

LEADING THE WAY **CampusEnergy**2022


Feb. 15-18 | Westin Boston Seaport District Hotel | Boston, Mass.



Agile Planning

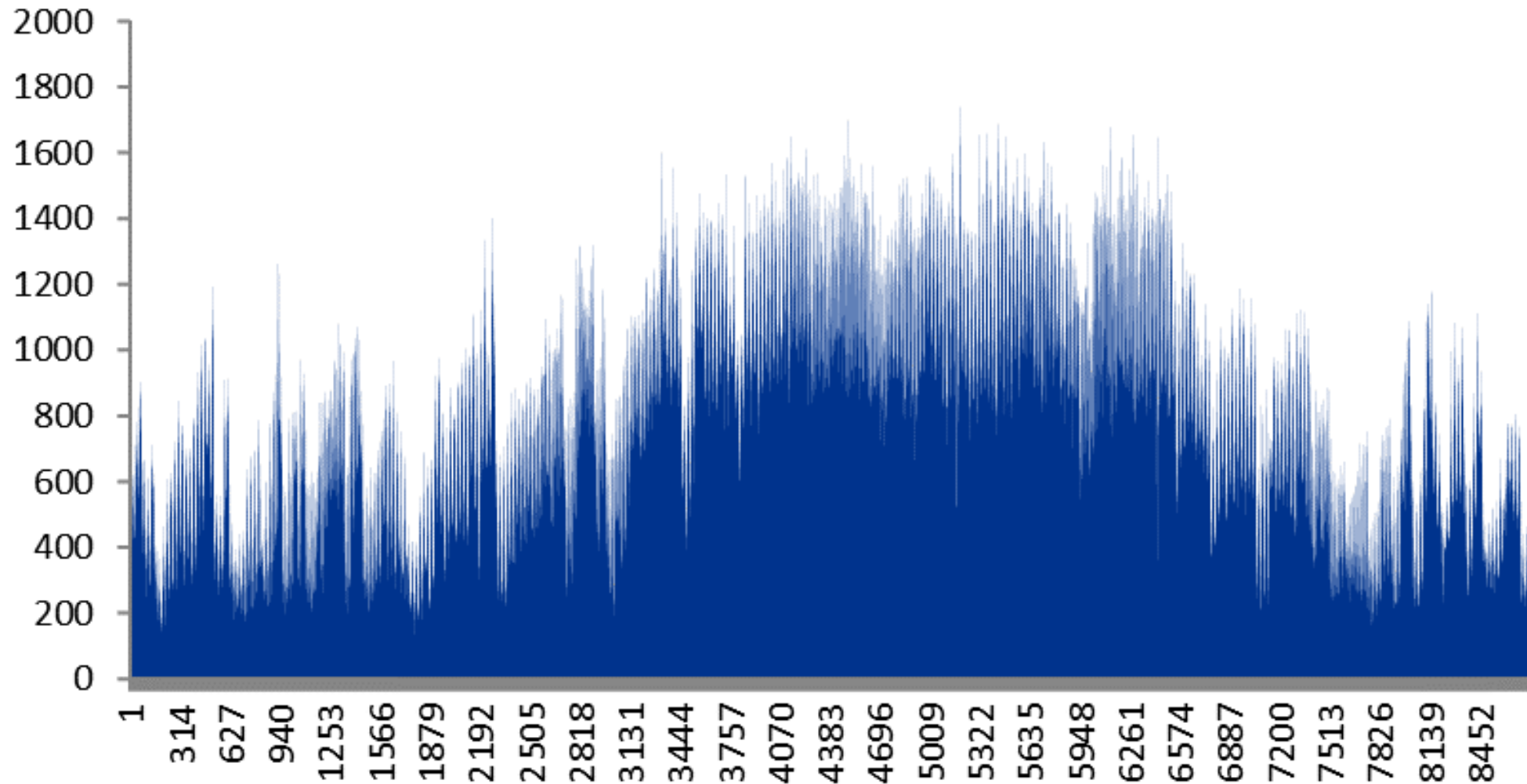
Ben Dombrowski, Jacobs
Max Littlefield, Jacobs

What Does a Utility Master Plan Cover?

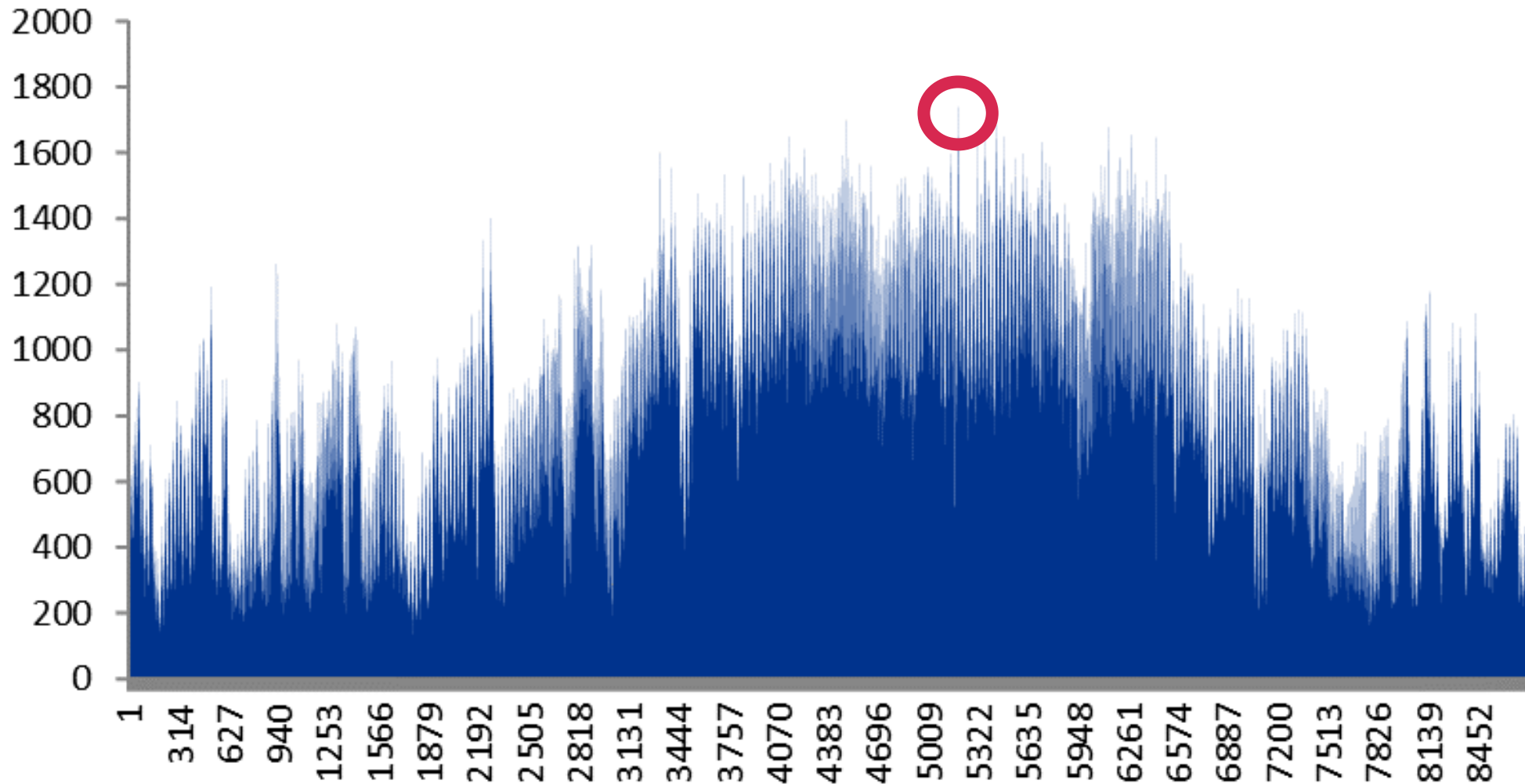


reliability
conditions assessment
distribution hourly analysis cad
geospatial data utilities rate greenhouse gas
hot water conversion financial planning
steam
system goal life cycle cost facilities master plan smart grid
chilled water plant net
cogeneration growth projection cycle cost analysis piping
stormwater management sensitivity analysis
capital cost stakeholders engagement
ecm pipe flo solar pv skm renewable energy
resiliency funding source o&m feeder
substation micro grid system capacity
mandate decarbonization

What Do We Plan For?



