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Building knowledge

University of Alaska Southeast

FY20 Facilities Benchmarking & Analysis

Comprehensive Facilities Intelligence Solutions

UNIVERSITY of ALASKA SOUTHEAST

FACILITIES BENCHMARKING & ANALYSIS

Take control of your facilities and make the case for change without the guesswork

FACILITIES ASSESSMENT & PLANNING

Plan and execute capital investment plans that are inclusive, credible, flexible, affordable and sustainable

SPACE UTILIZATION

Ensure your space is working up to its full potential

SUSTAINABILITY SOLUTIONS

Measure and improve environmental stewardship

Vocabulary for Facilities Benchmarking & Analysis

UNIVERSITY of ALASKA SOUTHEAST

Annual Stewardship

The annual investment needed to ensure buildings will properly perform and reach their useful life ***"Keep-Up Costs".***

Asset Reinvestment

The accumulation of repair and modernization needs and the definition of resource capacity to correct them ***"Catch-Up Costs"***

Operational Effectiveness

The effectiveness of the facilities operating budget, staffing, supervision, and energy management.

Service

The measure of service process, the maintenance quality of space and systems, and the customers opinion of service delivery.

Asset Value Change

Operations Success

University of Alaska – Southeast Peer Institutions

UNIVERSITY of ALASKA SOUTHEAST

Return on Physical Assets (ROPA+) includes all space at UAS totaling 564,796 GSF

Facilities Peer Institutions	Location
University of Maine at Fort Kent	Fort Kent, ME
University of Maine at Farmington	Farmington, ME
University of Maine at Machias	Machias, ME
University of Maine at Presque Isle	Presque Isle, ME
Slippery Rock University of PA	Slippery Rock, PA
Mansfield University of PA	Mansfield, PA
Lockhaven University of PA	Lock Haven, PA
University of Maine at Augusta	Augusta, ME

Comparative Considerations

Size, technical complexity, region, geographic location, and setting are all factors included in the selection of peer institutions

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Core Campus Observations

Space

UAS's space profile is different than peer institutions in several key areas:

- Younger, lower risk space than peers due to new construction and renovation, especially at Ketchikan campus
- Lower population density
- Higher Building and Grounds intensity
- Region – Alaska is unique from other states

Capital

- Investment focus on existing space has historically managed age and deferred maintenance need but has decreased in recent years 1
- The historically reliable one-time sources of capital that helped achieve funding targets have dropped in recent years

Operations

- Historically operated with a higher budget than peers, but decreased below peer levels in recent years
- Higher percentage of budget spent on PM than peers
- Staffing levels, supervision, and materials fluctuate across trades shops, but results are consistent and competitive

