

De-Carbonizing the Campus: Planning, Tools & Technologies

# CampusEnergy2023

February 27 – March 2, 2023

Gaylord Texan Resort & Convention Center | Grapevine, Texas



INTERNATIONAL  
DISTRICT ENERGY  
ASSOCIATION



# Two Campuses: Two Solutions

*EcoDistrict Innovation Delivers Decarbonization and Resiliency Strategies for  
Seattle Central College and Montana State University*

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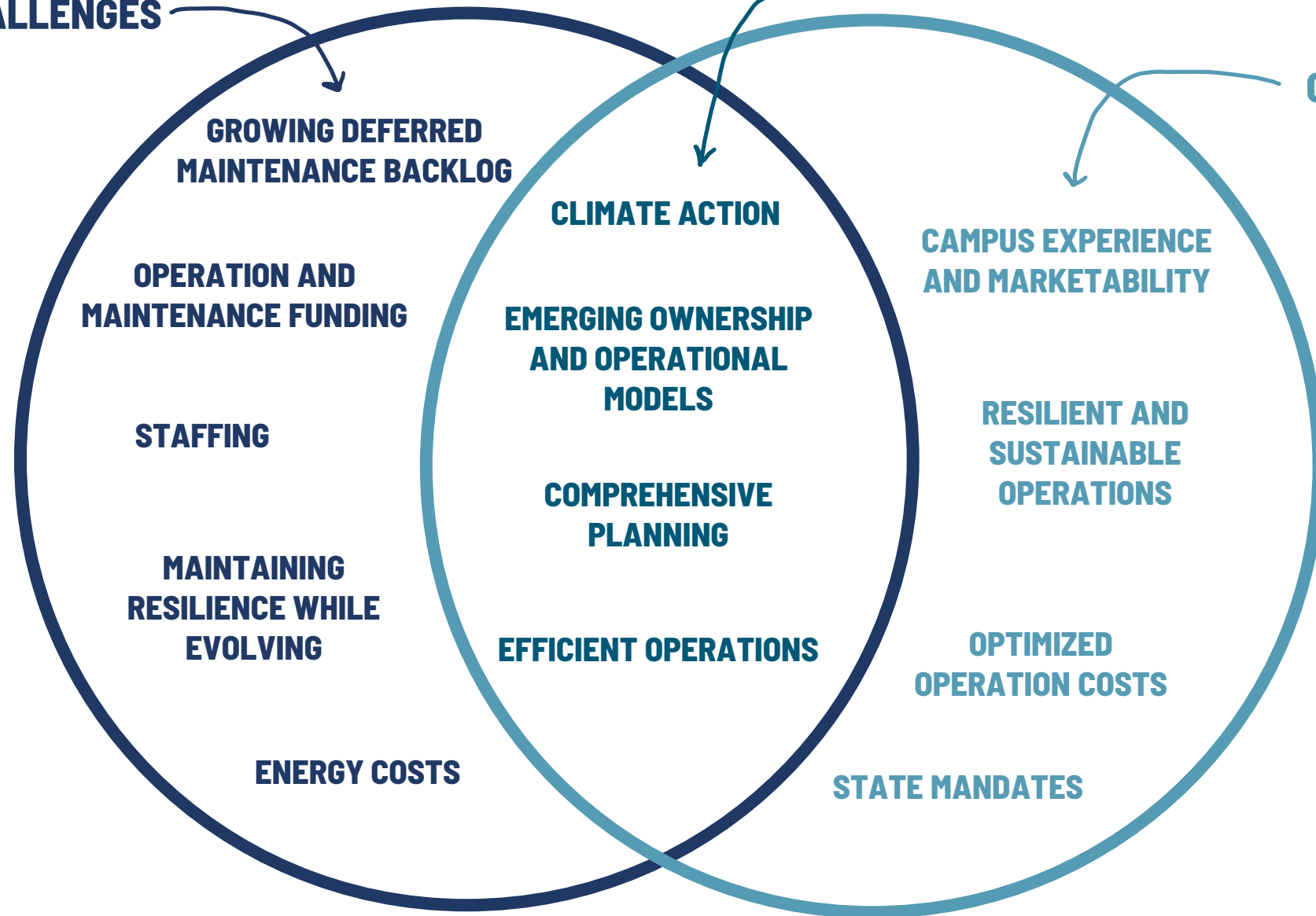
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## CHALLENGES

## OPPORTUNITIES

## GOALS



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# Two Campuses: Two Paradigms

## Montana State University

- 5M SF Campus in Bozeman, Montana
- Land Grant Institution
- Carnegie Class R1: Very High Research Activity
- 17,000 Students
- Significant Growth (Students & Campus)
- Building ages: 1896-2021 w/ variety of mechanical systems
- Central steam plant; some decentralized cooling

## Seattle Central College

- 630K SF Campus in downtown Seattle
- Associate, Bachelor's, and career training programs
- 16,000 students
- Built starting in 1960 with many additions
- District steam
- Clean Building Performance Standard (WA State)

# How Do You Get There?

## Procurement Flexibility

- Conventional Design-Bid-Build
- Design Build Operate Maintain
- ESPC
- EcoDistricts as a Service: EaaS
- Public Private Partnerships
- Joint Ventures

## Financial Solutions

- Self Funded
- Performance Based Contract
- Third Party Funding
- Public Private Partnerships
- Net Positive Contracts
- Grants and Public Funding (IRA, etc)



## O&M Strategies

- Self Operate
- Third Party Operations
- Hybrid Remote Operations
- Energy as a Service (EaaS)

## Technical Improvements

- R&D of right-sized solution
- Lifecycle cost optimization
- Integration of onsite renewables
- Smart Efficient Electrification
- Modernization of aged infrastructure
- Recovery/Reuse of waste heat
- Sharing of centralized thermal assets

# Outcomes

## Montana State University

- ✓ Extensive Deferred Maintenance Retired
- ✓ Building Performance
- ✓ Reduced Carbon Emissions
- ✓ Prepare for Capital Projects/Expansion
- ✓ Elegance of Campus Environment
- ✓ Utility Cost Reduction

## Seattle Central College

- ✓ Extensive Deferred Maintenance Retired
- ✓ Safety of Operations
- ✓ Independence from aging once-through steam system
- ✓ Expandability for future growth
- ✓ Reduced Carbon Emissions
- ✓ Utility Cost Reduction

# Thank You!

**Dan Stevenson**

**Devon Powell**



**Lincoln Ferris**



**Alex Russell**



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