What Do We Plan For?

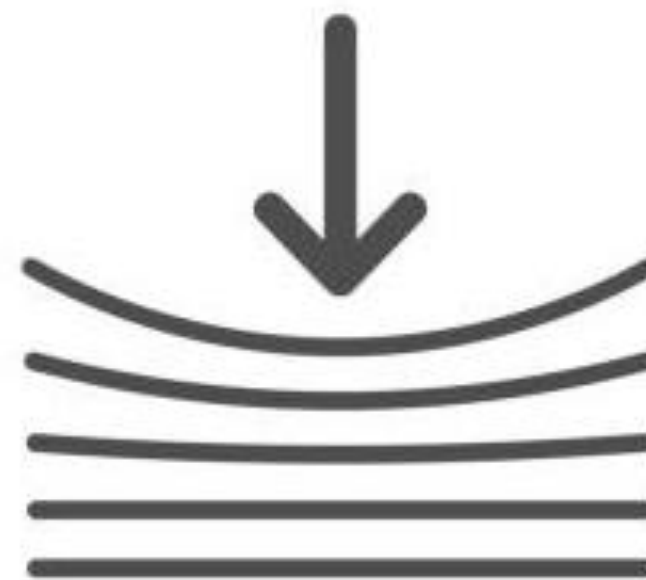


What Do We Plan For?