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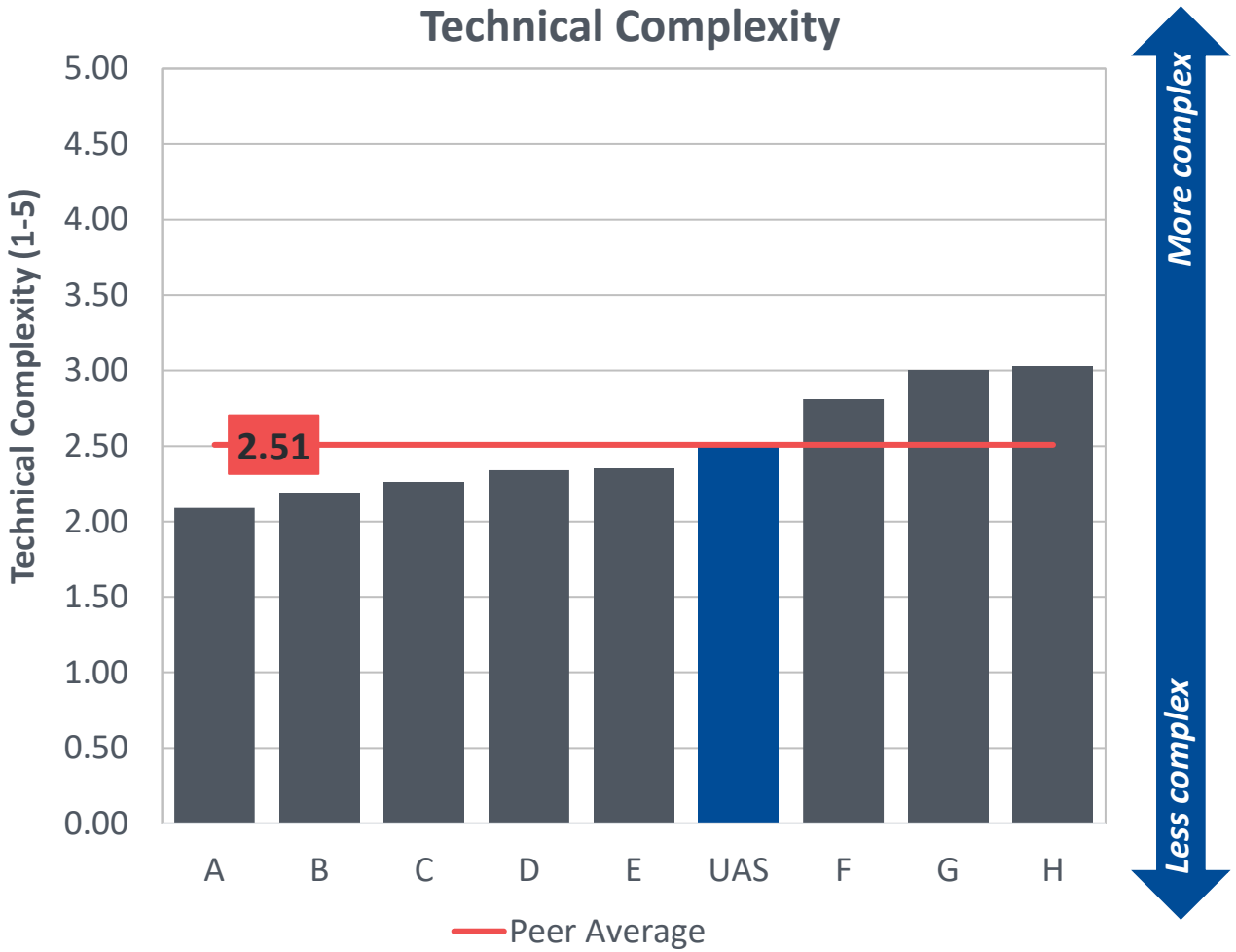
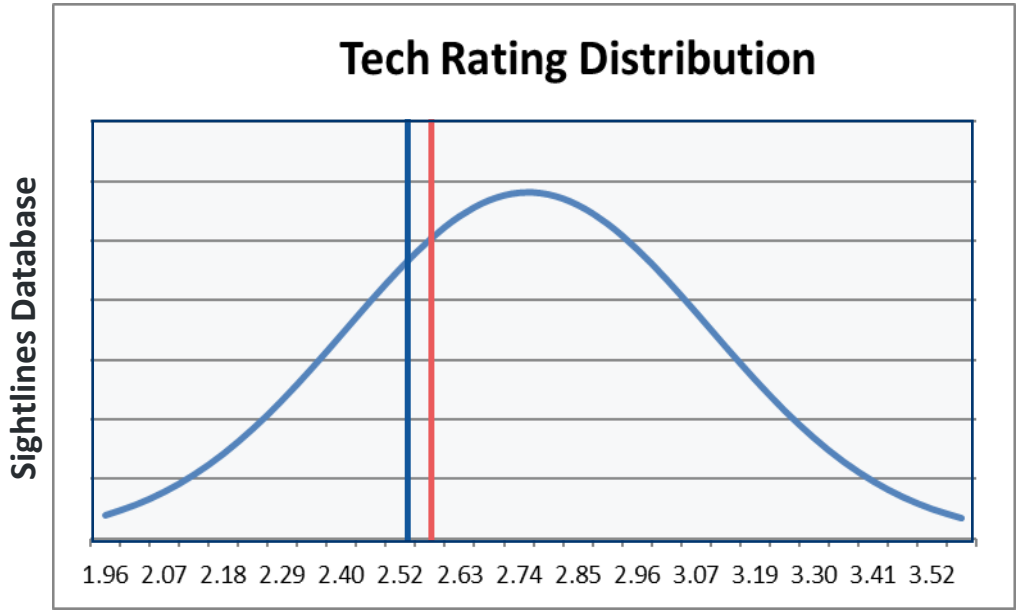
Space Profile

