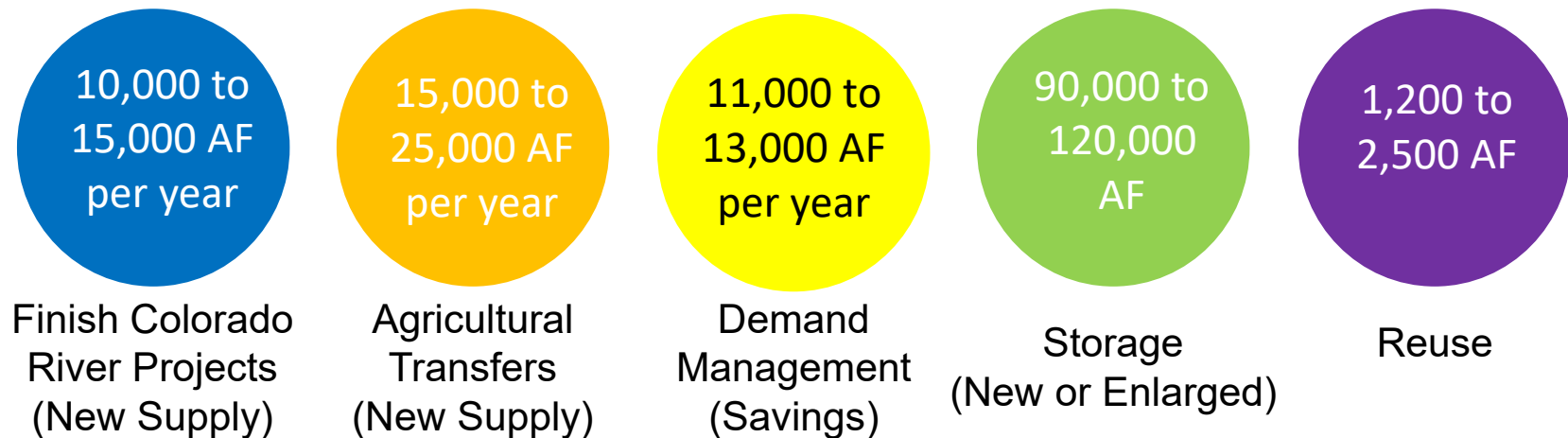
Water and Energy Innovation Discipline

1. **Visualize** long-term needs of the community.
 - Monitor demand by use type and define how those need to change.
 - Develop programs to shape future demand by segment.
2. **Focus** areas are clear related to savings and impacts.
3. **Evaluate**, test and measure current and alternative methods.
4. **Engage** internal/external stakeholders and partners.
5. **Reach** out to peers to consistently share, learn and test.

This approach results in a suite of programs that work together and constantly evolve as we plan, implement, measure and learn to reach long-term goals.

Colorado Springs Utilities Integrated Water Resource Plan Goals

- **Proper Level of Service (LOS) to address future water demands:**
 - Drought Response triggered at 1.5 years supply in storage
 - Build system resiliency to assume water restrictions 1 in 10 years
 - Retain 1 year demand in storage at all times
- **Balanced portfolio of supply options:**



Colorado Springs Utilities Water DSM Programs by Category

Program Category	Customer Facing?
Education & Technical Assistance	Yes
Outdoor Programs	Yes
Ordinances and Regulation	Yes
Indoor Programs	Yes
Partnerships Outreach	No
Supply Side Programs	No
Policy & Planning	No

All programs interconnect and affect overall IWRP goals and objectives collectively.

Education/Technical Assistance
Example:
Water-wise Landscape Transformation Programs

Outdoor Program Example:
Native Grass Expertise and Programming

Colorado Springs Utilities

OUR ENERGY VISION: Provide resilient, reliable and cost-effective energy that is environmentally sustainable, reduces our carbon footprint and uses proven state-of-the-art technologies to enhance our quality of life for generations to come.

