

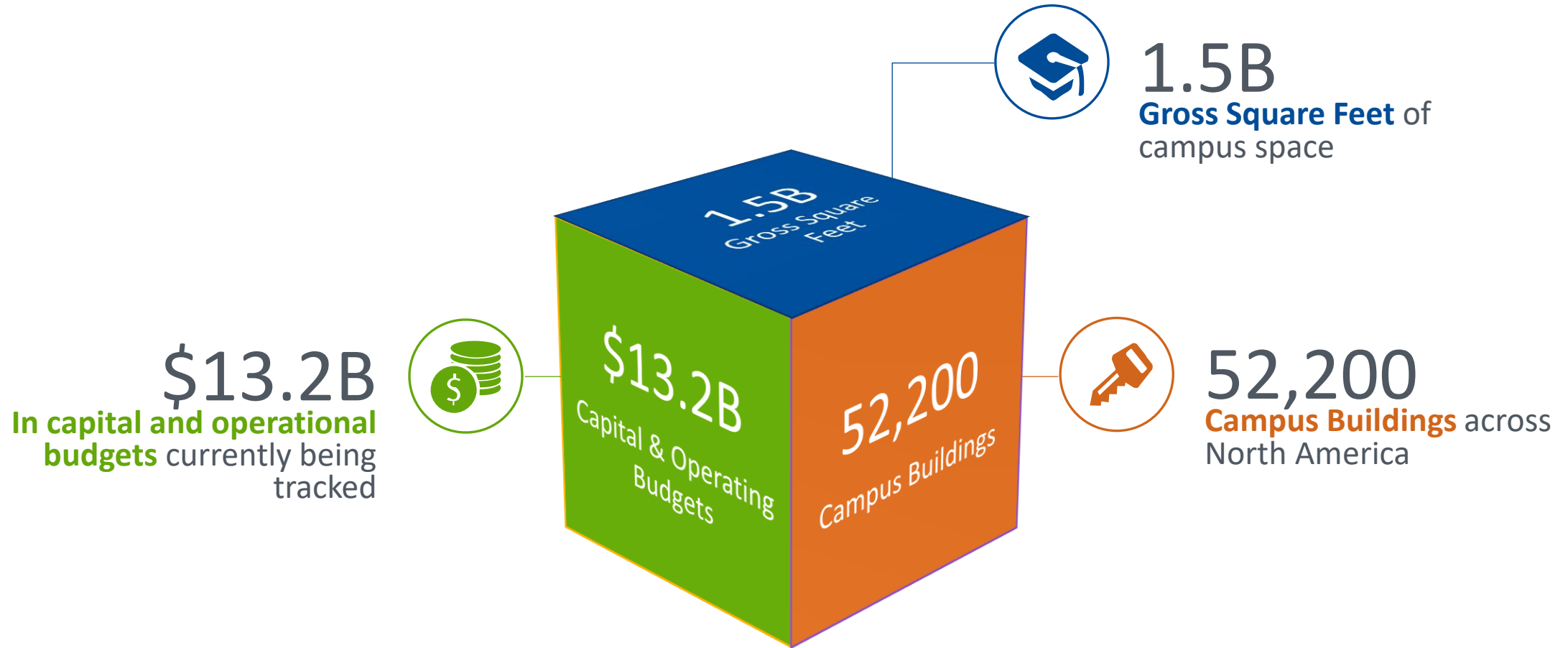
Vermont State Colleges System FY21 ROPA Presentation

Presented by Donna Chow & Laura Dowdy
December 13th, 2021

University of the Sciences in Philadelphia
University of Toledo
University of Vermont
University of Washington
University of West Florida
University of Wisconsin - Madison
Vanderbilt University
Virginia Commonwealth University
Wake Forest University
Washburn University
Washington State University
Washington State University - Tri-Cities Campus
Washington State University - Vancouver
Washington University in St. Louis
Wayne State University
Wellesley College
Wesleyan University
West Chester University
West Virginia Health Science Center
West Virginia University
Western Oregon University
Westfield State University
Widener University
Williams College
Worcester Polytechnic Institute
Worcester State University



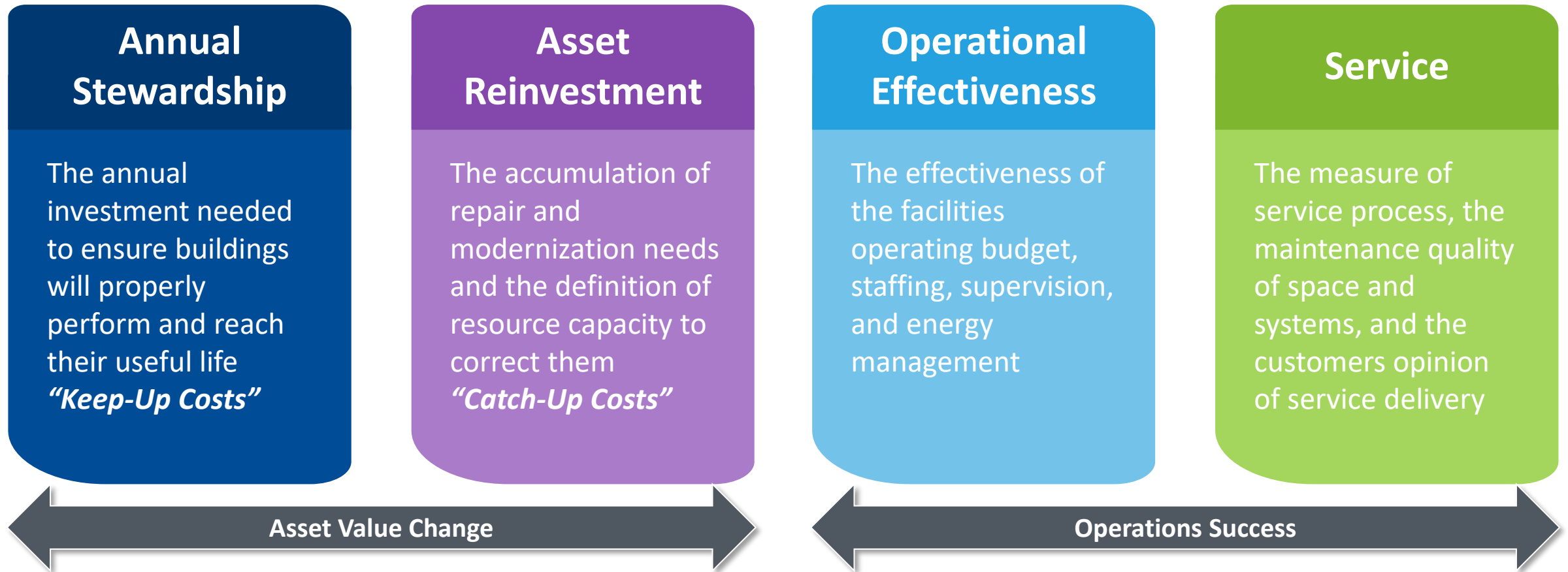
The Largest Verified Facilities Database



Gordian members serve **over 20%** of US College Enrollment

A Vocabulary for Measurement

Facilities Measurement, Benchmarking & Analysis



Vermont State Colleges Regional Facilities Peer Institutions



Return on physical assets (ROPA) Analysis Space Totaling 2.23M GSF. Analysis does not include the CCV Sites.

Peer Institutions	Location
Plymouth State University	<i>Plymouth, NH</i>
Maine Maritime Academy	<i>Castine, ME</i>
Kennebec Valley Community College	<i>Fairfield, ME</i>
University of Maine at Machias	<i>Machias, ME</i>
University of Maine at Fort Kent	<i>Fort Kent, ME</i>
Eastern Maine Community College	<i>Bangor, ME</i>



Comparative Considerations

Size, technical complexity, region, geographic location, and setting are all factors included in the selection of peer institutions (Gordian Public Institutions within Higher Education)

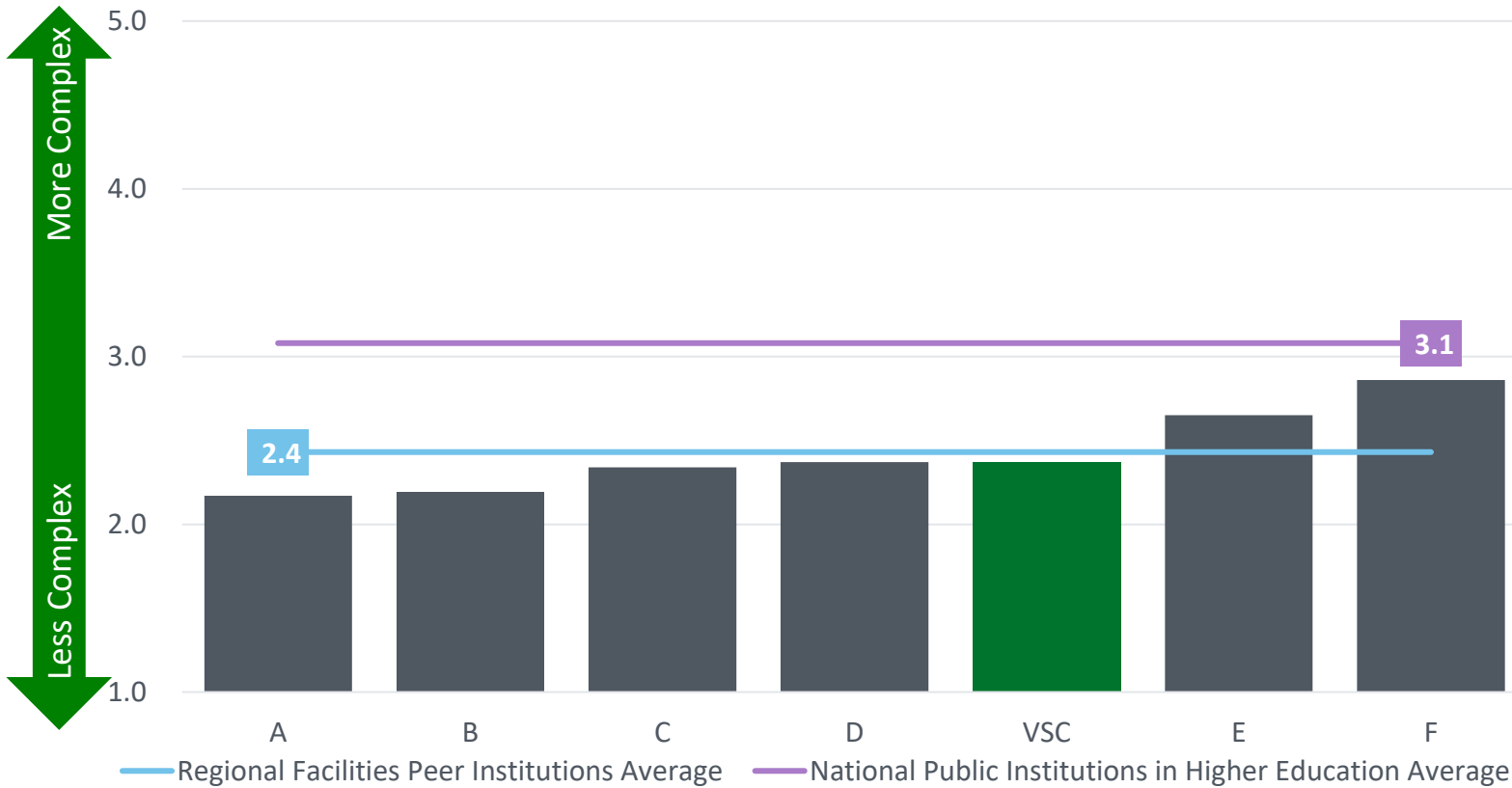
Technical Complexity of Vermont State Colleges



Having a higher Tech Rating will drive capital and operational cost – VSC being at the higher end of their peer group will face these challenges as the space ages and comes due for replacement.