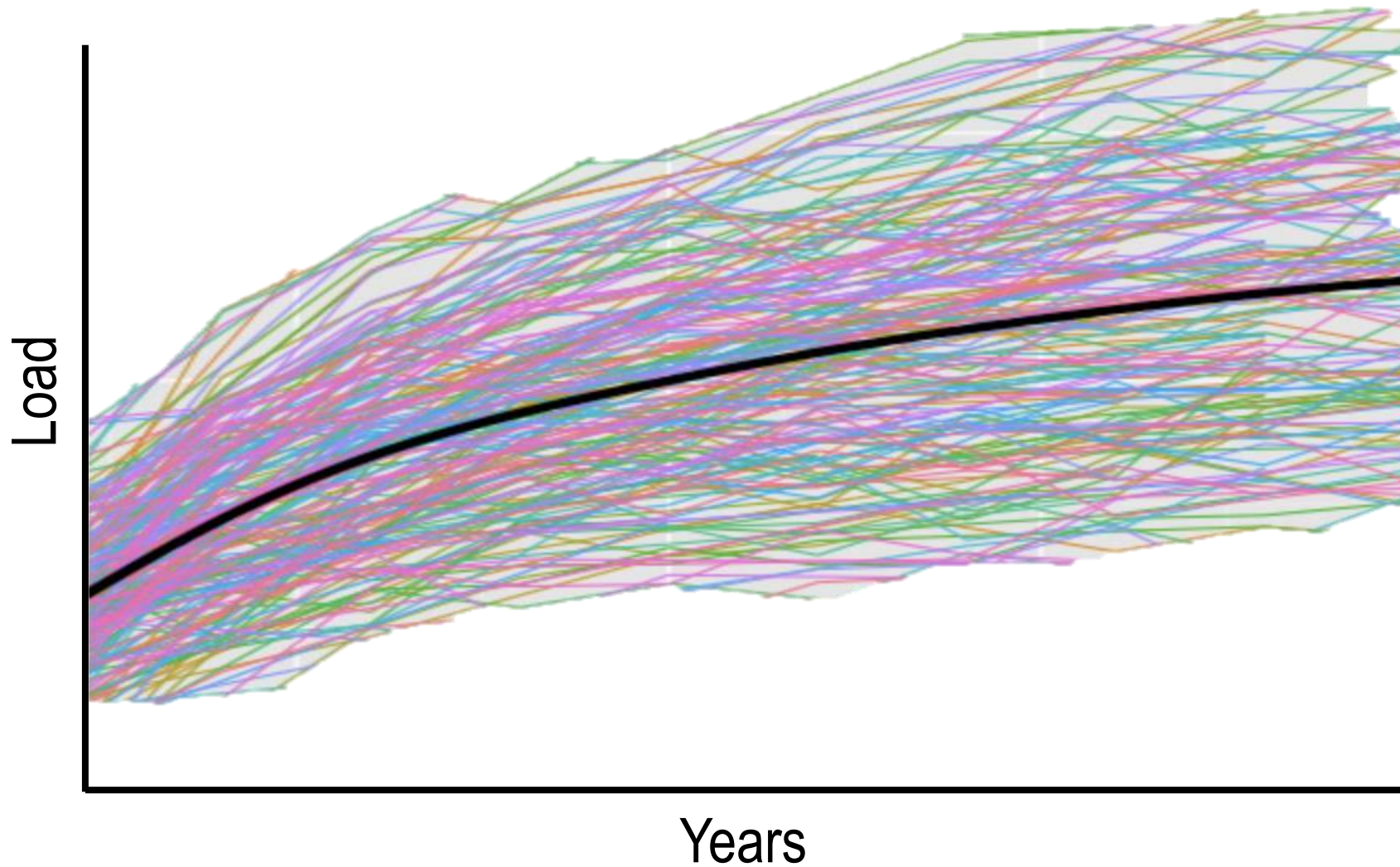


Decarbonization

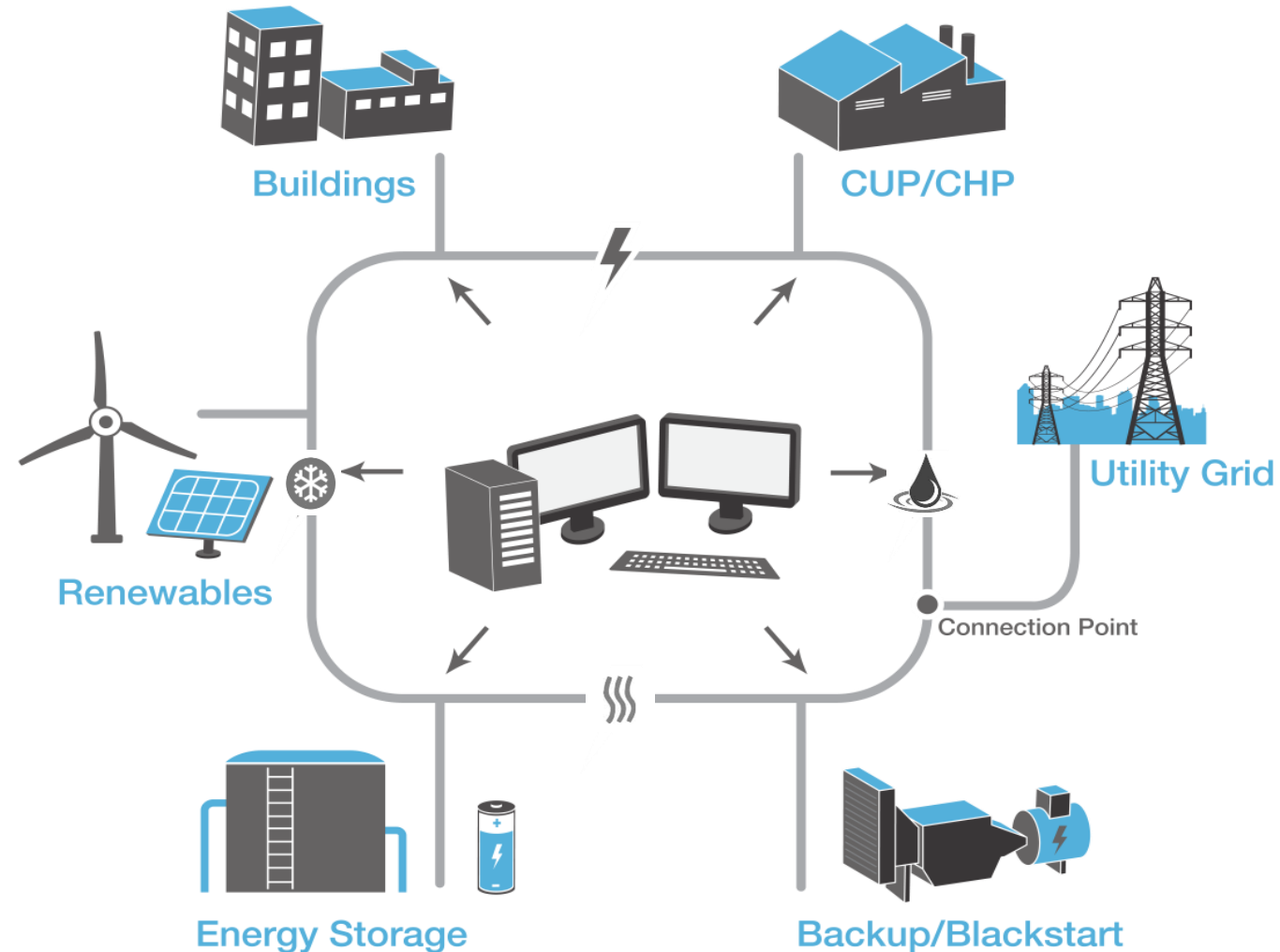
or



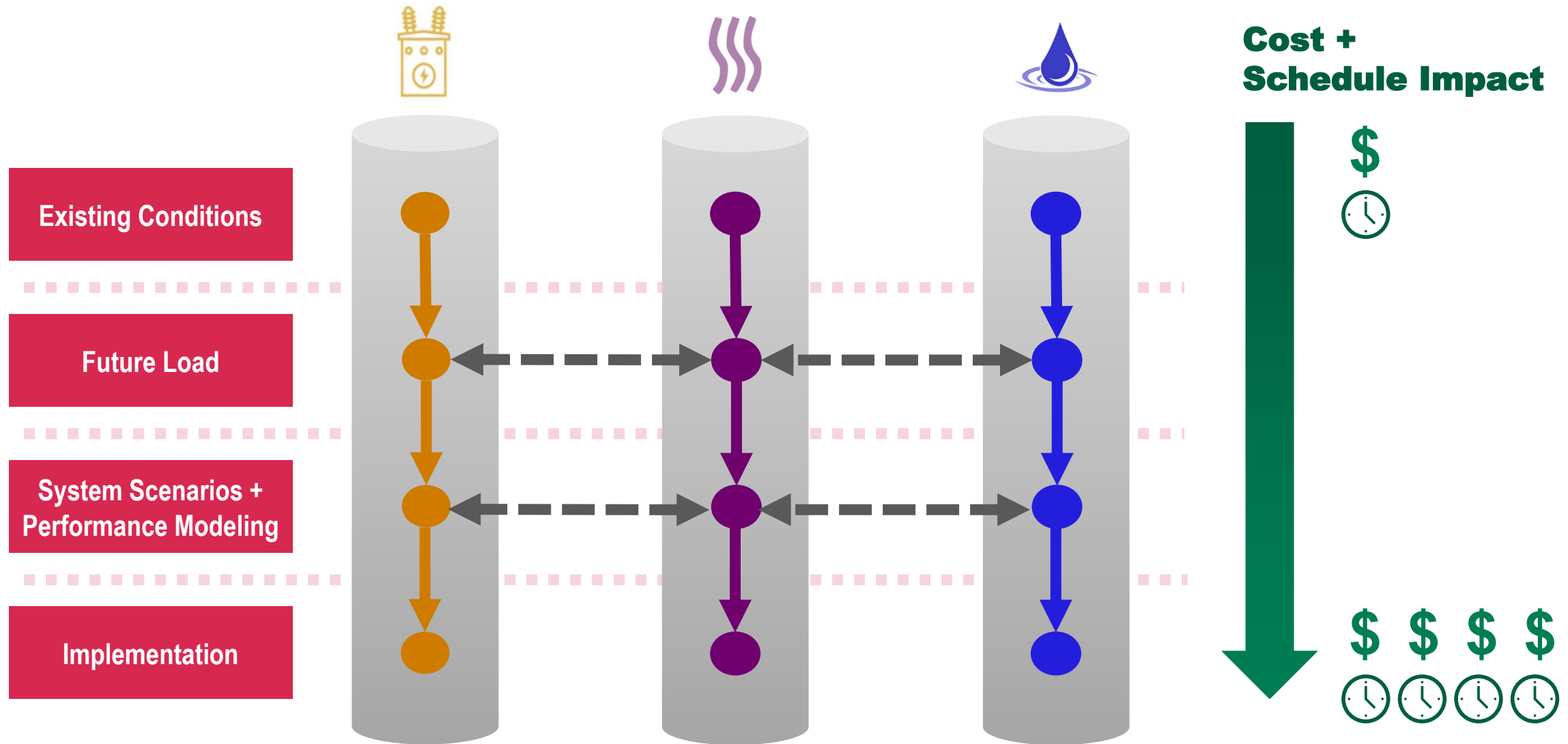
What Do We Plan For?