UAS's Technical Complexity is On-Par With Peers



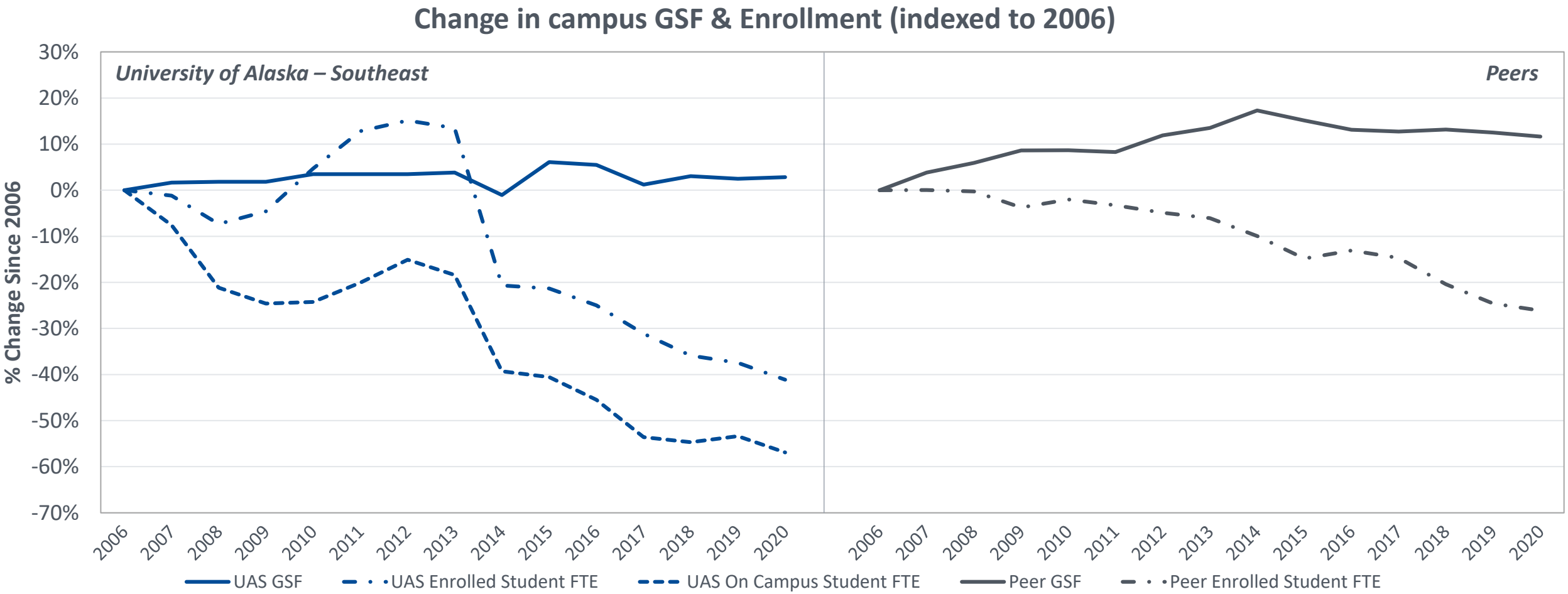
Areas Impacted by Tech Rating				
Energy Consumption	Maintenance Staffing	Replacement Values	Stewardship Targets	Operational Demand