FY21 Tech Rating

VSC vs. Peers



Examples of Building Tech Ratings:

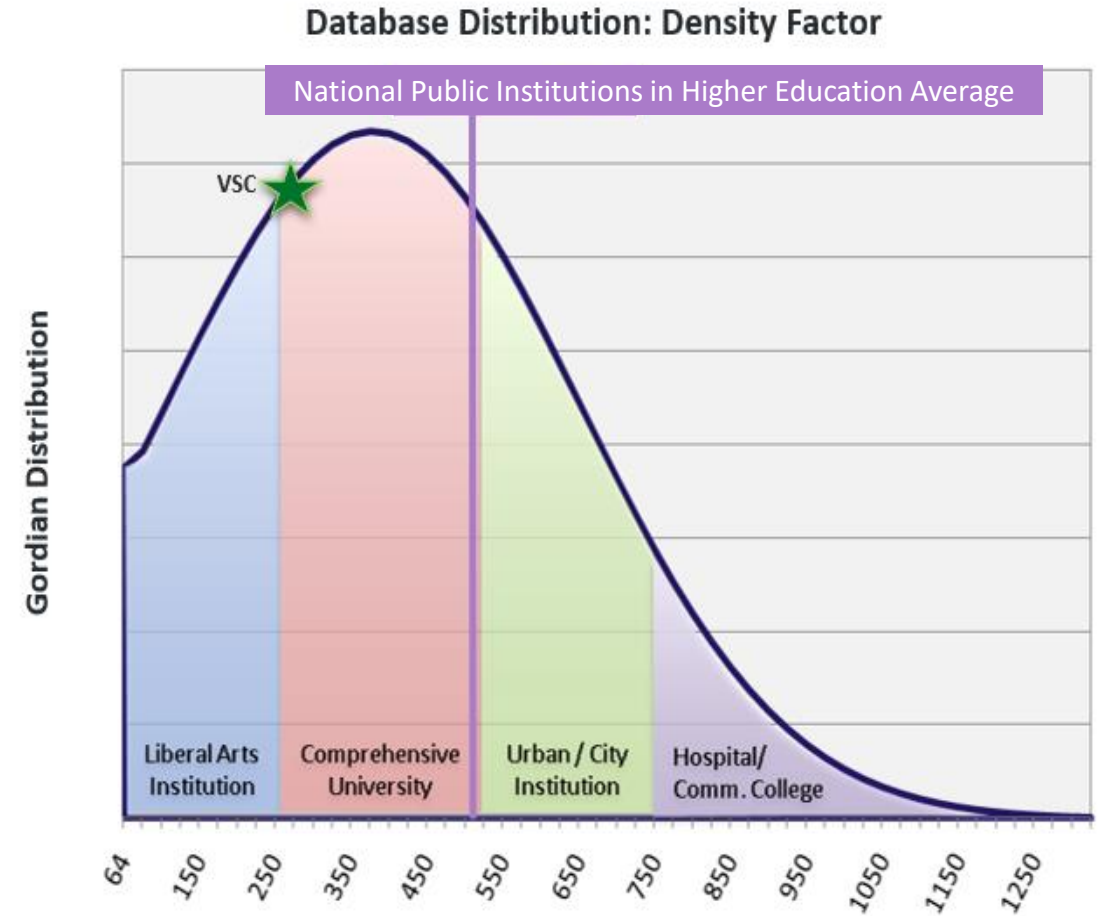
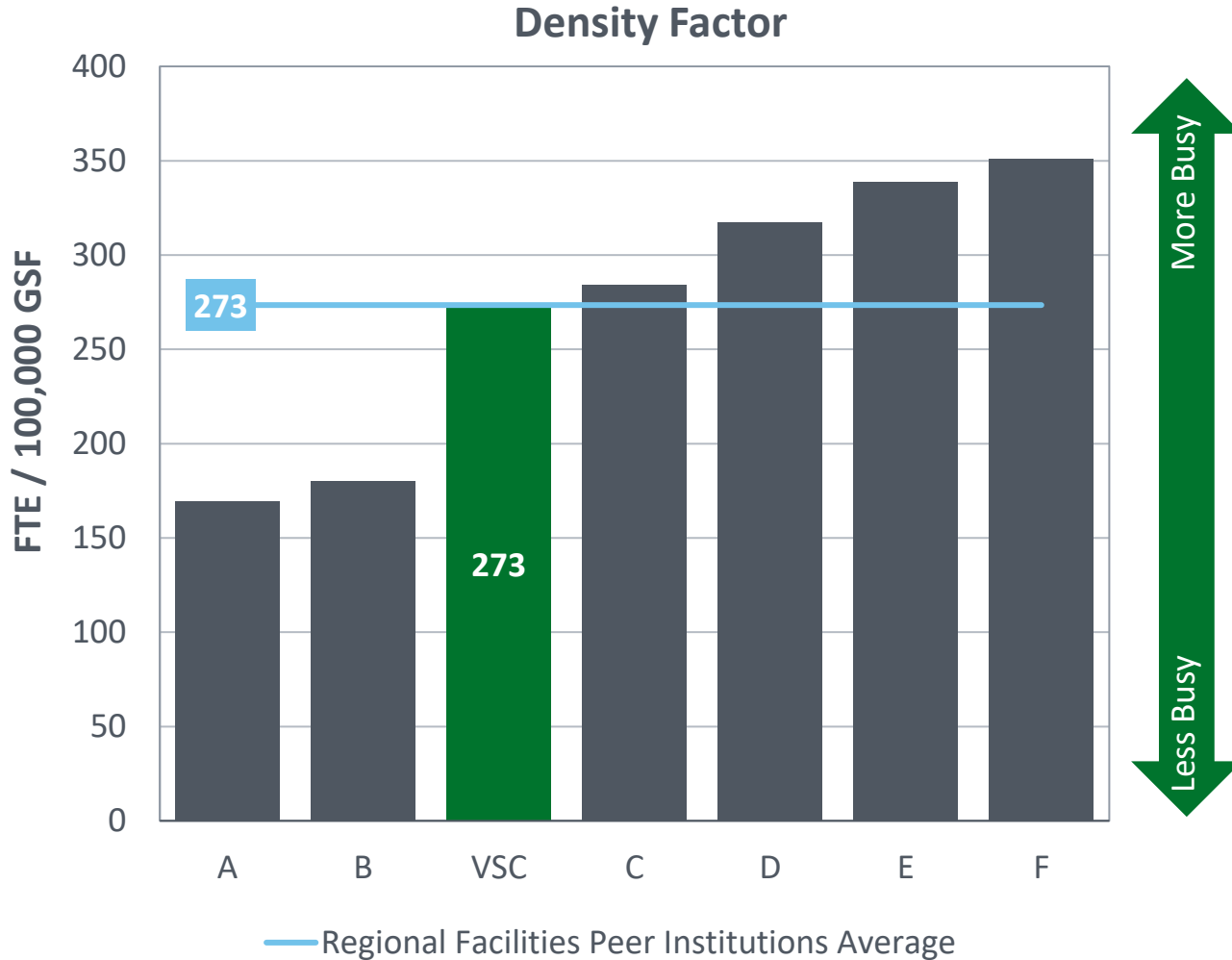
- 1 – House
- 2 – Academic Building, no central cooling
- 3 – Academic Building, with central cooling
- 4 – Academic Science Facility
- 5 – High-end Science Research Facility

Technical Complexity Impacts:

- Daily Operating Costs
- Maint. Trades Staffing Mix
- Energy Consumption
- Capital Replacement Costs

Density in Line with Most Peer Institutions

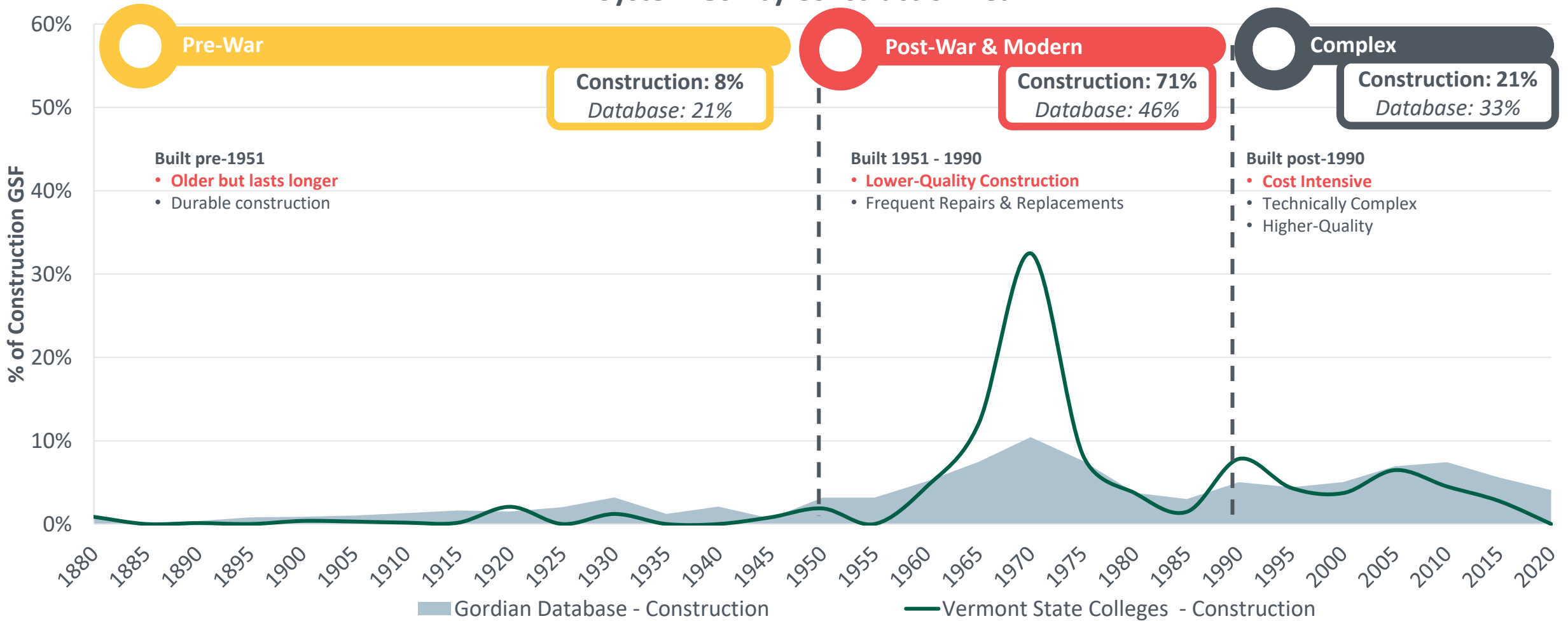
Density impacts the wear-&-tear of the space, custodial staffing needs, and cleanliness expectations.



Putting the System's Building Age into Context

A majority of VSC space is starting with a building foundation that needs more frequent repair and replacement.

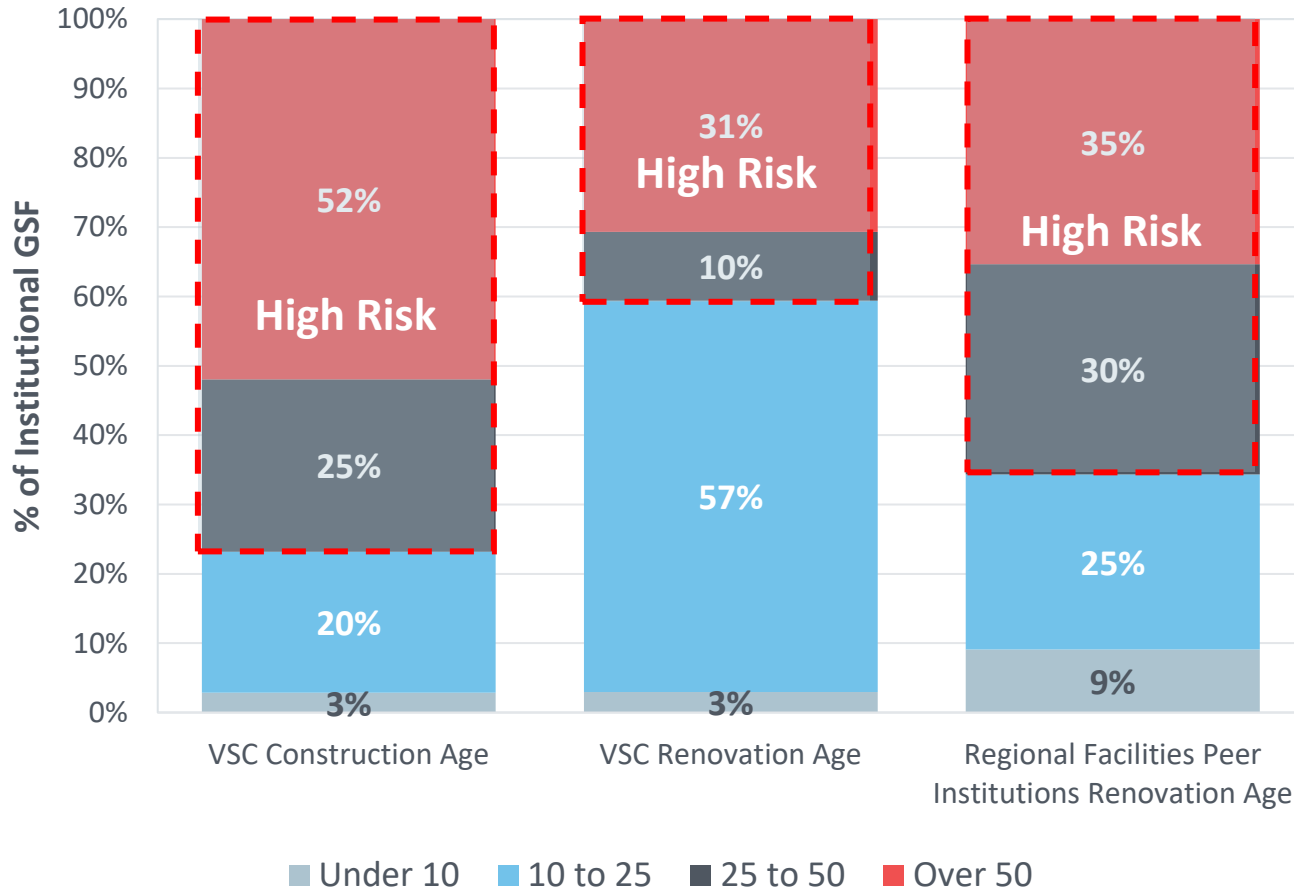
System GSF by Construction Year



Construction Age vs. Renovation Age

Ideal age profile would have equal distribution of age between four categories; however, large portions of the GSF will be moving to the next age category (from 10 to 25 → 25 to 50). This will create additional strain for facilities and management.