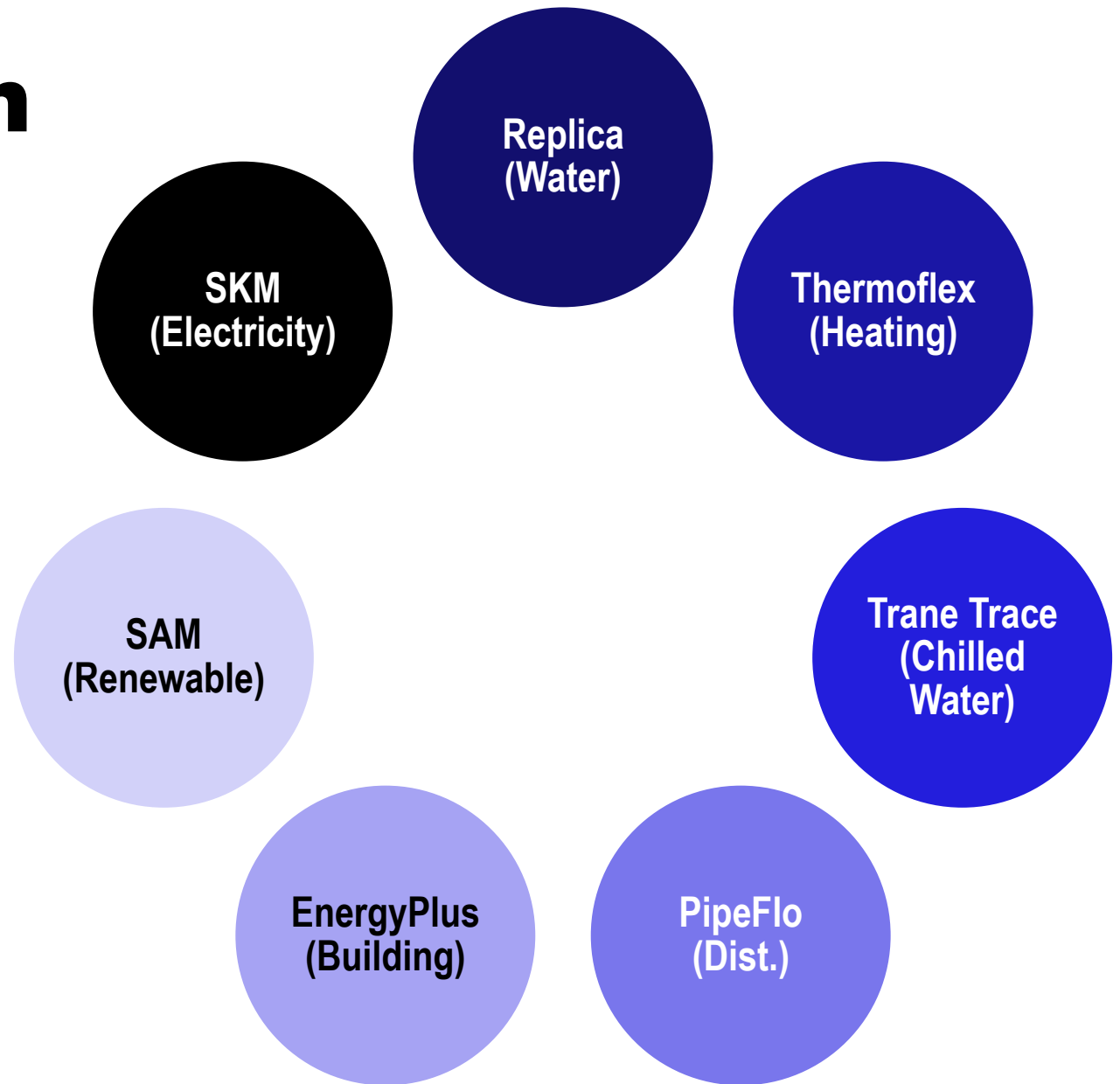
Interconnected System Requires an Interconnected Plan