STRATEGIC PILLARS TO SUPPORT THE ENERGY VISION



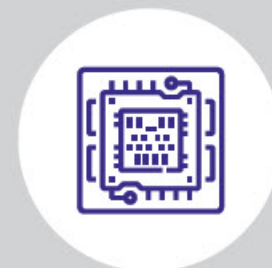
ECONOMIC



ENVIRONMENT



RESILIENCY



INNOVATION

Colorado Springs Utilities Electric and Gas DSM/DER Summary

Program	Residential	Mid-Stream	Small Commercial	Large Commercial	Industrial
Green Power	✓		✓	✓	✓
Renewable Energy Rebates	✓		✓	✓	✓
Business Lighting			✓	✓	✓
Residential EE and Low Income	✓	✓			
Commercial Prescriptive Measures		✓	✓	✓	✓
Custom Rebate			✓	✓	✓
Commercial Demand Response			✓	✓	✓
Lighting Controls			✓	✓	✓
Mid-Stream Promotion Programs		✓			
Distributed Energy Storage	✓		✓	✓	✓
Control Systems			✓	✓	✓
Energy Design Assistance			✓	✓	
Residential Demand Response	✓				
Electric Vehicle Charging Stations	✓	✓	✓	✓	✓

Colorado Springs Utilities Distributed Energy Resources (DER)

- Rooftop solar
- Energy storage
- Microgrids
- Interruptible customers
- Customer generation
- Smart thermostats
- Electric vehicles
- Advanced Technologies Campus



Colorado Springs Utilities Advanced Technologies Campus

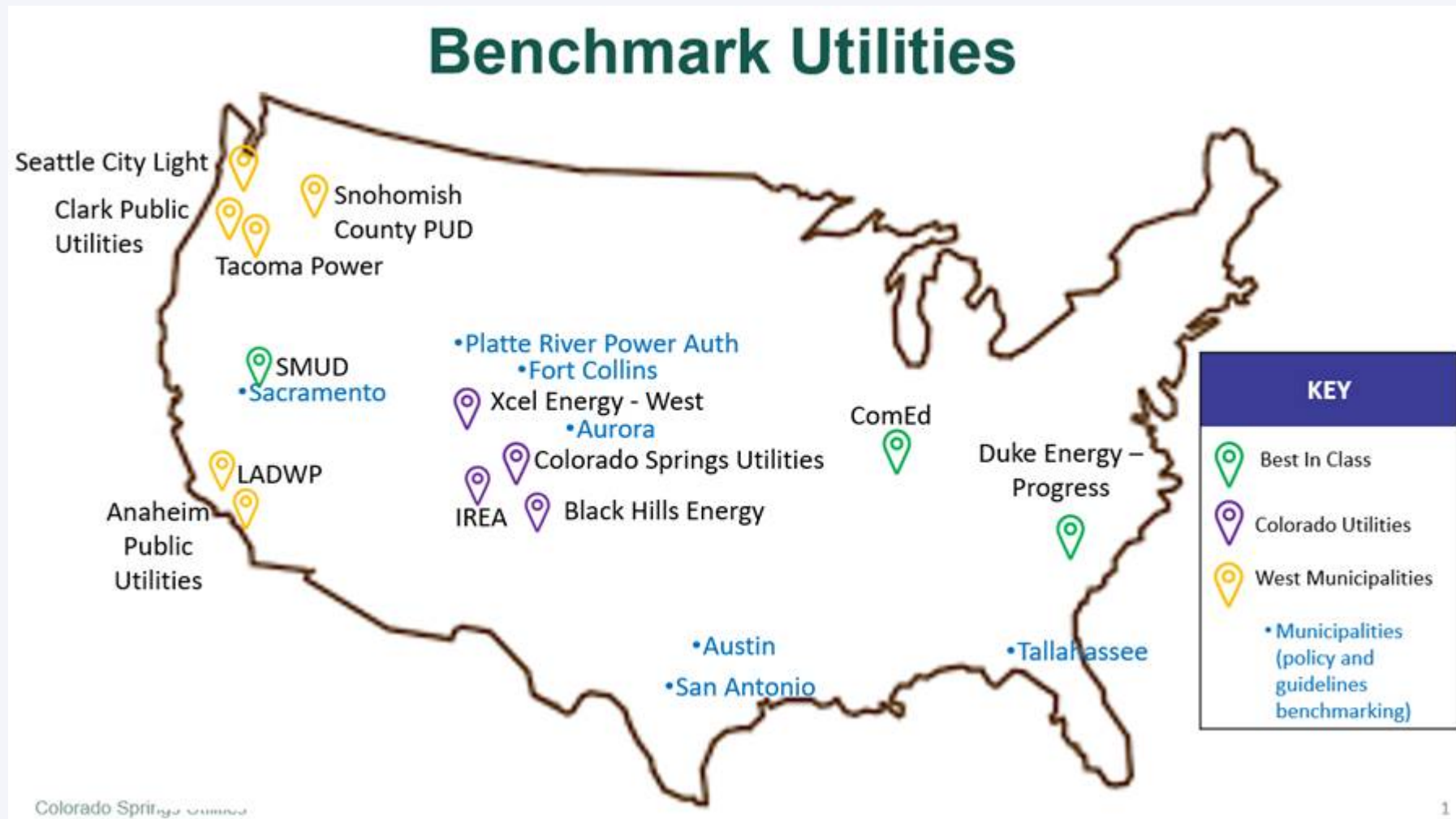
Serves as a platform for testing new technologies, pilots, and proof of concepts before deployment in the field