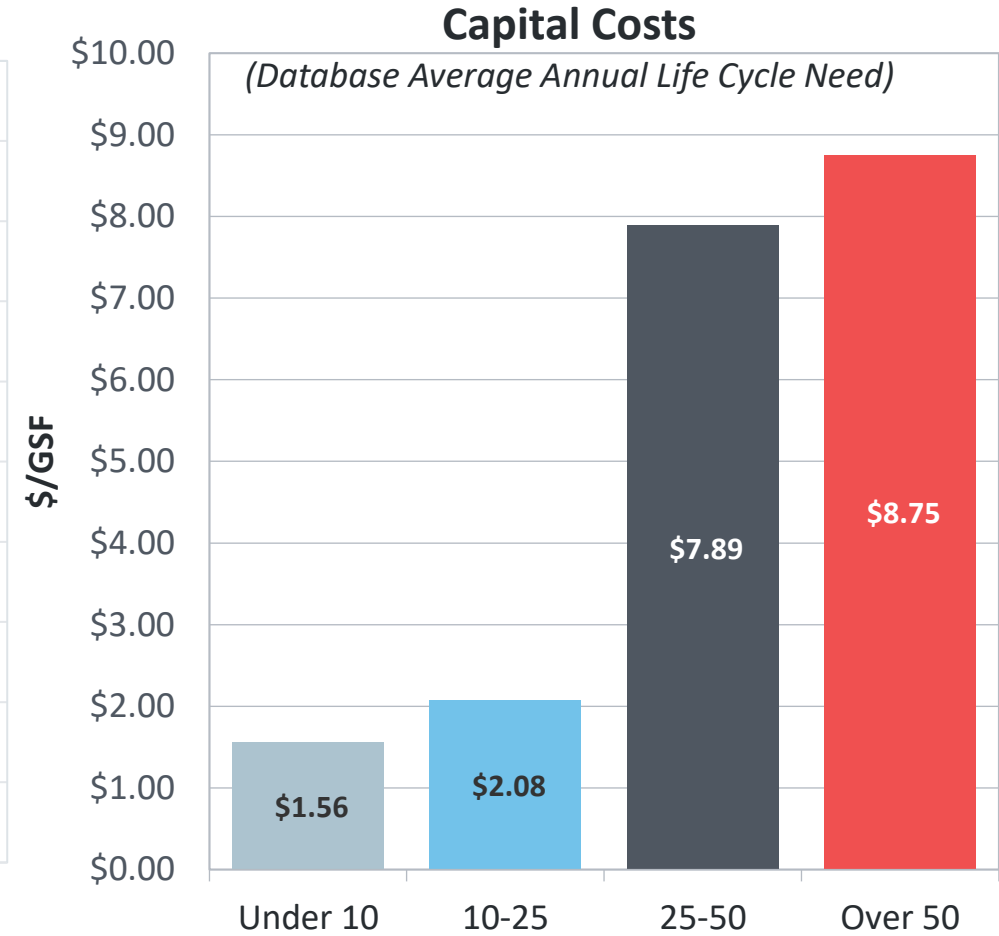
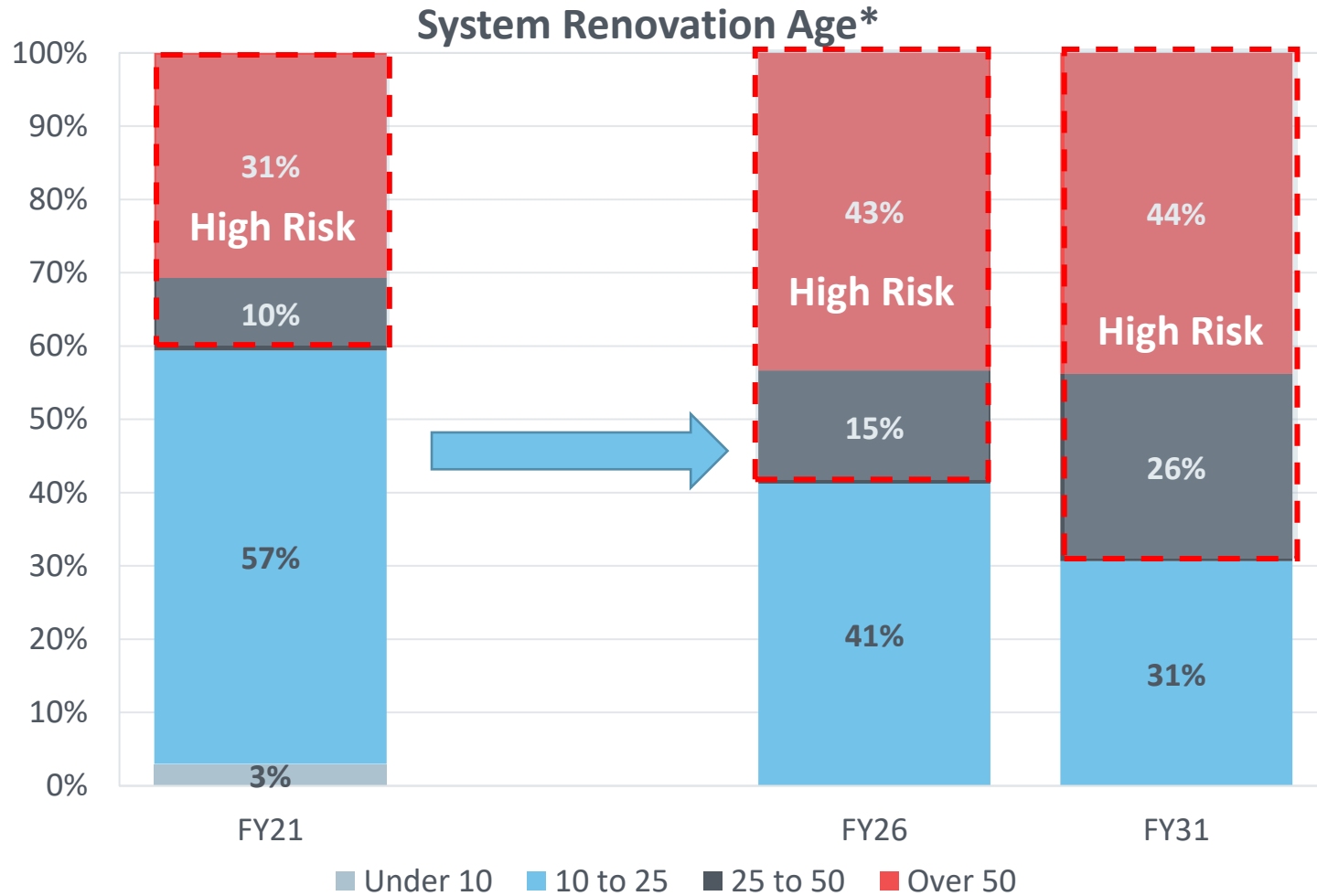
System Age by Category



	Operational Demands:	Capital Risk:
Over 50	React as Needed: Issues in components past the end of their lifecycles will demand reactive maintenance.	Highest Risk: Life cycles of major components past due – end of building life cycle approaching.
25-50	Balance PM and Reactive Maintenance: Younger components still require PM. Aging components require reactive maintenance.	Higher Risk: Life Cycles coming due in core building components.
10-25	Aging components require reactive maintenance.	Medium Risk: Lower cost space renewal updates needed.
Under 10	Focus on PM: Significant need for PM in young systems.	Low Risk: “Honeymoon” period – little need for capital reinvestment.

Age Projection Indicates Growing High-Risk Space

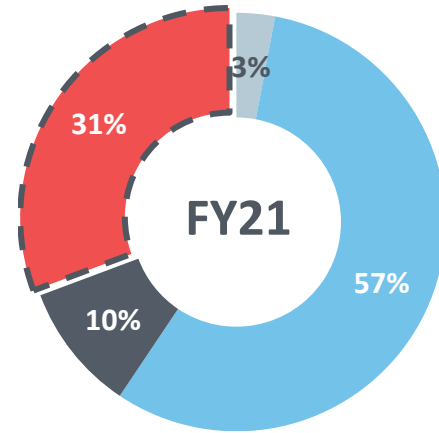
VSC profile will contain more high-risk space than peers in the next 10-years. It's projected to be 70% high-risk space by FY31 if there are no major renovations planned.



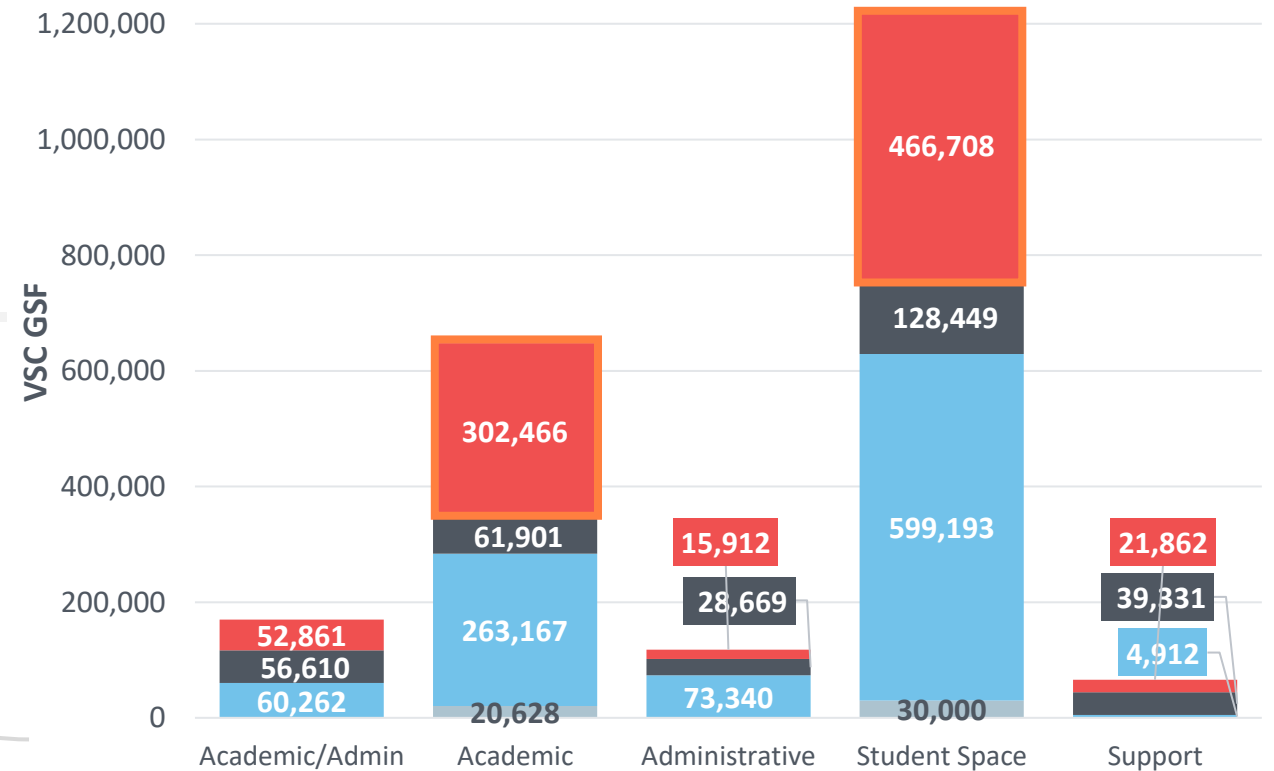
Focus on Improving Systems for Programmatic Growth

VSC currently has the advantage of a younger age profile, plan to address the aging academic and student space through major renovation in the next few years.