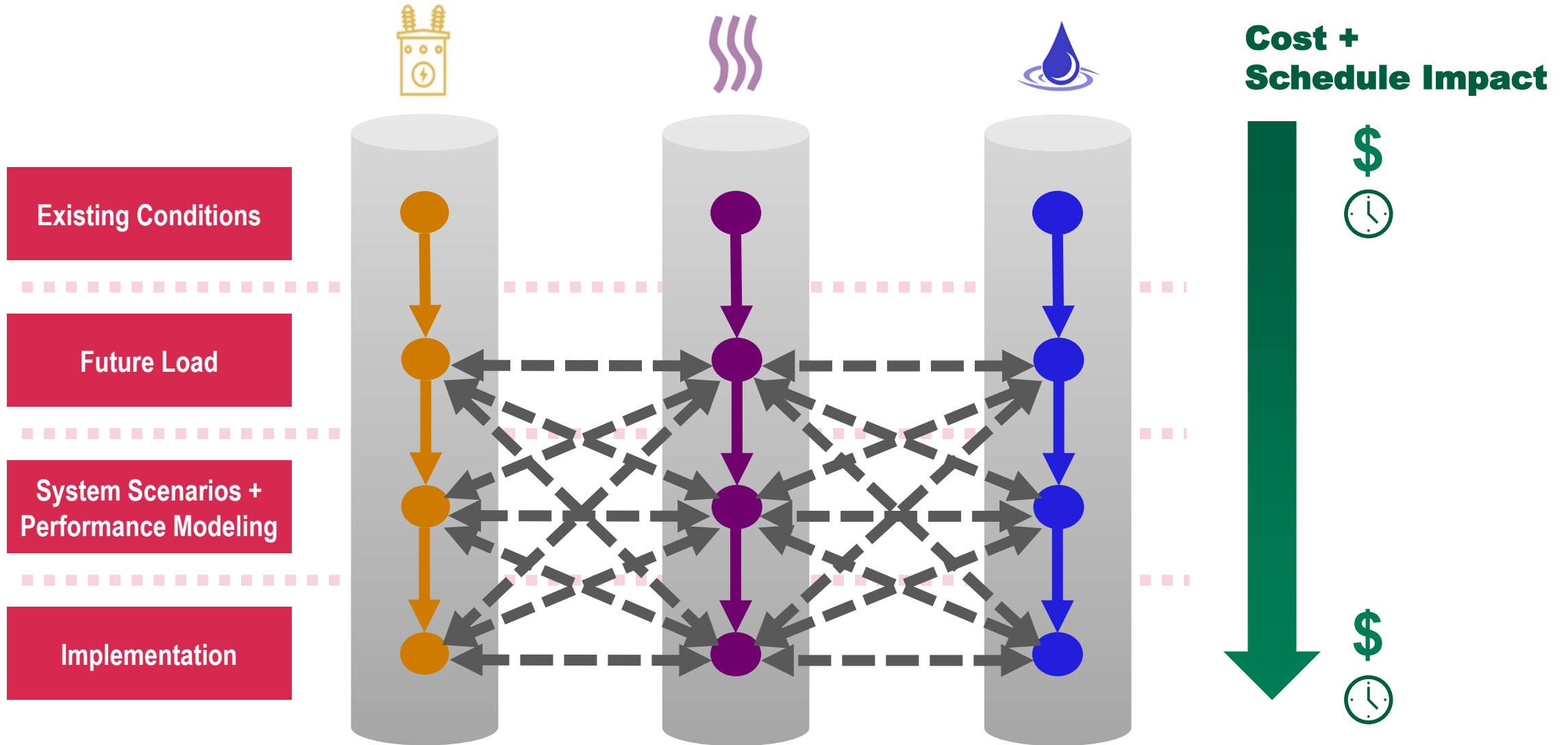
Static Approach



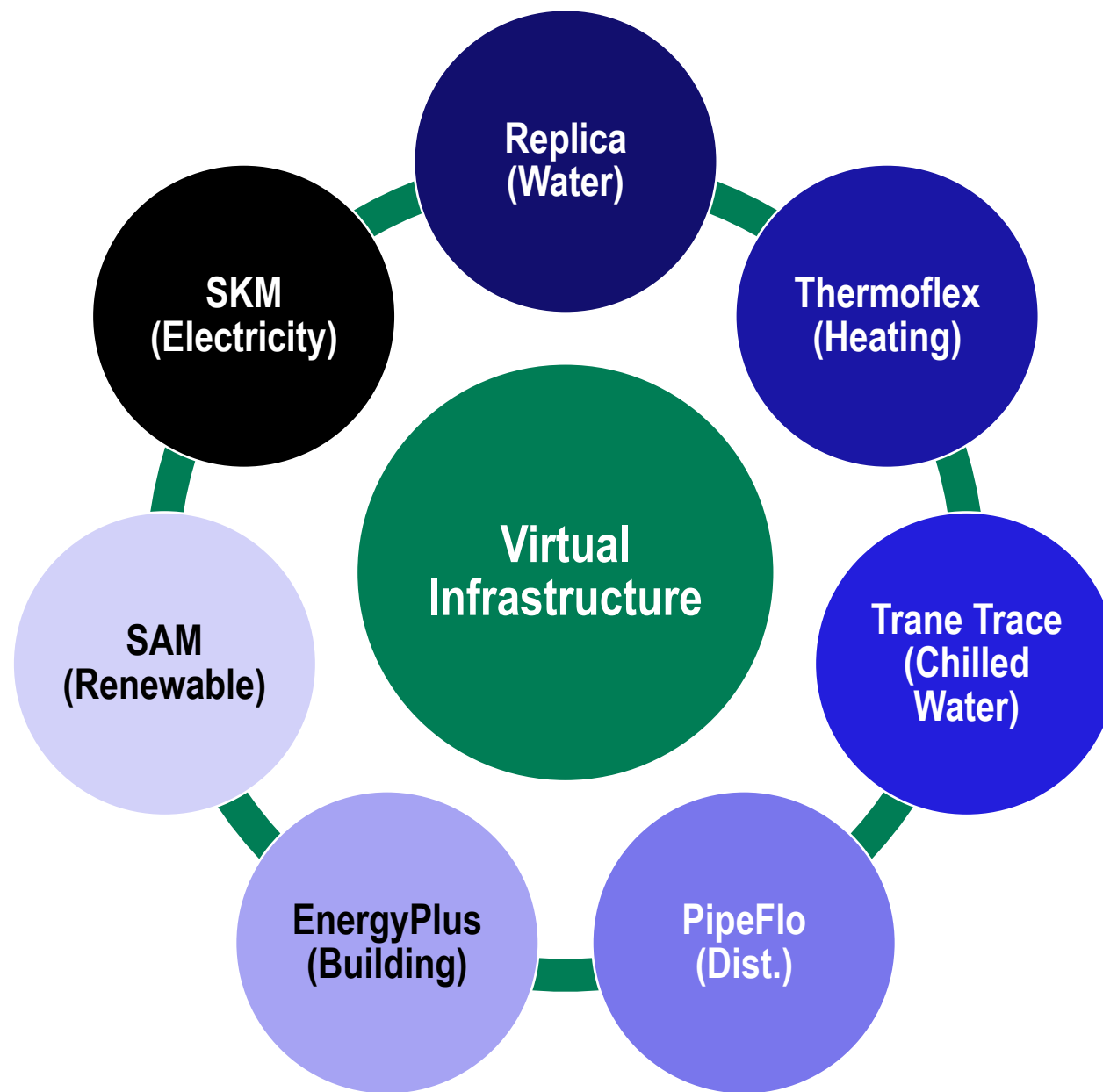
Static Approach



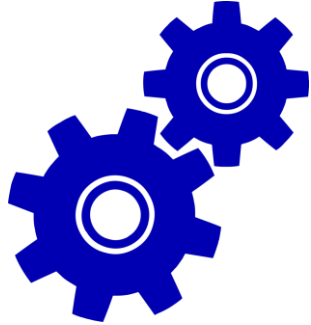
Agile Planning



Agile Planning



Agile Planning Means Leveraging Our Assets



Equipment



Data

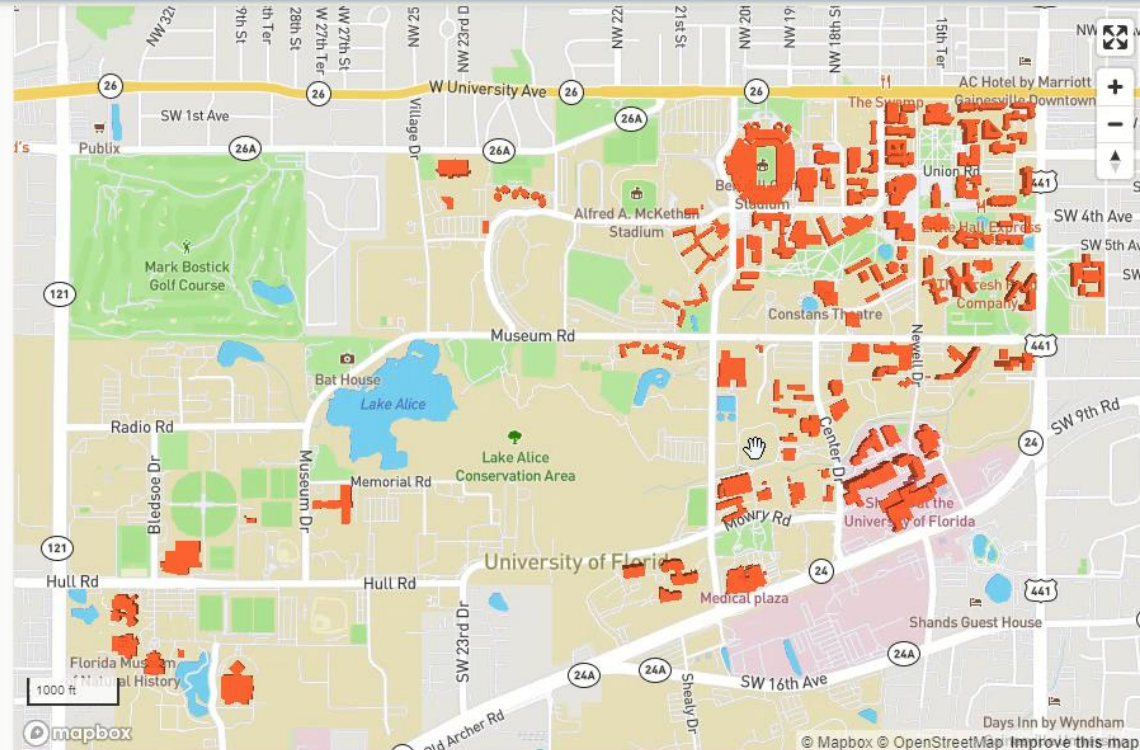


Technology



Knowledge

- Home
- Buildings
- Chilled Water
- Hot Water
- Steam
- Natural Gas
- Electricity
- Potable Water
- Sanitary

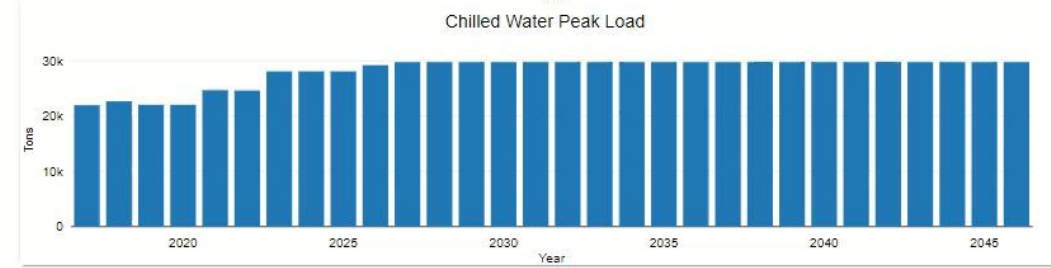
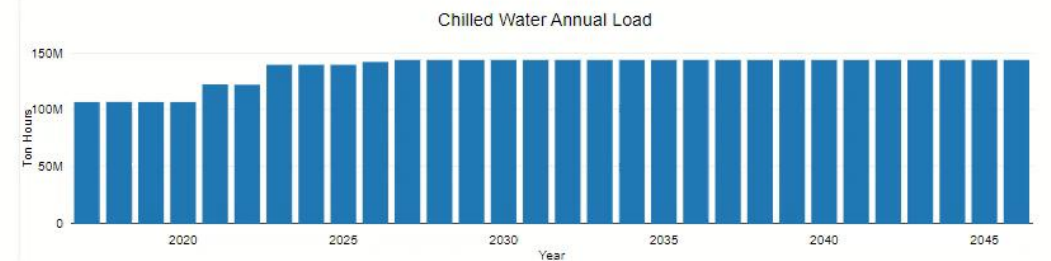
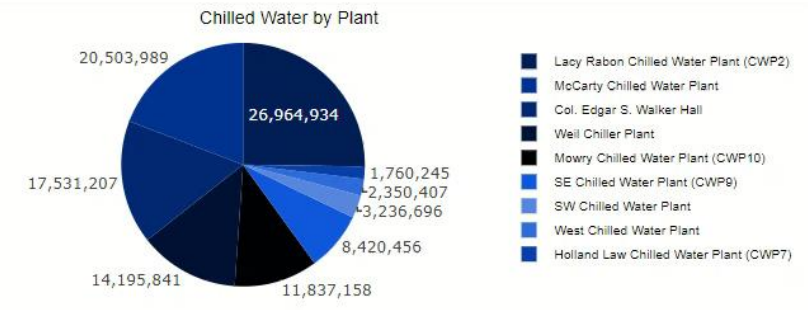