Will consist of multiple labs including:

- Power System Lab
- Cyber Security Lab
- Communications Lab
- AMI & Home Area Networking Lab
- Electric Vehicle Lab
- Distributed Energy Resource (DER) Lab
- Situational Awareness Lab



Peer Utilities Benchmarked



Program Offering Insights

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Innovation Leaders

Chick-Fil-A

FedEx

Amazon

Starbucks

Microsoft

Innovation Policy and Guidelines

Comparison Cities and Utilities

- Utilities close in size and commodities
- Innovation programs and related policies
- Innovation or best practice awards

- City of Aurora
- Regional Sanitation District, Sacramento
- Austin Energy
- Austin Water
- City of Fort Collins
- Platte River Power Authority
- CPS Energy, San Antonio
- San Antonio Water System
- City of Tallahassee
- Holy Cross Energy
- Green Mountain Power

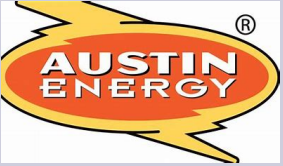

Colorado Springs Utilities

Utility	Inputs and Drivers	Outcomes
<p>Colorado Springs Utilities Water/Energy</p>  <p>2ThinkNow Ranking: 71</p>	<ul style="list-style-type: none"> Local, State and Federal Regulatory Policies: Financial Planning and Budgeting (I-3), Risk Management (I-4), Economic Development (I-5), Infrastructure (I-6), Water Supply Management (I-7), Treatment of Customers and Customer Information (I-9), Environmental Stewardship (I-12) , Community Investment (I-13 No formal innovation policy, strategy or department Energy Vision/Sustainable Energy Plan Energy and Water Integrated Resource Plans Community Solar Gardens tariff Smart Cities Collaboration with City of Colorado Springs Landscape codes for new development Commercial landscape codes WaterWise rules Residential landscape codes Green Industry Trade Allies Green Industry Coupon Program Commercial Indoor Trade Allies 	<p>Customers: Electric: 239,608, Gas: 169,631, Water: 150,833, Wastewater: 146,484</p> <p>Goals:</p> <ul style="list-style-type: none"> 10-15,000 acre feet - new water supply 215-25,000 acre feet - agricultural transfers 10-13,000 acre feet - demand savings 90-120,00 acre feet- Arkansas Basin 50-75 MGD of IPR & 1,200-2,500 acre feet new non-potable Reduce carbon emissions at least 80% by 2030 and 90% by 2050 Retire all coal generation by 2030 and reduce reliance on fossil fuels Integrate advanced technologies to modernize grid <p>Notable: Recipient National 2020 Smart Water Application Technologies Outstanding Industry Partnership Award.</p>


Comparison Cities and Utilities

Utility	Inputs and Drivers	Outcomes
<p>Aurora Water</p>  <p>2thinkNow Innovation Cities Program: Not ranked in top 200 of the Americas</p>	<ul style="list-style-type: none"> • Local, State, Federal Regulatory • Integrated Water Master Plan • Colorado Water Plan • 2009 Sustainability Plan- Water Policy Goal • Integrated Water Master Plan • Colorado Climate Action Plan • Green Building Resolution 	<p>Customers: 380,000</p> <p>Goal: Local goal to reduce water consumption 10 percent by 2040</p> <p>Notable: U.S. Water prize given for Prairie Waters system from U.S. Water Alliance (Hub for One Water Movement). Awarded for innovative Prairie Waters Project that recaptures and and recycles water for drinking and drought insurance.</p>
<p>RegionalSan (Sacramento area)</p>  <p>2ThinkNow Innovation Cities Program: 28</p>	<ul style="list-style-type: none"> • Local, State and Federal Regulatory • Master Interagency Agreement, 1996 • Regional San’s Strategic Plan • 2010 Regional Discharge Permit report 	<p>Customers: Treats 150 million gallons per day (MGD) of wastewater and discharges back into Sacramento River. Service area of 250 square miles with 1.4 million residents</p> <p>Goal: Meet or exceed discharge standards.</p> <p>Notable: The Water Research Foundation recognized Sacramento’s Regional County Sanitation District, as one of 43 <i>Utility of the Future</i> recipients in 2019.</p>