VSC Distribution of Campus Age by Risk Category:



Portfolio Breakdown of Campus Age by Risk Category



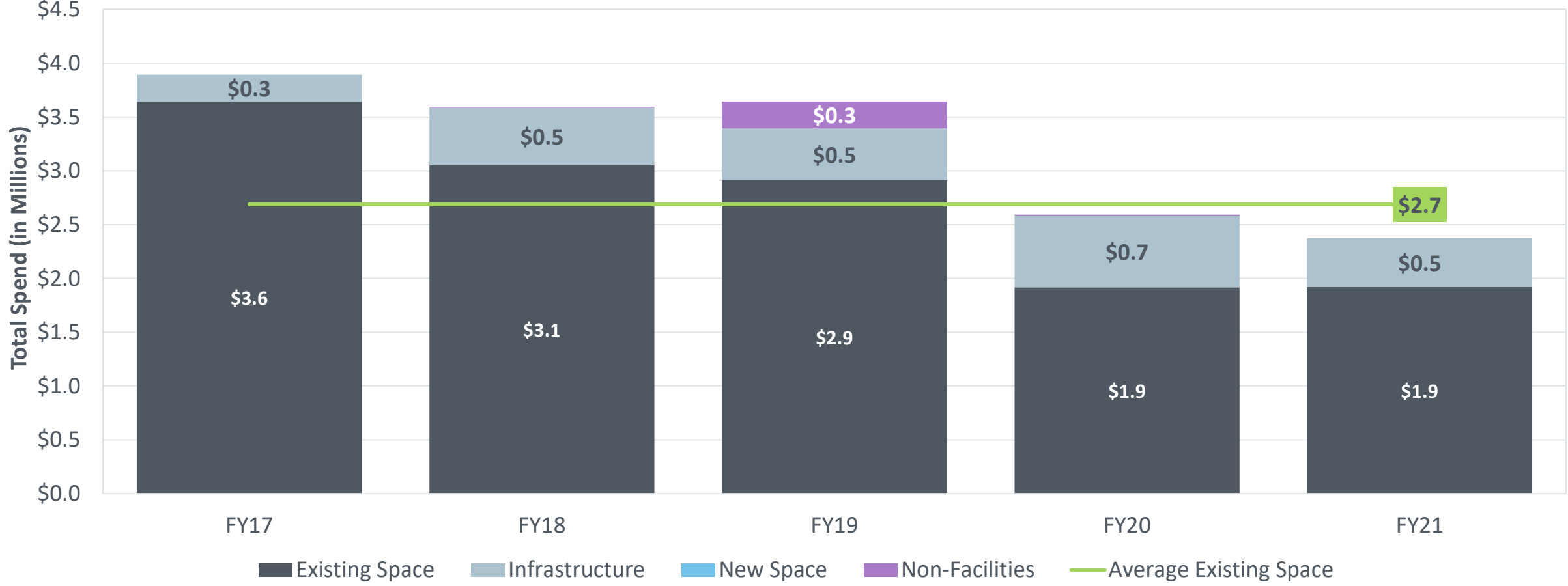
- Low (Under 10 Years):** Newer space with minimal capital need but high customer expectation; great opportunity to PM
- Medium (10-25 Years):** Capital needs with short life cycles start to come due; work requests begin to increase
- High (25-50 Years):** Major envelope and mechanical life cycles come due; staff must address inefficient or failing components
- Highest (Over 50 Years):** Life cycles of most systems are past due; probability of emergency repair and replacement increases

Capital Investment Has Decreased Over the Past 5-Years



With the decrease in capital investments into existing space, building needs and operational demands will increase as systems begin to lose efficiency and require more reactive work.

Vermont State Colleges Capital Investment Over Time

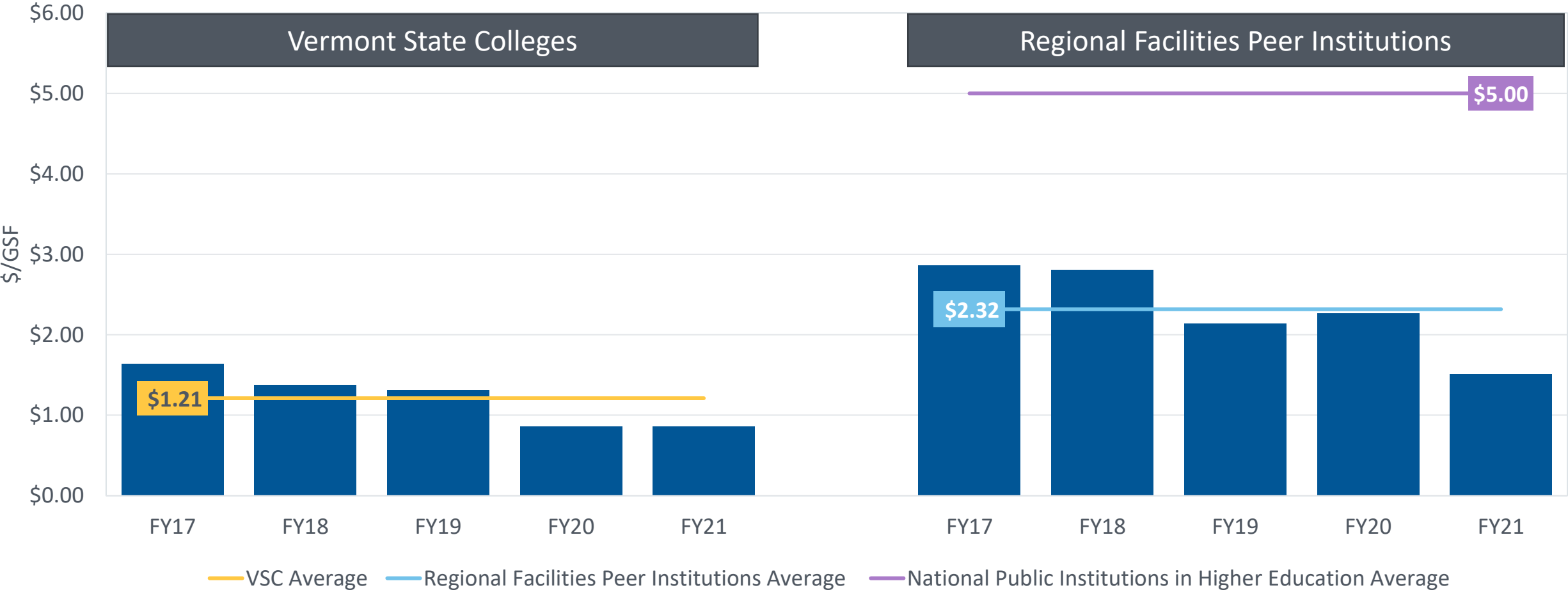


VSC Spends \$1.11/GSF Less Than Peers Into Existing Space



VSC underinvesting about \$2 million annually into existing space compared to peers (5 Year average). Prioritizing existing space investment will ensure programs will continue servicing the students and clients on campus.

Existing Space Investment* vs. Peers



*Excludes New Space, Infrastructure, & Non-Facilities Spending

Life Cycle Need:

A \$/GSF model that considers multiple factors for individual buildings.

Amortized over the life of the building -> budgeted model



Annual Investment Target:

Life Cycle is discounted for intentional deferral, project coordination, space churn, and one-time funding

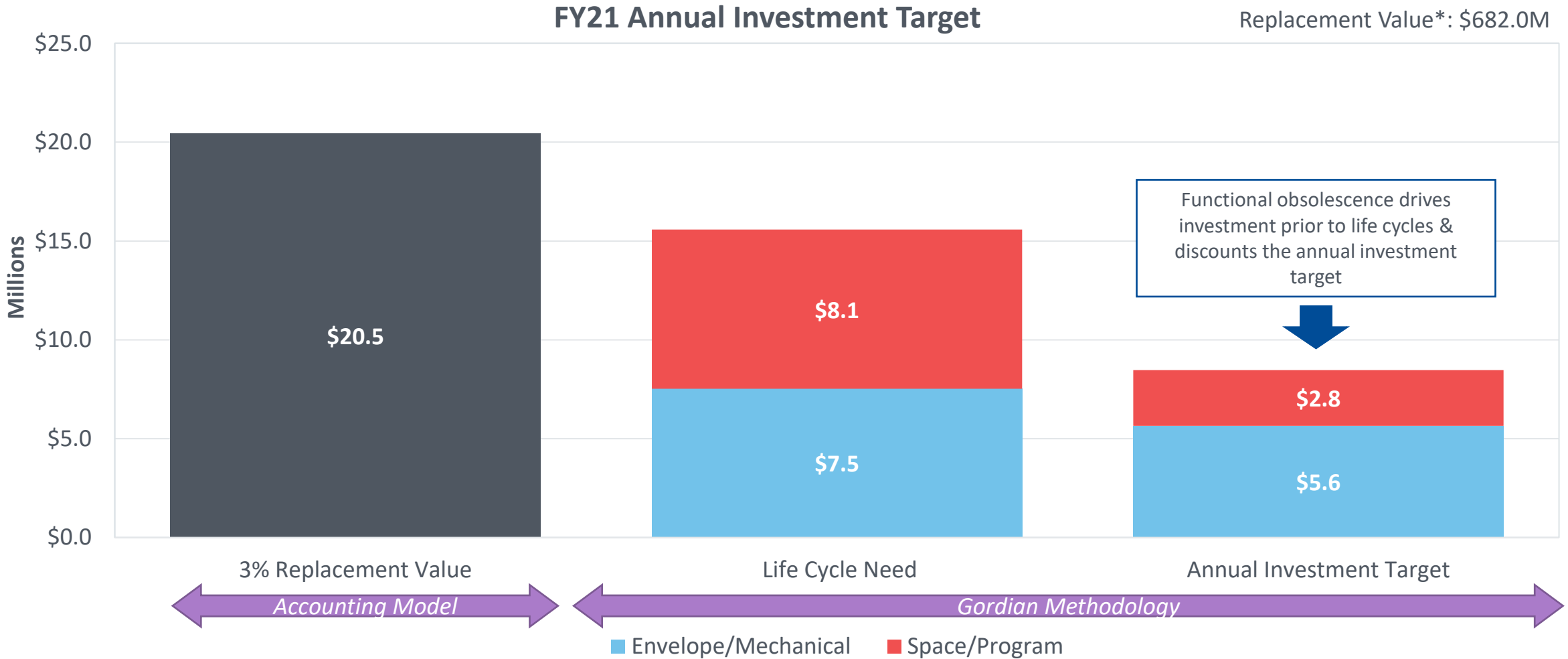


What factors do we consider?

- Building function
 - Building size
 - Technical complexity
 - An age factor is applied
 - An architectural adjuster is applied, if applicable
 - A regional cost adjuster is used
-
- Envelope/mechanical target is discounted less heavily to encourage high return on investment project selection
 - Depending on the institution's programs and the consistency of other funding, Space/Program target may vary

Defining an Annual Investment Target

Gordian recommends an Annual Investment Target of \$8.4M into existing space for FY21



How Much Should VSC Invest Moving Forward?

At the current investment levels, VSC will be around \$7.0M short, annually, to keep up with campus needs

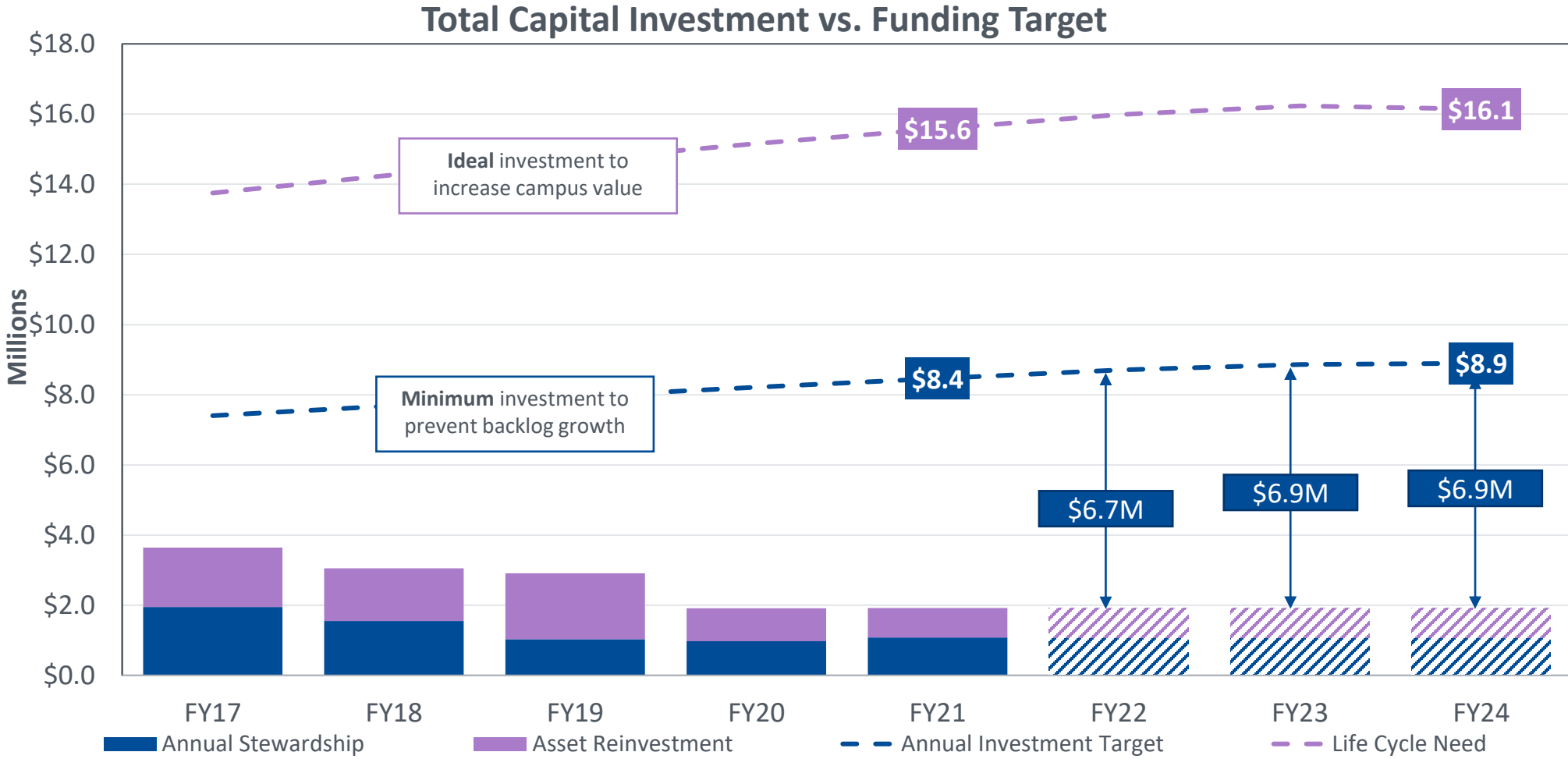
Asset Reinvestment – One Time
The accumulation of repair and modernization needs and the definition of resource capacity to correct them
“Catch-Up Costs”