Name	Number	Type	Year Built	Size	Footprint	Floors	Occupancy
University Auditorium	0001	Academic	1931	54311	20956	2	325
Linton E. Grinter Hall	0002	Academic	1953	56432	16768	3	500
Col. Edgar S. Walker Hall	0003	Academic	1968	26058	11614	2	125
George Peabody Hall	0004	Academic	1962	35139	9989	3	125
George S. Smathers Library	0005	Academic	1971	115397	28714	4	182
Nathan P. Bryan Hall	0006	Academic	1998	49078	19499	2	1292
James N. Anderson Hall	0007	Academic	1986	47628	11459	4	368
Keene-Flint Hall	0008	Academic	1956	58774	17430	3	381
Townes R. Leigh Hall	0009	Academic	1998	98707	26740	3	499
B.H. Griffin - W.L. Floyd Hall	0010	Academic	1964	22912	8112	2	1776

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UTILITIES OVERVIEW LIFE CYCLE COST SUSTAINABILITY PROJECTS

- CHILLED WATER
- HOT WATER
- STEAM
- NATURAL GAS
- ELECTRICITY
- POTABLE WATER
- SANITARY



University of Florida North District Cooling



University of Florida

North District Cooling



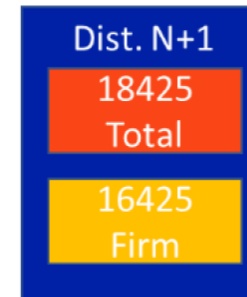
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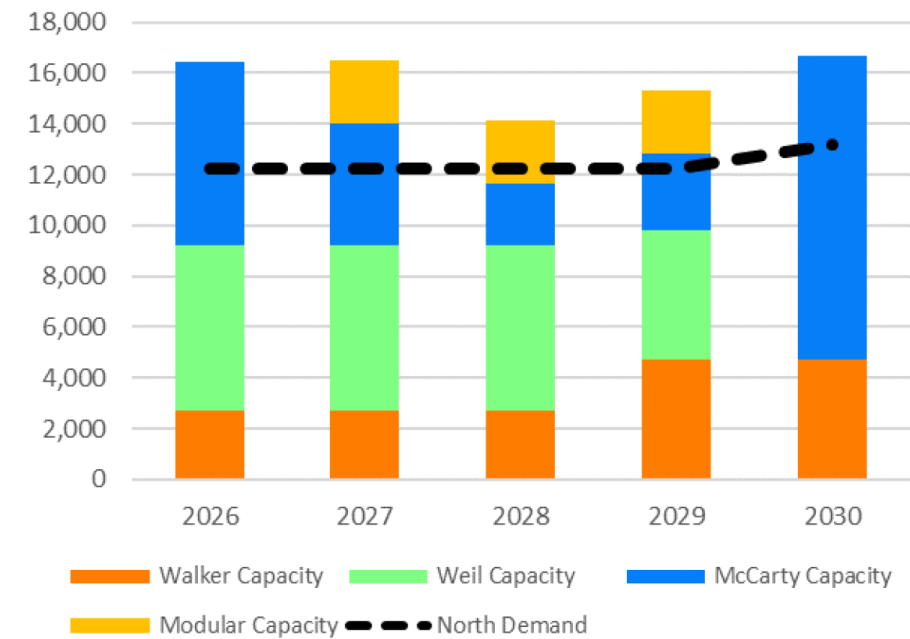
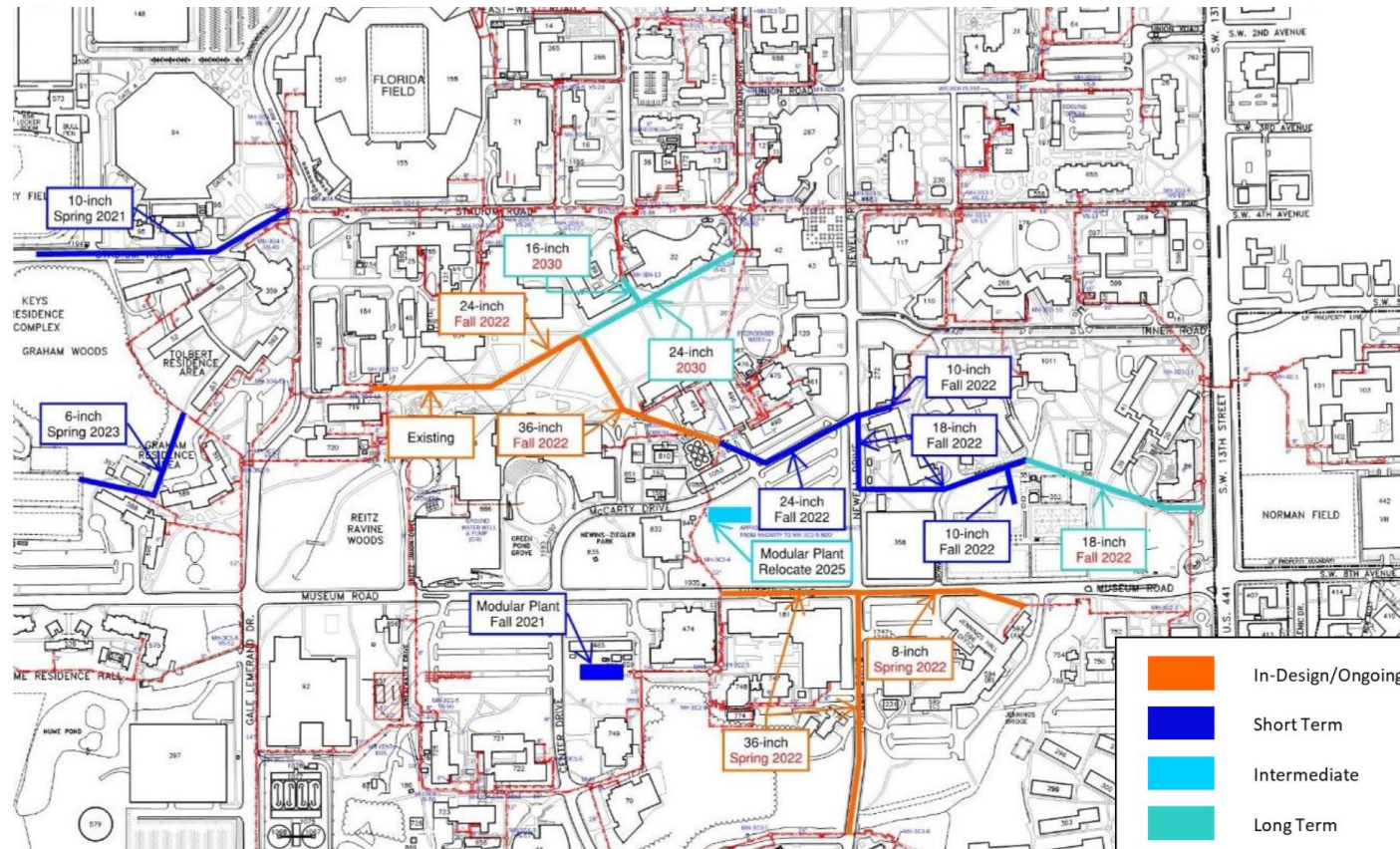
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University of Florida North District Cooling