Comparison Cities and Utilities

Utility	Inputs and Drivers	Outcomes
<p>Austin Energy</p>  <p>2hinkNow Innovation Rank: 34</p>	<ul style="list-style-type: none"> Local, State and Federal Regulatory Texas Renewables Portfolio Standard Strategic Plan Austin Energy Resource, Generation and Climate Protection Plan 2030 	<p>Customers: 496,258</p> <p>Goal: Sustainability goal of 55 percent renewable energy by 2025</p> <p>Notable: American Public Power Assoc. (APPA) recognized Austin in 2019 for top honors in research and development for DEED programs. Interns sponsored through program created sustainable and energy-efficient programs.</p>
<p>Austin Water</p> 	<ul style="list-style-type: none"> Local, State, Federal Regulatory Austin Water Strategic Plan 	<p>Customers: 1,000,000</p> <p>Goal: Effective Utility Management</p> <p>Notable: 2020 Utility of the Future Today - Water Environment Federation, Water Research Foundation, WaterReuse, and National Association of Clean Water Agencies for Water Forward for commitment to Effective Utility Management principles and community outreach and engagement efforts.</p>


Comparison Cities and Utilities

Utility	Inputs and Drivers	Outcomes
<p>City of Fort Collins Water/ Energy Distribution</p>  <p>2ThinkNow Rating: Not in rating.</p>	<ul style="list-style-type: none"> Local, State and Federal Regulatory Initiated “Green Code” in 2012 to incorporate EPA WaterSense Standards In 2016, SB 14-103 made it so manufacturers can only sell WaterSense-labeled fixtures Colorado Water Plan City’s Climate Action Plan City Plan (2019) No implicit innovation strategy 	<p>Customers: 35,000 residential, 2,761 commercial customers (one of three water provider districts).</p> <p>Goal: Steps to support a healthy and resilient economy; maintain focus on climate action</p> <p>Notable: Founding member of Colorado Smart Cities Alliance - a consortium of 14 Colorado Cities, partnered with Universities and Arrow Electronics. APPA Energy Innovator (2107) Efficiency Works Neighborhood Pilot- Fort Collins’ Efficiency Works Neighborhood Pilot tested a new model for comprehensive home performance contracting.</p>


Comparison Cities and Utilities

Utility	Inputs and Drivers	Outcomes
<p>Platte River Power Authority – wholesale provider</p>  <p>Estes Park • Fort Collins • Longmont • Loveland</p> <p>2ThinkNow Rating: Not in rating.</p>	<ul style="list-style-type: none"> Local, State and Federal Regulatory Energy Board oversees City’s Energy Policy Platte River Power Authority’s Integrated Resource Plan Roadmap to 100 Percent Renewable Energy by 2040 Bold Climate Action 2020 (Polls) – adopters; Integrated Resource Plan-Values include 	<p>Customers: 348,205</p> <p>Goal: More than 50 percent of noncarbon resources by 2021</p> <p>Notable: The California Climate Action Registry has named Platte River Power Authority a Climate Action Leader for a second consecutive year. Adopters of Roadmap to 100% Renewable Energy by 2040 and Bold Climate Action by Governor Polis which emphasizes innovation.</p>
<p>City of Sacramento Water and Wastewater</p>  <p>2ThinkNow Ranking: 28</p>	<ul style="list-style-type: none"> Local, State and Federal Regulatory Economic Development Policies 2040 General Plan is underway Sacramento Urban Technology Lab (part of Innovation Office) 	<p>Customers: 130,000</p> <p>Goal: Carbon Neutral Water Utility by 2045</p> <p>Notable: Honorable mention from U.S. EPA in recognition of the success in going above and beyond in promoting WaterSense certification and Water efficiency.</p>