State Funds

Annual Stewardship – Recurring
The annual investment needed to ensure buildings will properly perform and reach their useful life
“Keep-Up Costs”

VSC Funds

Preventative Maintenance



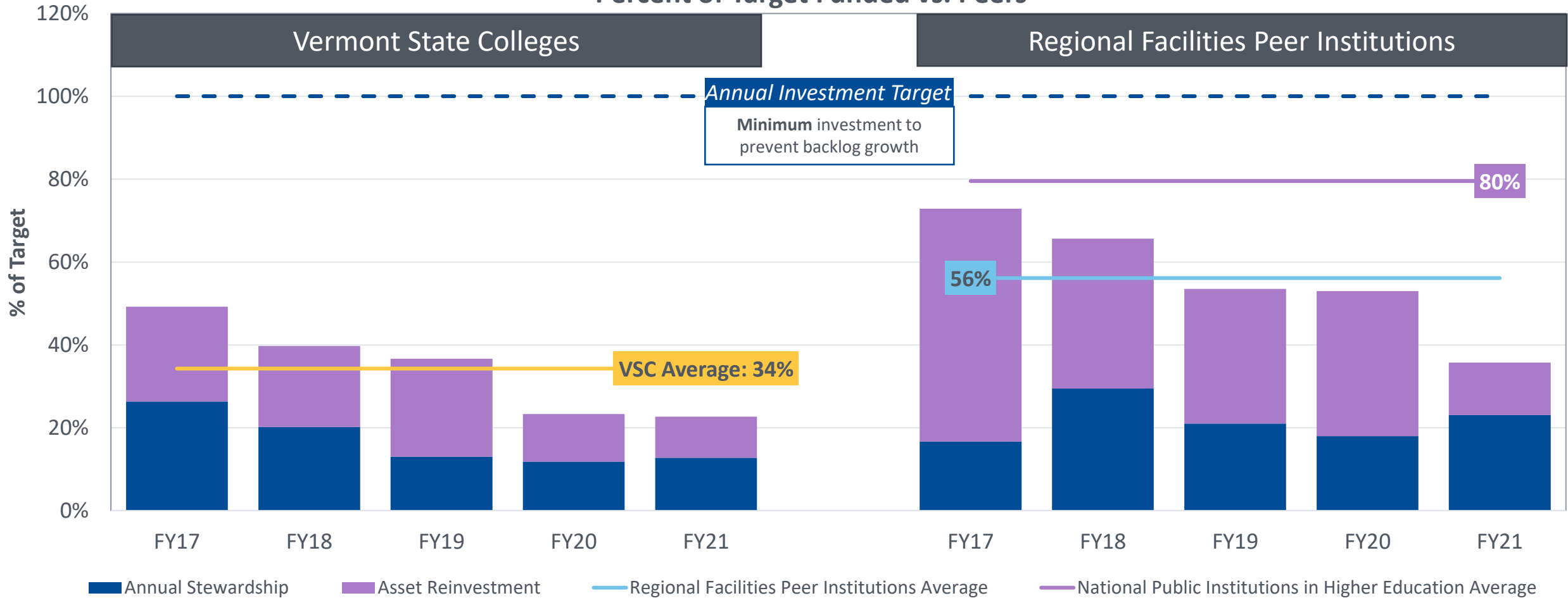
Excludes infrastructure, non-facilities and new construction investment

VSC Funds 34% of Target, Peers Fund More Than Half



Consistent shortfall to target contribute to the growth of deferred maintenance. Any investment below the annual investment target will lead to an increased risk on campus.

Percent of Target Funded vs. Peers

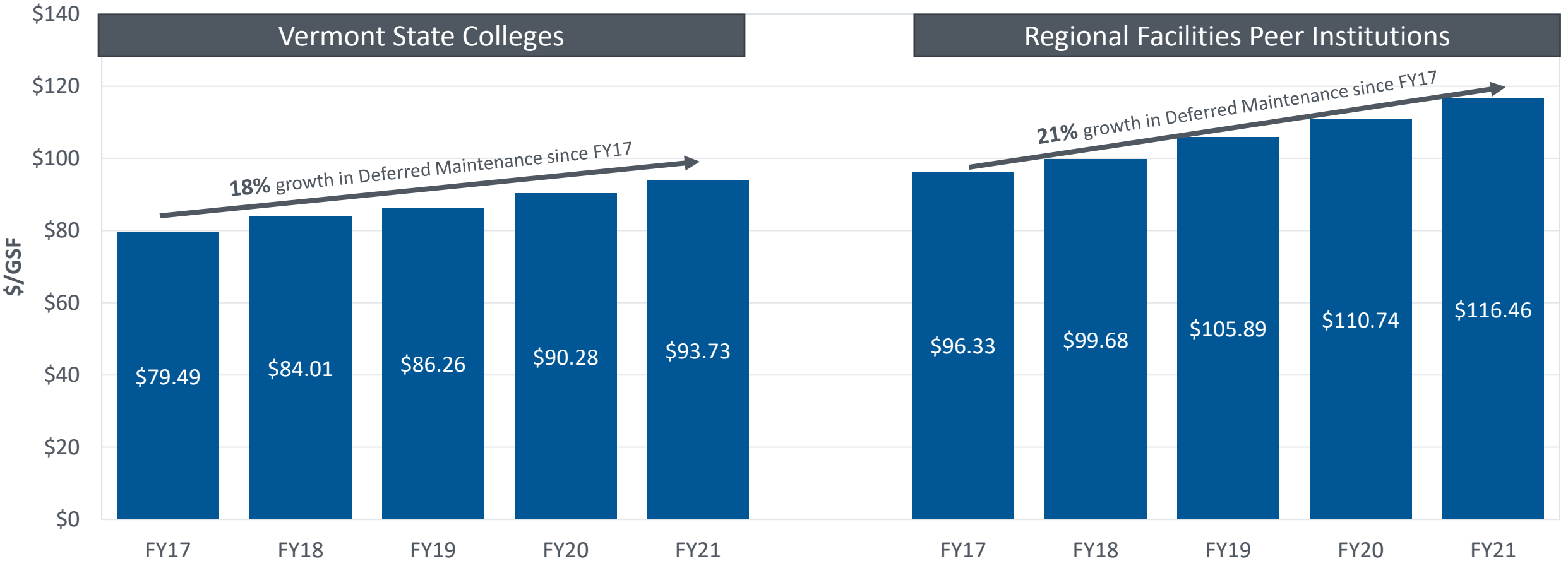


Excludes infrastructure, non-facilities and new construction investment

VSC Needs to Establish Position on Risk Responsibility & Tolerance

Even though peers are investing 56% of their annual investment target, they are playing “Catch-Up” because the deferred maintenance has been increasing well before FY17.

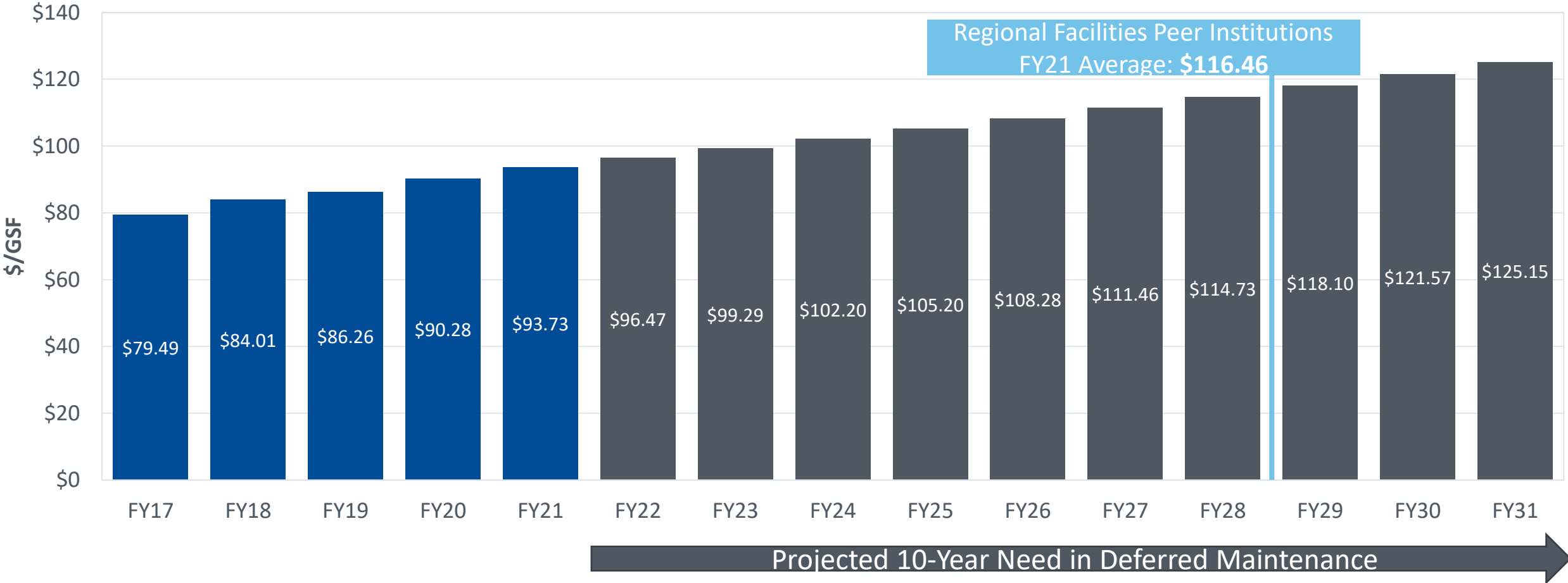
Deferred Maintenance vs. Peers



Deferred Maintenance Will Grow 33% in 10-Years

At current funding levels, VSC is projected to surpass peer’s FY21 deferred maintenance average in just seven years. Current investment across VSC will not be sufficient to address growing need; VSC will see similar challenges as peers, but with less funding available.