Institutions arranged by Technical Complexity

UAS' Campus has Grown Similar to Peers in GSF

However, total enrollment has decreased nearly double compared to peers



UAS has a Lower Density Campus than Peers

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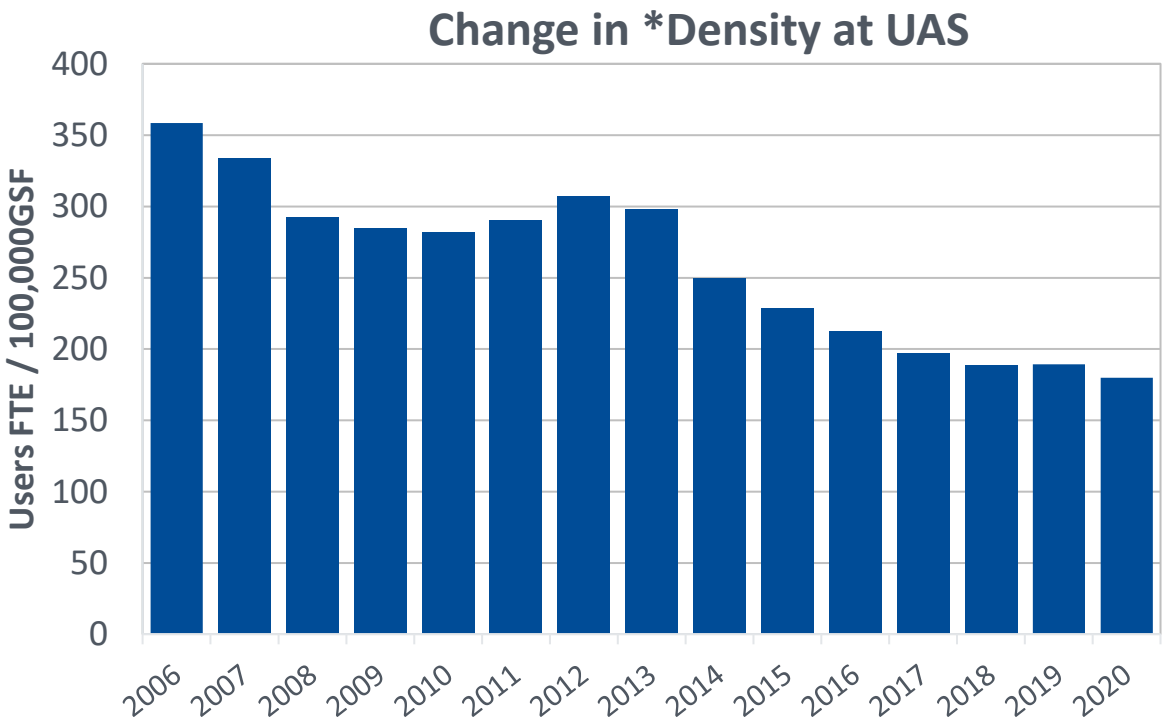
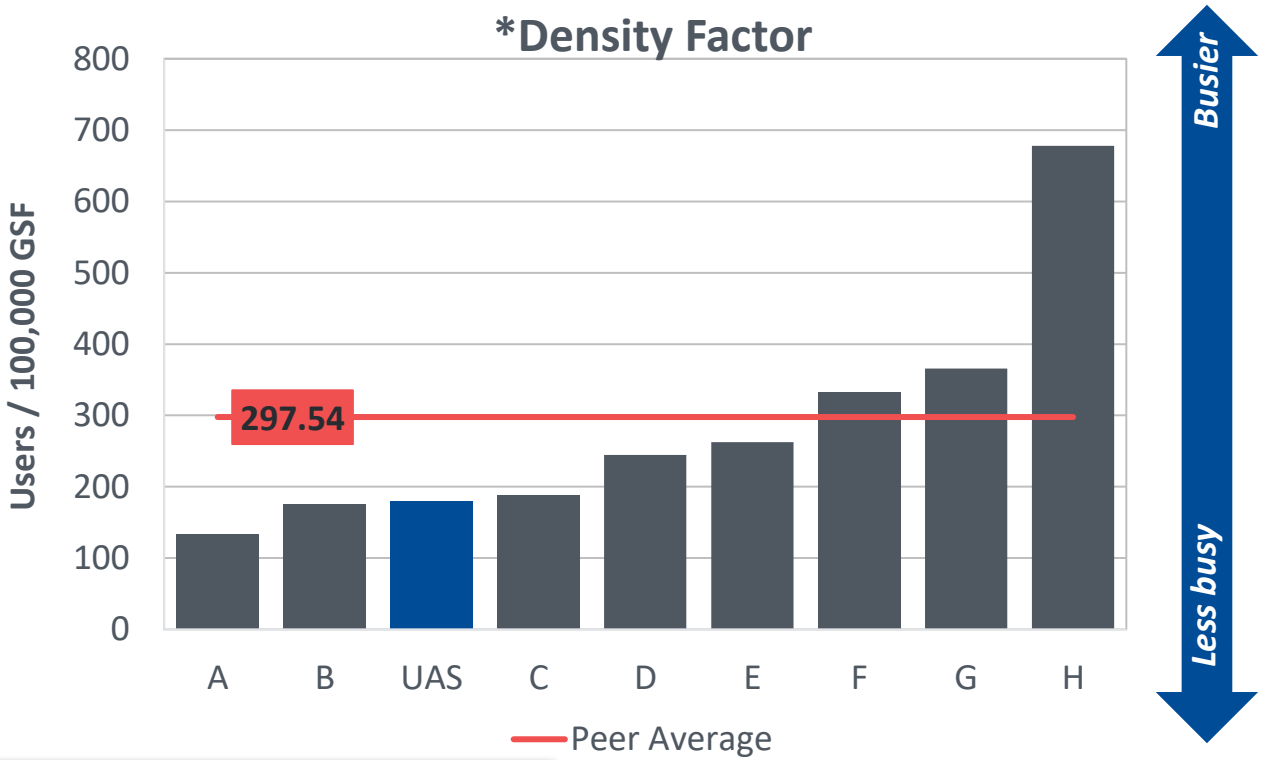
Density factor measures the busyness of campus