University of Florida

North District Cooling

Maximizes existing assets

Provides adaptability to changing load landscape

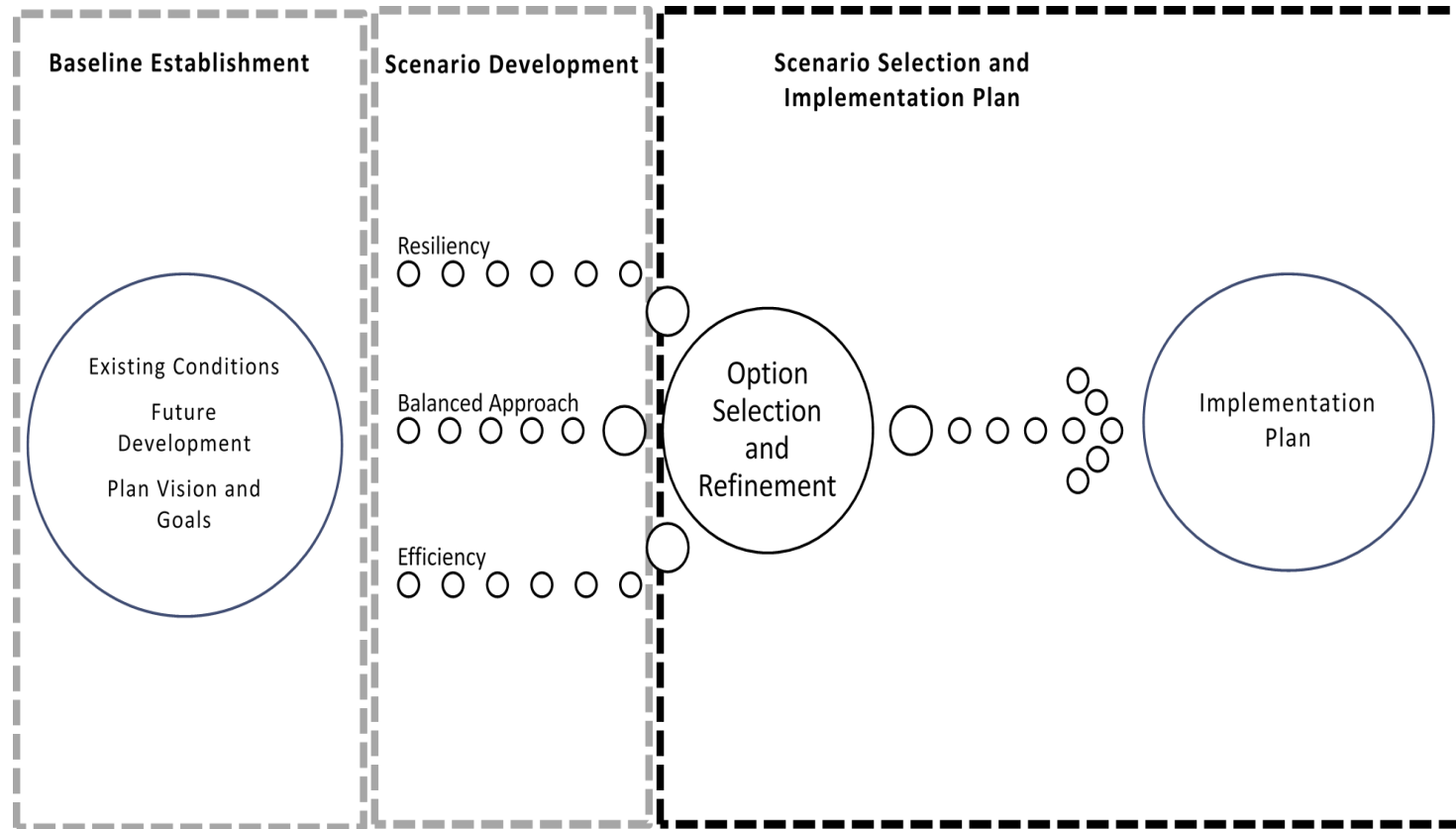
Improves **system** reliability

National Guard Training Site

Requires **14 days** of on-site energy and water

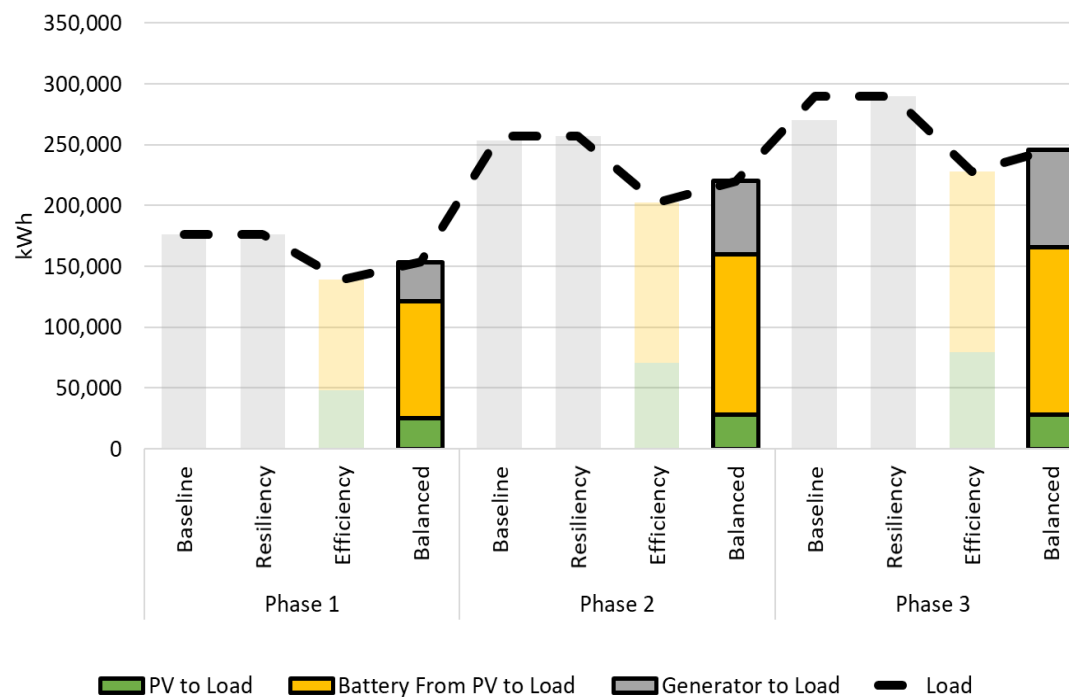
Load fluctuations challenge the solution