Projected Deferred Maintenance for Next 10-Years

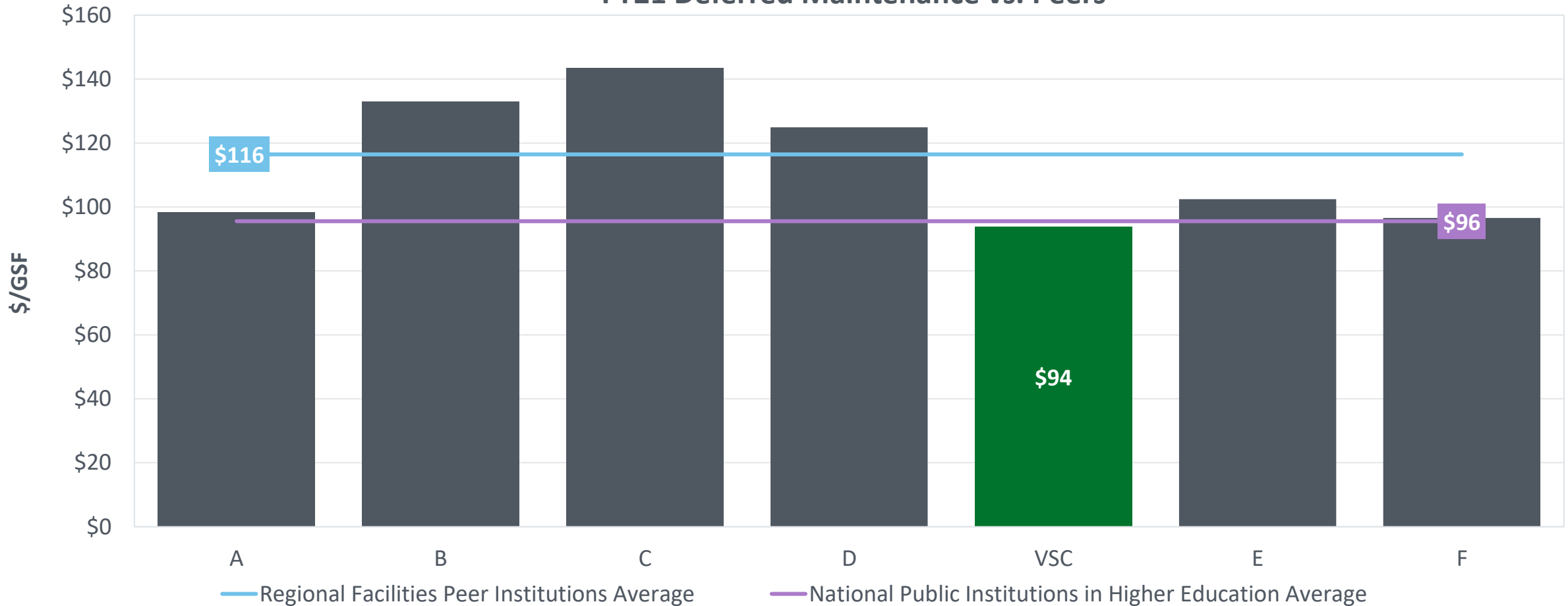


VSC In a Reactive Stage Where Systemic Renovations Are Needed



Deferred Maintenance of \$100/GSF typically indicate major lifecycles past due and have high risk/cost associated with projects. The work on campus will be reactive, and institutional project priorities will shift if this trend continues.

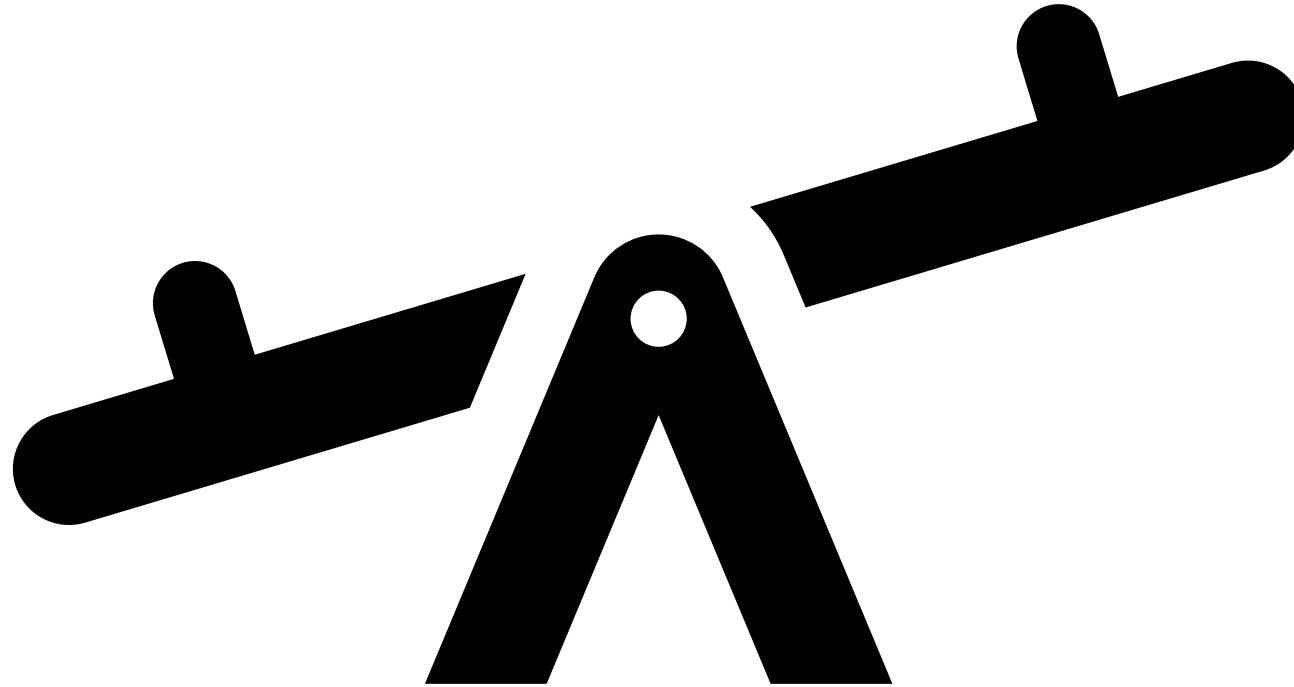
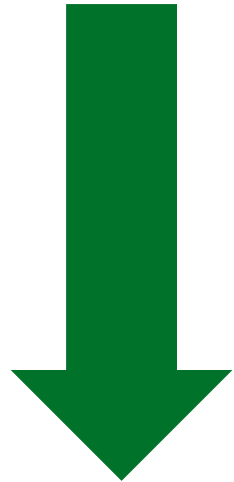
FY21 Deferred Maintenance vs. Peers



Balancing Capital Projects With Daily Operations

As capital investments increase, the daily operational cost to run campus will decrease. Facilities will be adequately equipped to handle the day-to-day operations, perform preventative maintenance to extend the useful life of systems, and effectively handle energy management.

Daily Operational \$\$



Capital Investment \$\$



VSC Operating Budget Decreasing Since FY19

Daily Service

People Costs

Expenses

Preventive Maintenance

Internal PM

External PM

Utilities

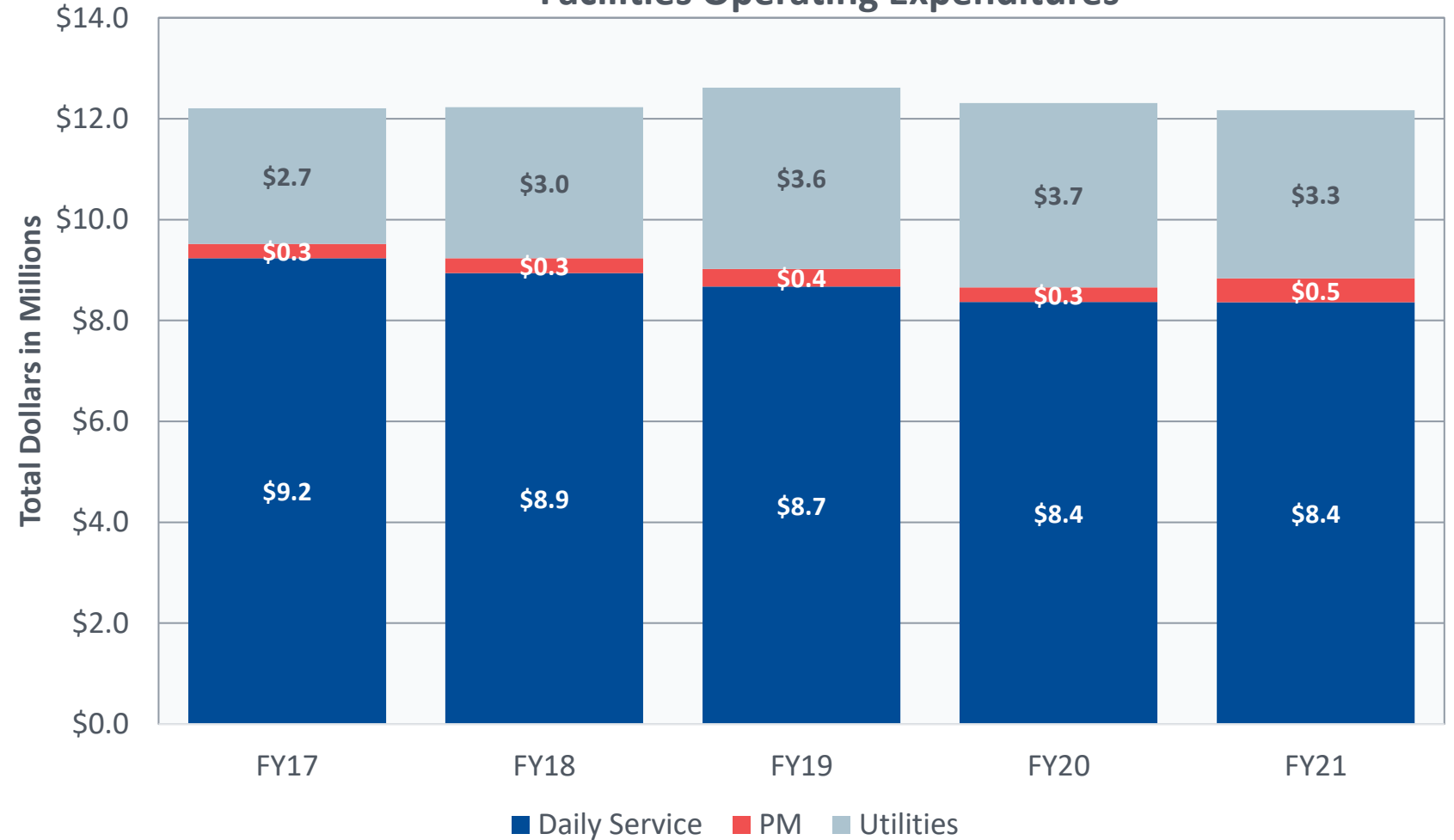
Fossil

Electric

Water

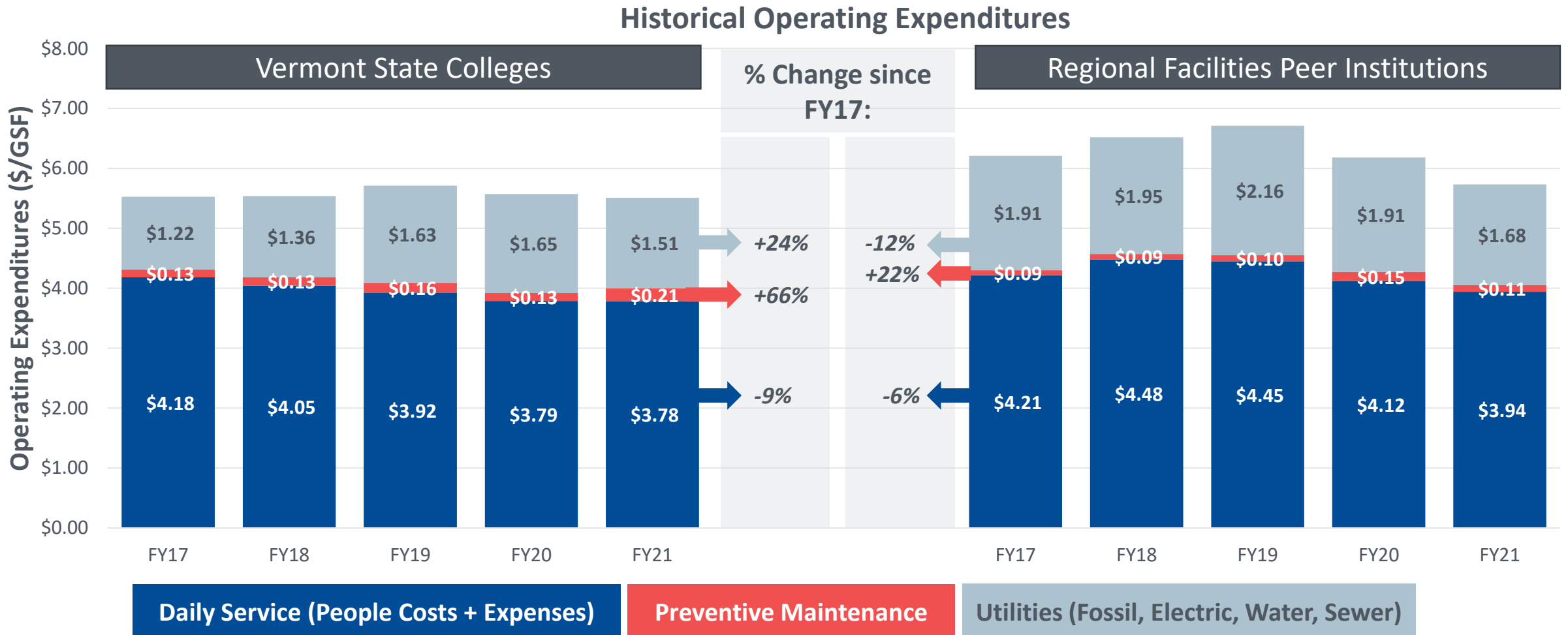
Sewer

Facilities Operating Expenditures



VSC Operating Expenses Against Peers

Peer institutions are facing the challenge of “where to cut” rather than “where to support” facilities