Areas Impacted by Density Factor		
Wear and Tear on Space	Custodial Operations	Energy Demand

**Density is calculated using On-Campus Student FTEs, Faculty FTE, and Staff FTE*

Institutions arranged by Density Factor

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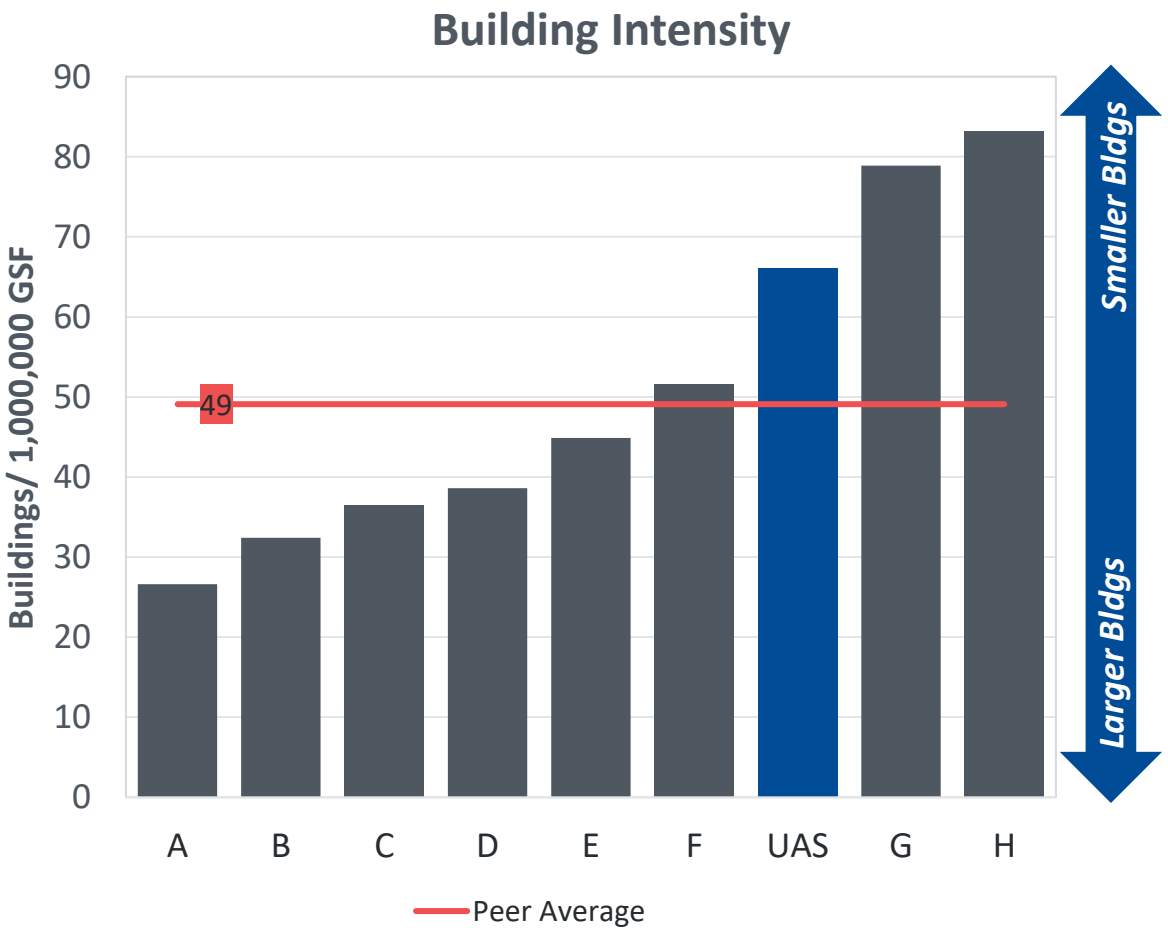
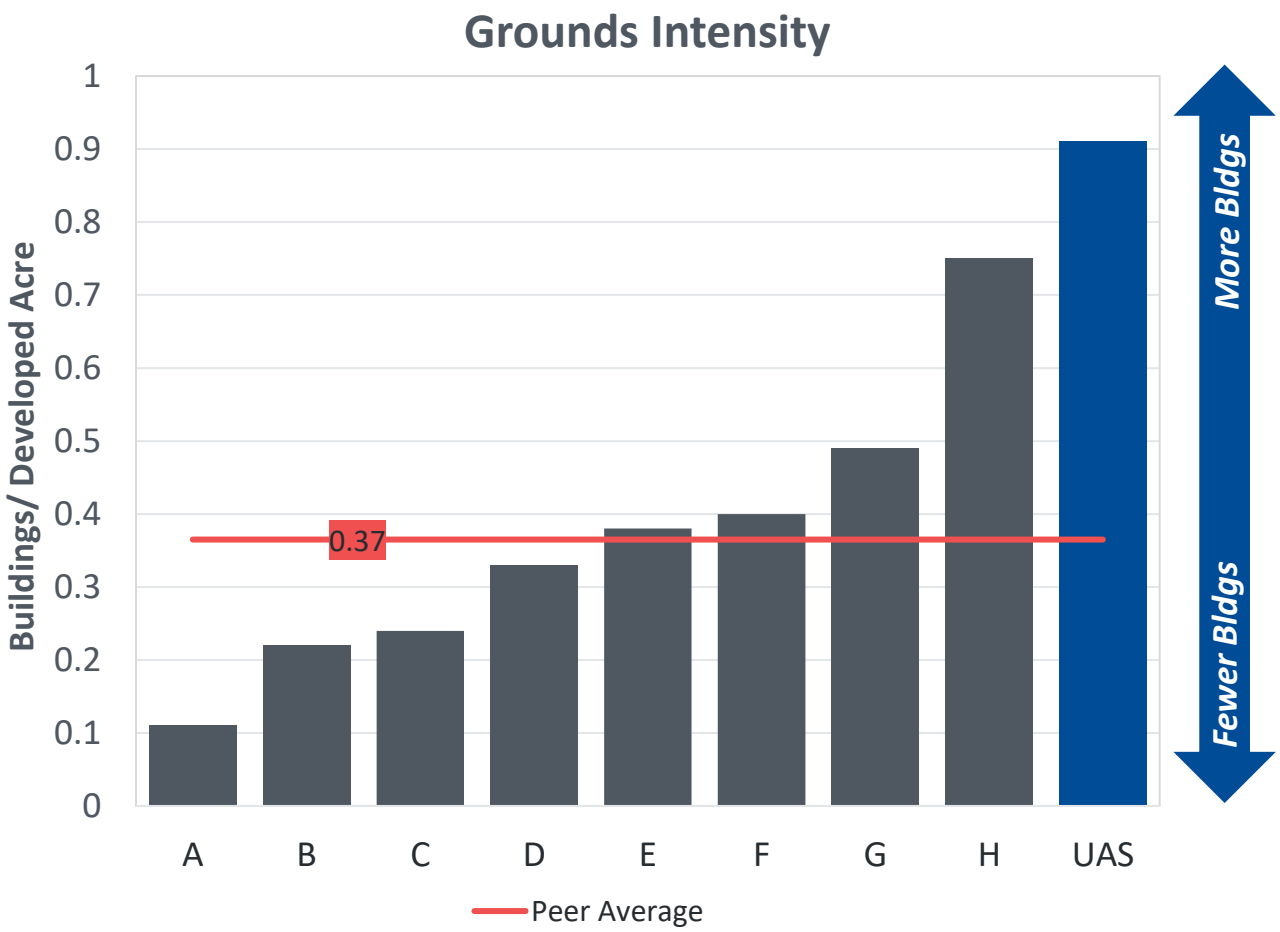
Building and Grounds Intensity