Scenarios evaluated for **goal achievement and annualized benefit**

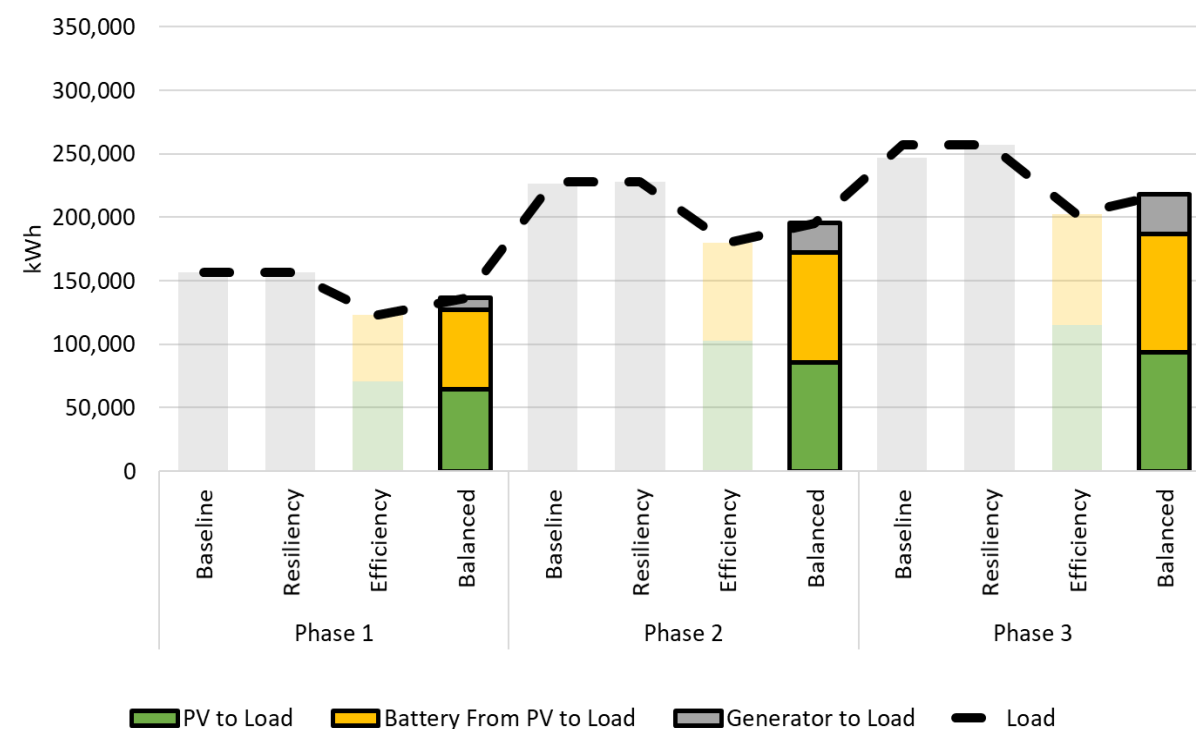


National Guard Training Site

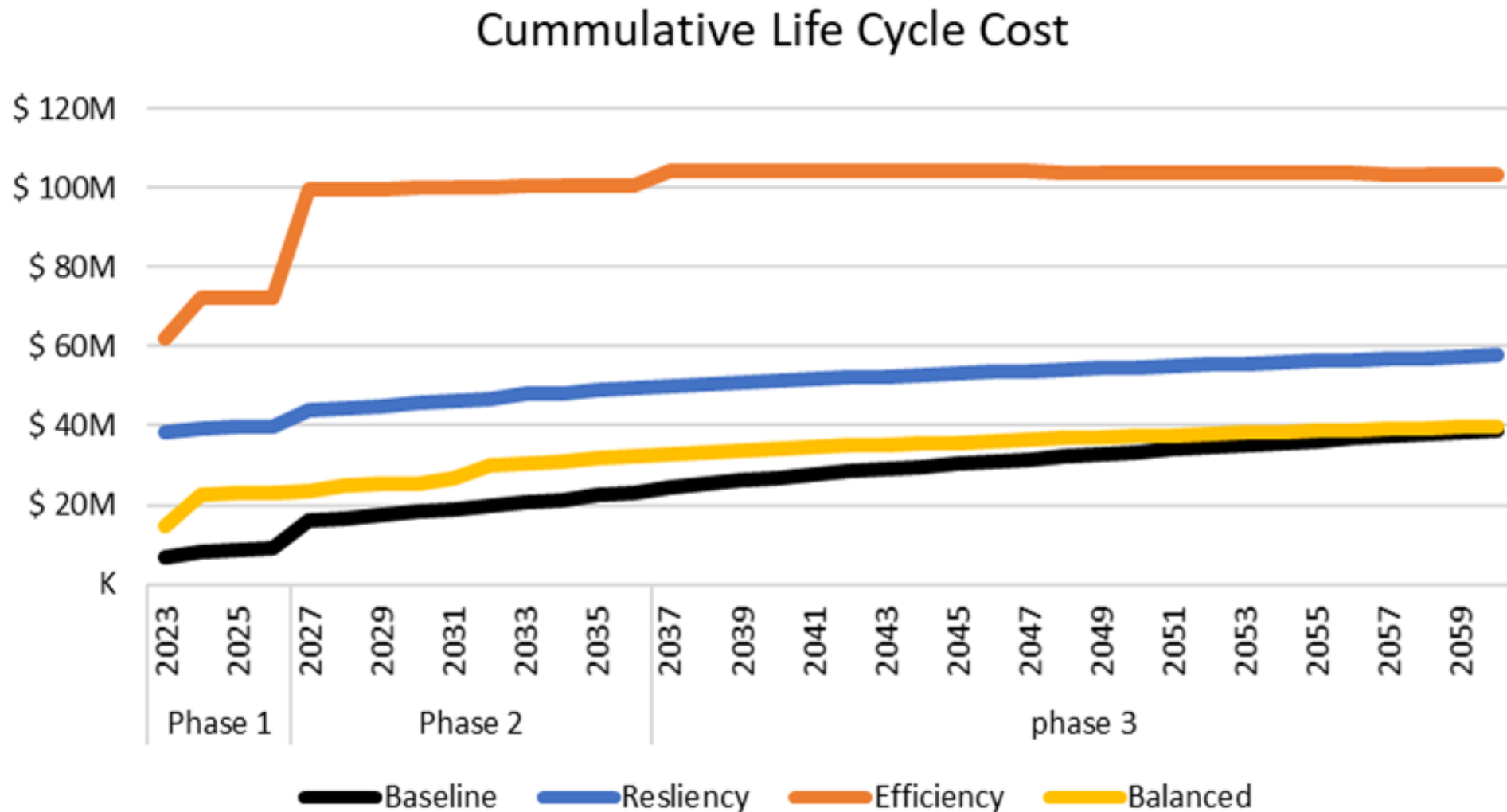
14-Day Grid Isolation Analysis - Winter



14-Day Grid Isolation Analysis - Summer



National Guard Training Site



Agile Planning Summary

Responds to continually changing variables





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Responds to continually changing variables

Considers and quantifies the true impact across campus (cross project/cross utility) and benefits (resiliency/efficiency/capital)



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Considers and quantifies the true impact across campus (cross project/cross utility) and benefits (resiliency/efficiency/capital)

Builds a framework ready for adaptation



Agile Planning Summary

Responds to continually changing variables

Considers and quantifies the true impact across campus (cross project/cross utility) and benefits (resiliency/efficiency/capital)

Builds a framework ready for adaptation

Robust, actionable plan that meets energy and resiliency goals as efficiently as possible

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