Comparison Cities and Utilities

Utility	Inputs and Drivers	Outcomes
<p>Sacramento Municipal Utility District</p>  <p>2ThinkNow Ranking: 28</p>	<ul style="list-style-type: none"> • Local, State and Federal Regulatory • Integrated Resource Plan • Net-zero carbon emissions by 2040 – a 64 percent reduction • 2024 Strategies: Focus on creating a high-trust culture that values employees’ ideas and fosters innovation, collaboration, diversity, inclusiveness and accountability • Has its own Research and Development Department 	<p>Customers: 640,712</p> <p>Goal: Net-zero carbon emissions by 2030</p> <p>Notable:</p> <ul style="list-style-type: none"> • SMUD received a State Leadership in Clean Energy award for its first-of-a-kind Energy StorageShares program from the Clean Energy State Alliance for its advancement in clean energy technology solutions. • In 2017, SMUD received an innovation award by the National Association of Regulatory Utility Commissioners. recognized for municipal-level innovation in regulatory pricing. The project was the indirect evaporative cooling systems. A result of their R and D project and portfolio.



Comparison Cities and Utilities

Utility	Inputs and Drivers	Outcomes
<p>San Antonio Water System</p>  <p>2ThinkNow Ranking: 33</p>	<ul style="list-style-type: none"> • Local, State and Federal Regulatory • Innovative Management Practices/Municipal Code • 2017 Water Management Plan • Innovation Team • Innovation is written into their polices regarding drainage, new construction of buildings and facilities, downtown design guide, energy conservation code, building design principles • Their chief of staff/VP is also head of Operations Support & Innovation 	<p>Customers: 1,900,000</p> <p>Goals: Reduce per capita consumption by 88 gpcd by 2070</p> <p>Notable: The City has an Innovation Team divided by subject area. One person is the chief innovation officer and others specialize in smart cities: research and development and process improvement. They have also formed the R and D League, which is comprised of the City, Southwest Research Institute (SwRI), The United Services Automobile Association (USAA), and The University of Texas at San Antonio (UTSA).</p>

Comparison Cities and Utilities

Utility	Inputs and Drivers	Outcomes
<p>San Antonio Energy System</p>  <p>2ThinkNow Ranking: 33</p>	<ul style="list-style-type: none"> • Local, State and Federal Regulatory • EPA Affordable Clean Energy Rule (repeal of Clean Power Plan) • Texas Renewables Portfolio Standard • SA Tomorrow Comprehensive and Sustainability Plan • VIA Vision 2040 • Brooks Master Plan • American Cities Climate Challenge • 2020 Household Energy Burden Report (ACEEE) • Smart SA • Flexible Path Strategy 	<p>Customers: 860,000 electric, 358,000 natural gas</p> <p>Goal: Net zero emission goal by 2050</p> <p>Notable:</p> <ul style="list-style-type: none"> • Top energy innovator in 2020 by APPA • Thought Leader for Public Engagement by the Peak Load Management Alliance, 2020

Comparison Cities and Utilities

Utility	Inputs and Drivers	Outcomes
<p>City of Tallahassee Electric Utilities</p>  <p>2ThinkNow Ranking: 78</p>	<ul style="list-style-type: none"> • Local, State and Federal Regulatory • Florida Energy and Climate Plan • State Office of Energy • Energy Bills • Strategic Plan 2024 • Goal 1: Economic Development • 2021 Comprehensive Plan • No formal innovation plan • Has Innovation Team in the Mayor’s Office 	<p>Customers: 120,000 electric customers</p> <p>Goal: 100 percent transition to renewable energy by 2050</p> <p>Notable:</p> <ul style="list-style-type: none"> • APPA Diamond-level recognition • In 2012, APPA named the utility system as Number One America
<p>City of Tallahassee Water Utilities</p> 	<p>State and Federal Regulatory Comprehensive Plan Strategic Plan 2024</p> <p>Goals:</p> <ul style="list-style-type: none"> • Advanced Metering • Water Forward Innovative Water Strategies • Reclaimed Water • Environmental Protection 	<p>Customers: 95,000</p> <p>Goal: Be a leader in the prevention of sewer spills and reduce the number of impaired water bodies.</p> <p>Notable:</p> <ul style="list-style-type: none"> • Named Utility of the Future Today, as recognized for Transformational Initiatives by Water Environment Federation for engaging their community , forming unique partnerships and recovering resources from wastewater.

Policy and Guidelines Insights

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Innovation Vision:

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Innovation Guiding Principles

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