UAS' smaller buildings and compact grounds space produces challenges in efficiency for staff [1]





UAS Carries a Significantly Younger Campus Age

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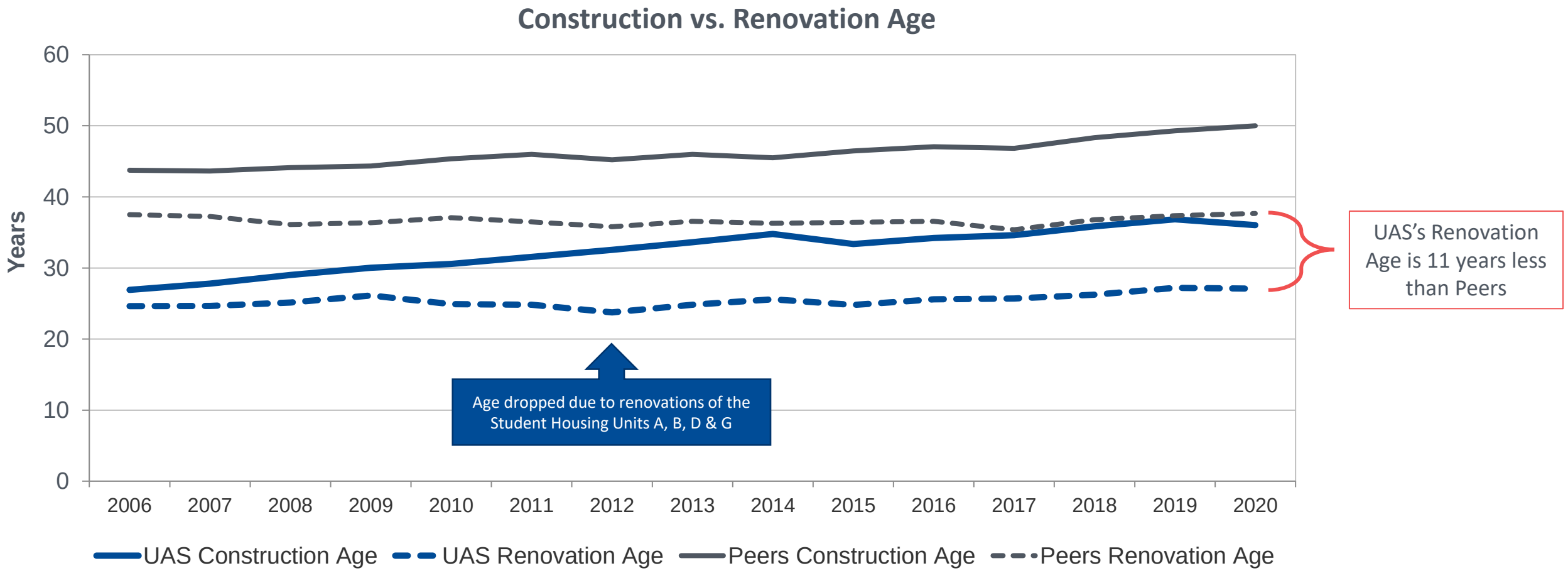
UAS has started renovating buildings which offsets aging