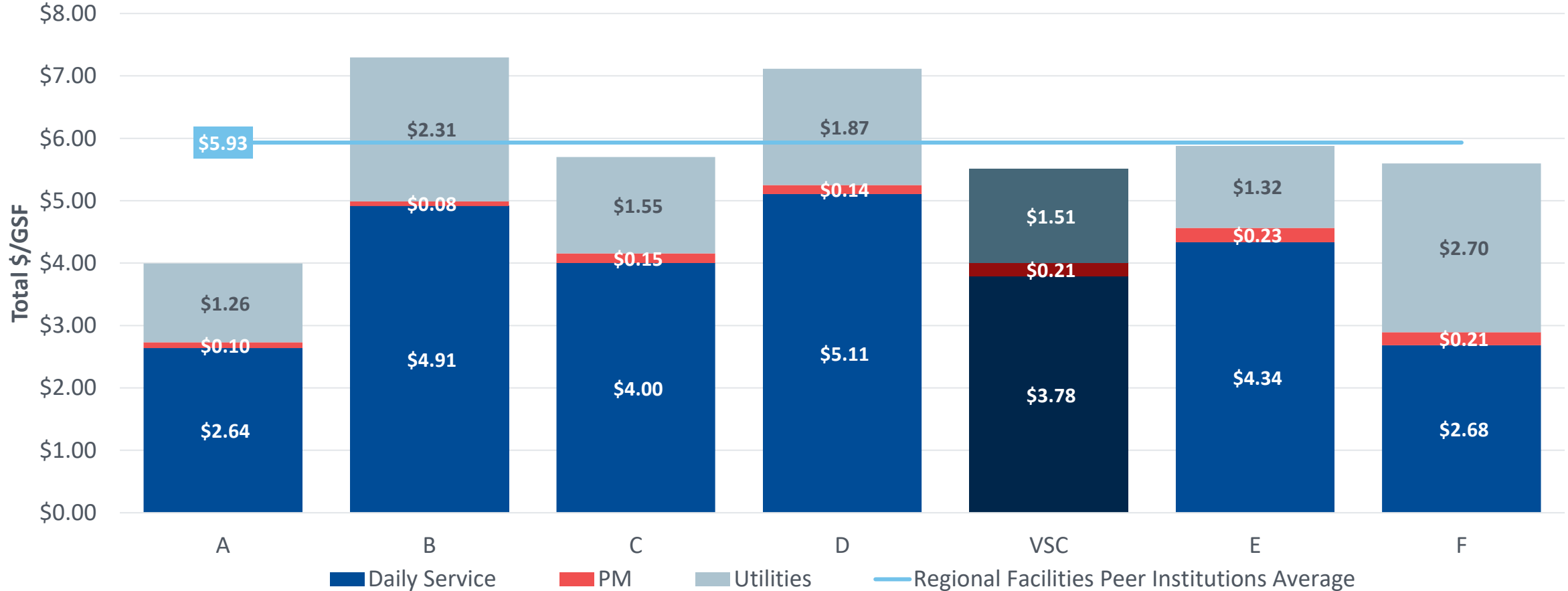


VSC Operating Expenditures vs. Peers

To run campuses on a day-to-day basis, VSC is operating with less dollars compared to peers.

VSC Operating Expenditures (\$/GSF)

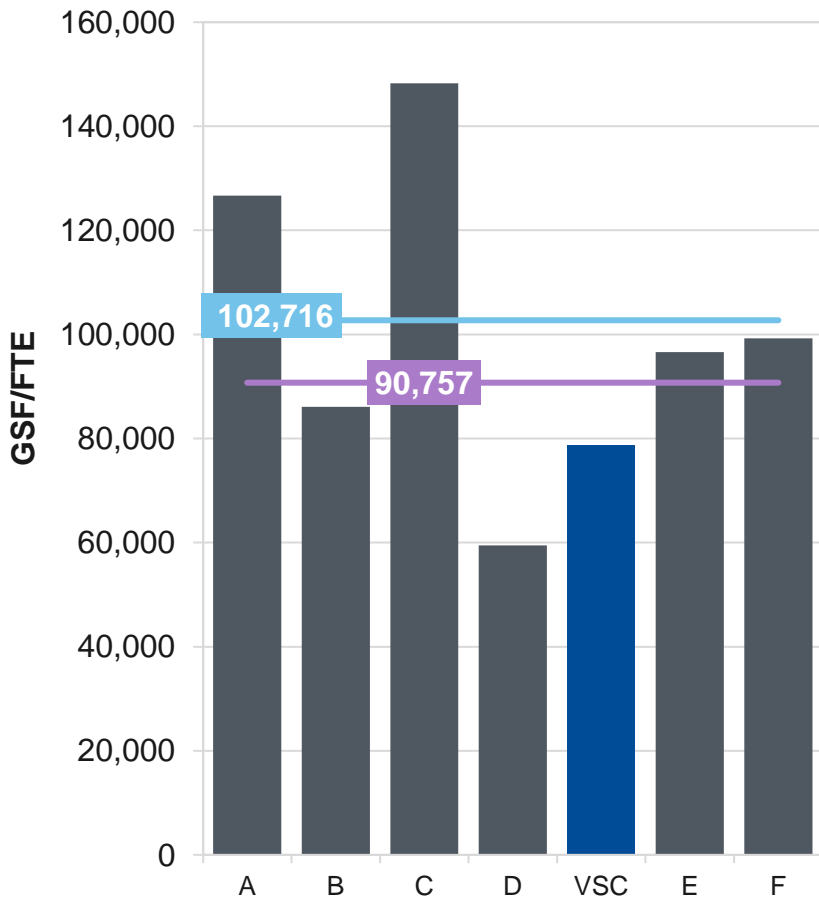
FY21: VSC vs. Peers, COLI Adjusted*



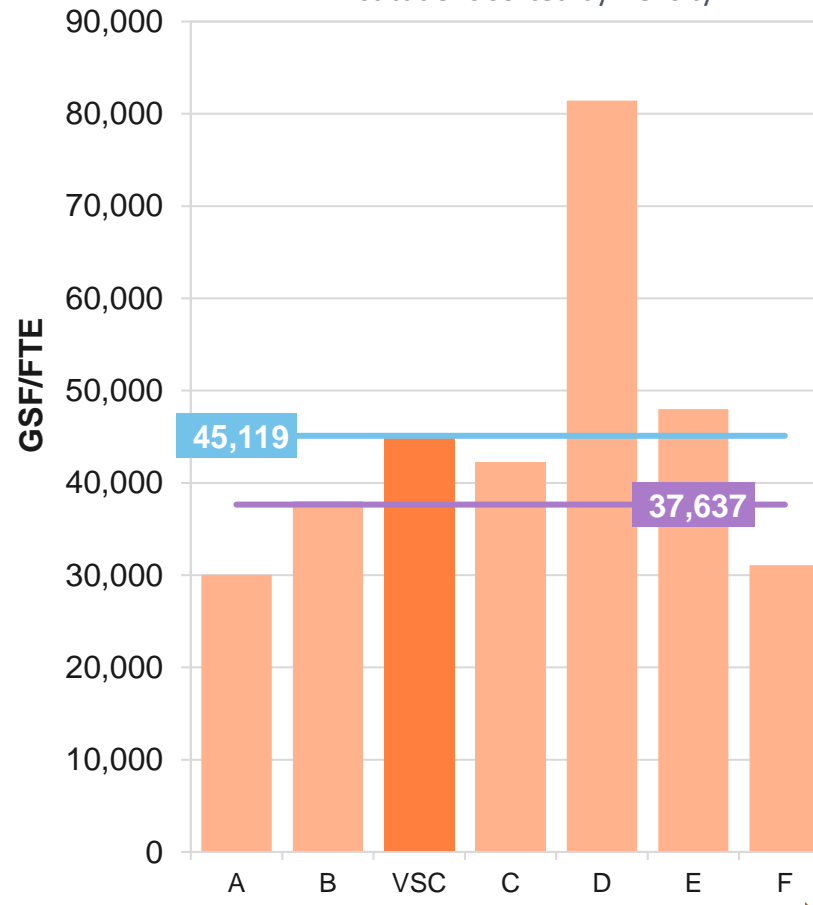
How Capital Impacts Day-to-Day Work

A more technically complex space and dense campus will require more repair/cleaning due to higher usage of the space. In turn, the lifecycle of systems are shortened.

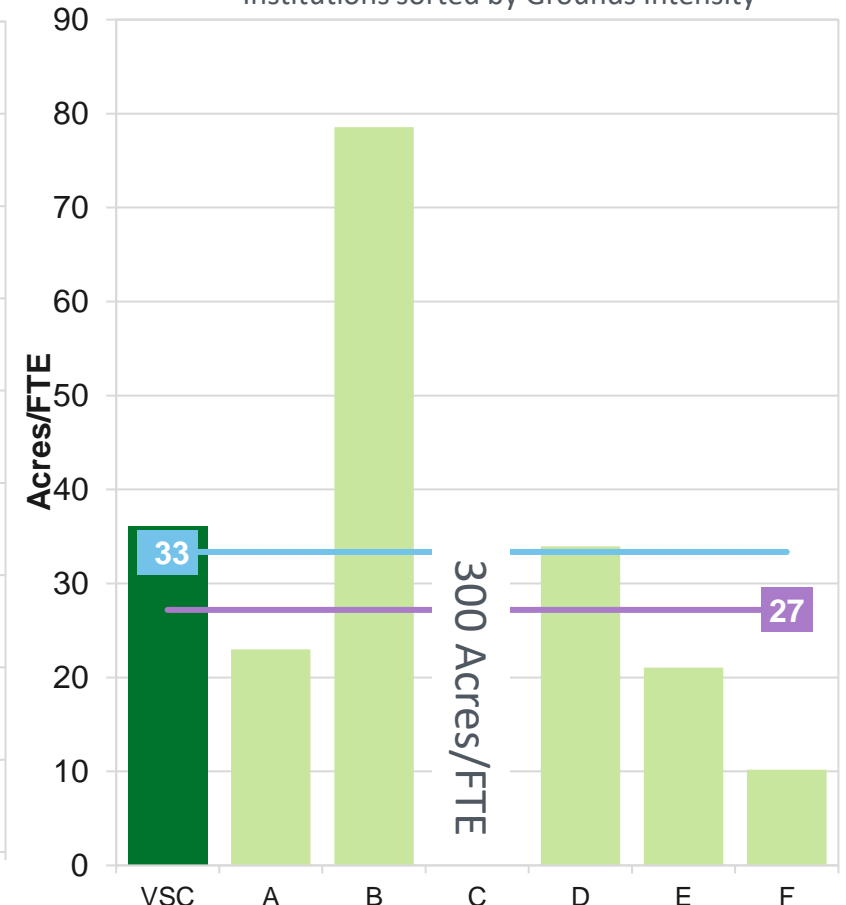
Maintenance Coverage
Institutions sorted by Tech Rating



Custodial Coverage
Institutions sorted by Density



Grounds Coverage
Institutions sorted by Grounds Intensity*



More Complex Space

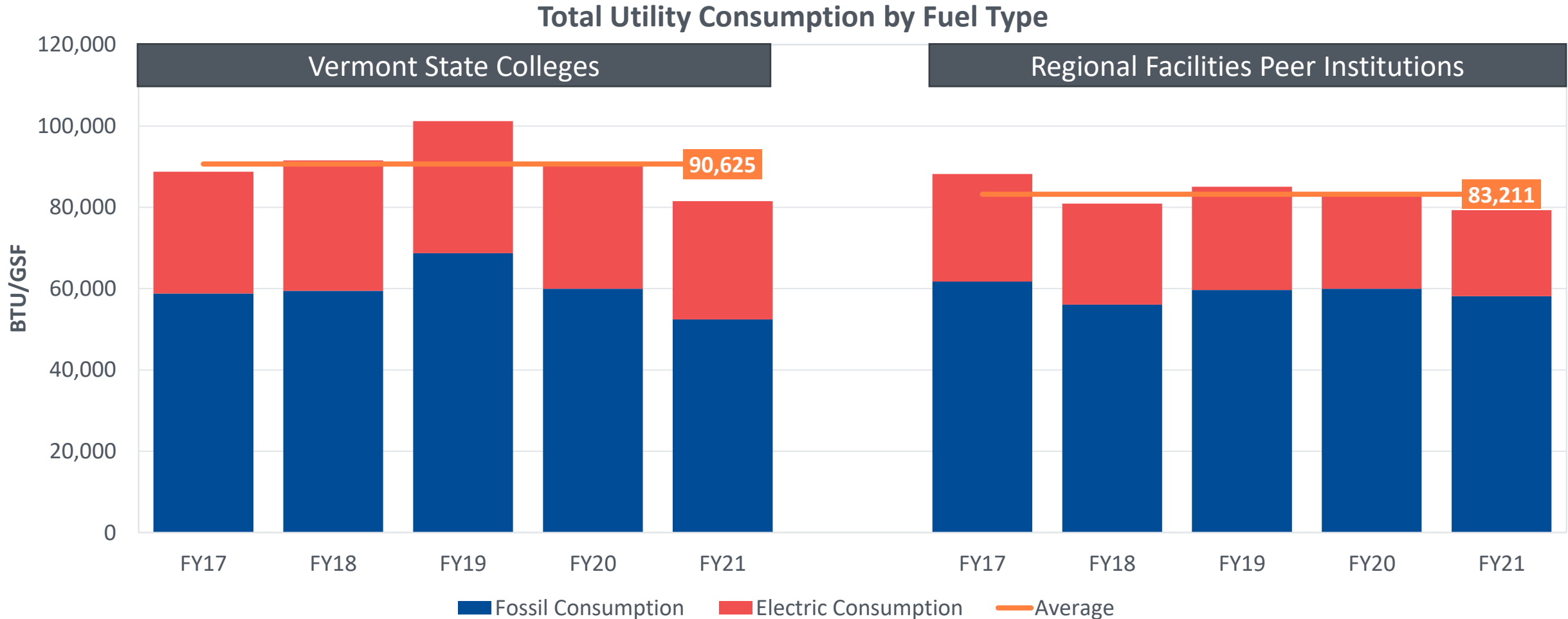
Increased busyness of campus

*Grounds intensity measure number of buildings per developed acre. It describes the relative complexity of the grounds work. A low grounds intensity indicates a more rural campus with large areas of open space, whereas a high grounds intensity most often indicates a more compact, urban campus.

VSC* Consumption Has Decreased Since FY19



Currently VSC is consuming more fossil & electricity compared to peers, however VSC* is seeing a larger decrease in consumption from FY19 to FY21.



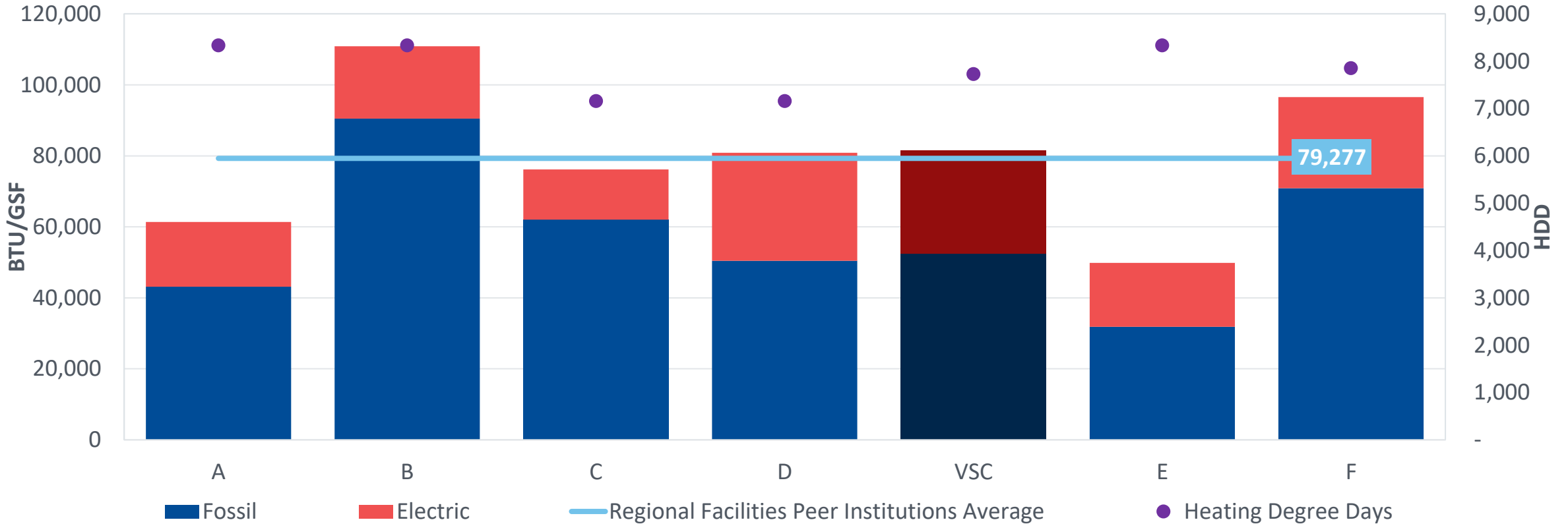
*Utilizing the average of two locations until additional data is received for the remaining institutions

Vermont State Colleges* Trends with Peer Consumption



VSC has consumed less than the heating degree day in FY21 – meaning it took less energy to heat up campus

Total Utility Consumption by Fuel Type vs. Peers



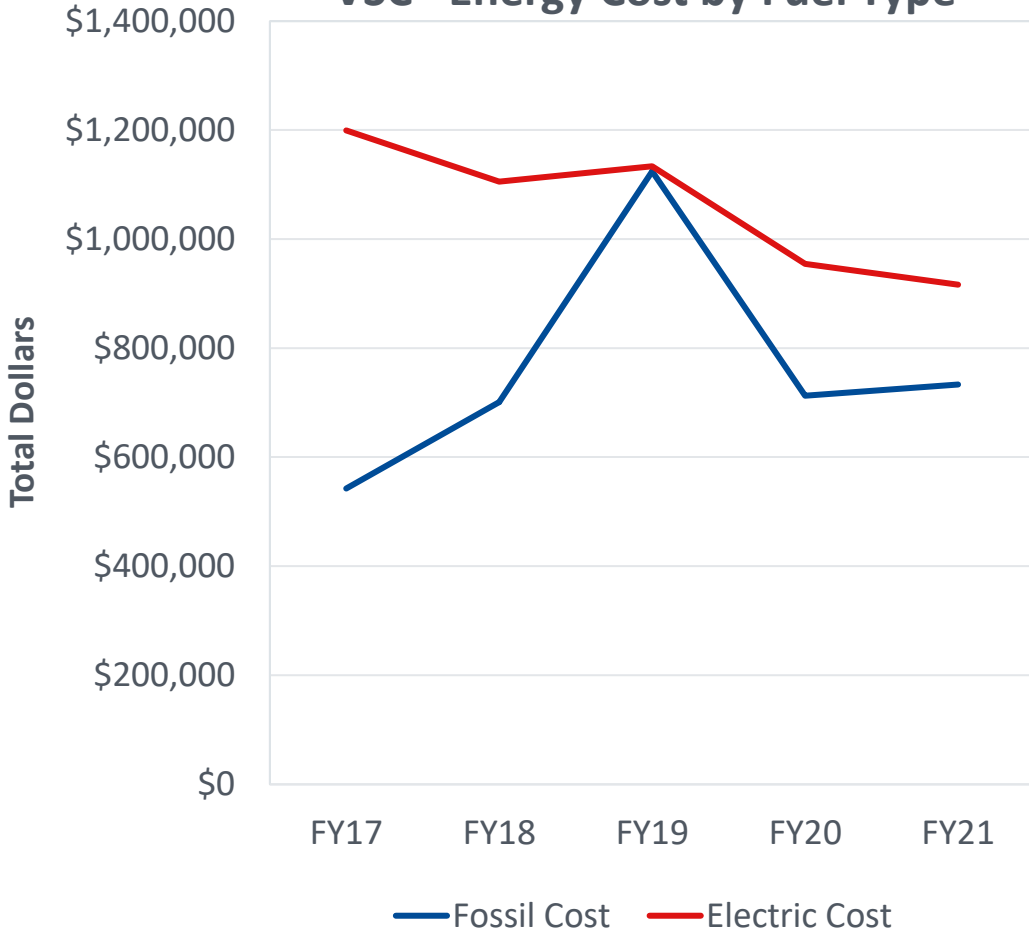
Heating Degree Day (HDD): The number of degrees that a day's average temperature is below 65° Fahrenheit (18° Celsius), which is the temperature below which buildings need to be heated.

Vermont State Colleges* Energy Unit Cost Trend

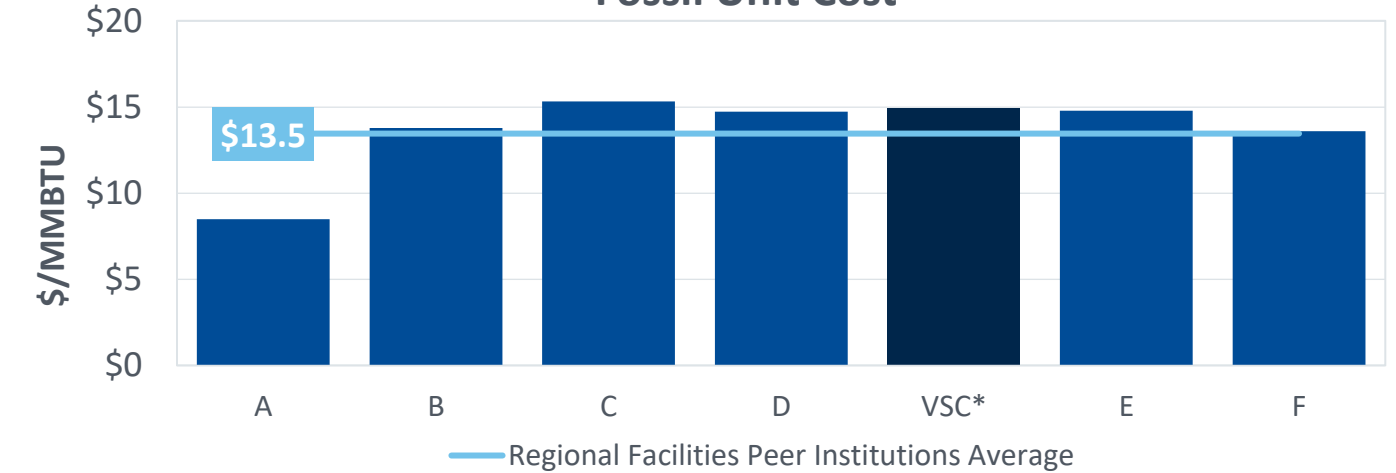


While VSC consumes less energy than peers, VSC has similar rates for both fossil and electricity.

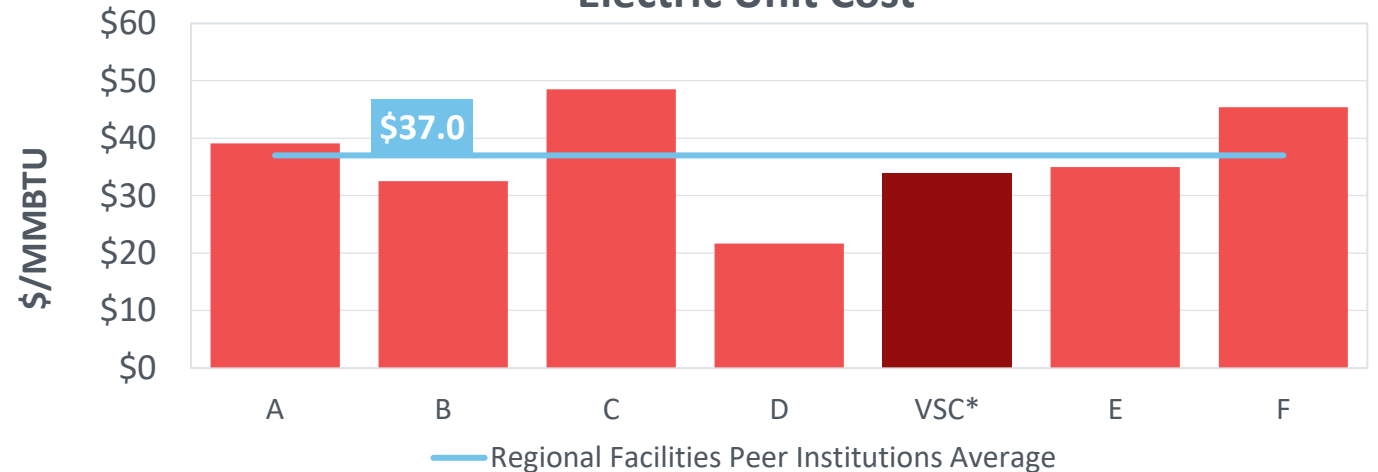
VSC* Energy Cost by Fuel Type



Fossil Unit Cost



Electric Unit Cost



Institutions arranged by Tech Rating

*Utilizing the average of two locations until additional data is received for the remaining institutions

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Questions & Discussion