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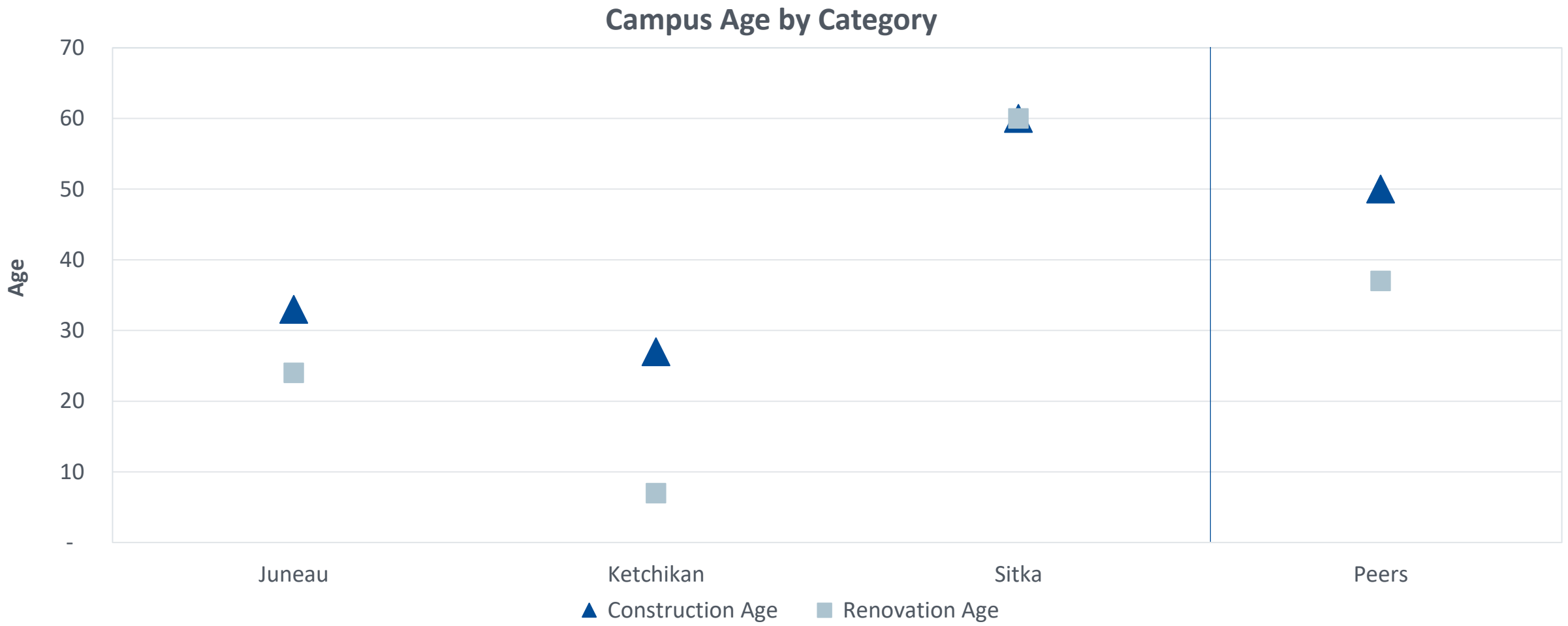
Ketchikan & Juneau are Younger through Renovations

These two campuses have firmly reduced their age through full building renovations



UAS Has More Low Risk Space Than Peers

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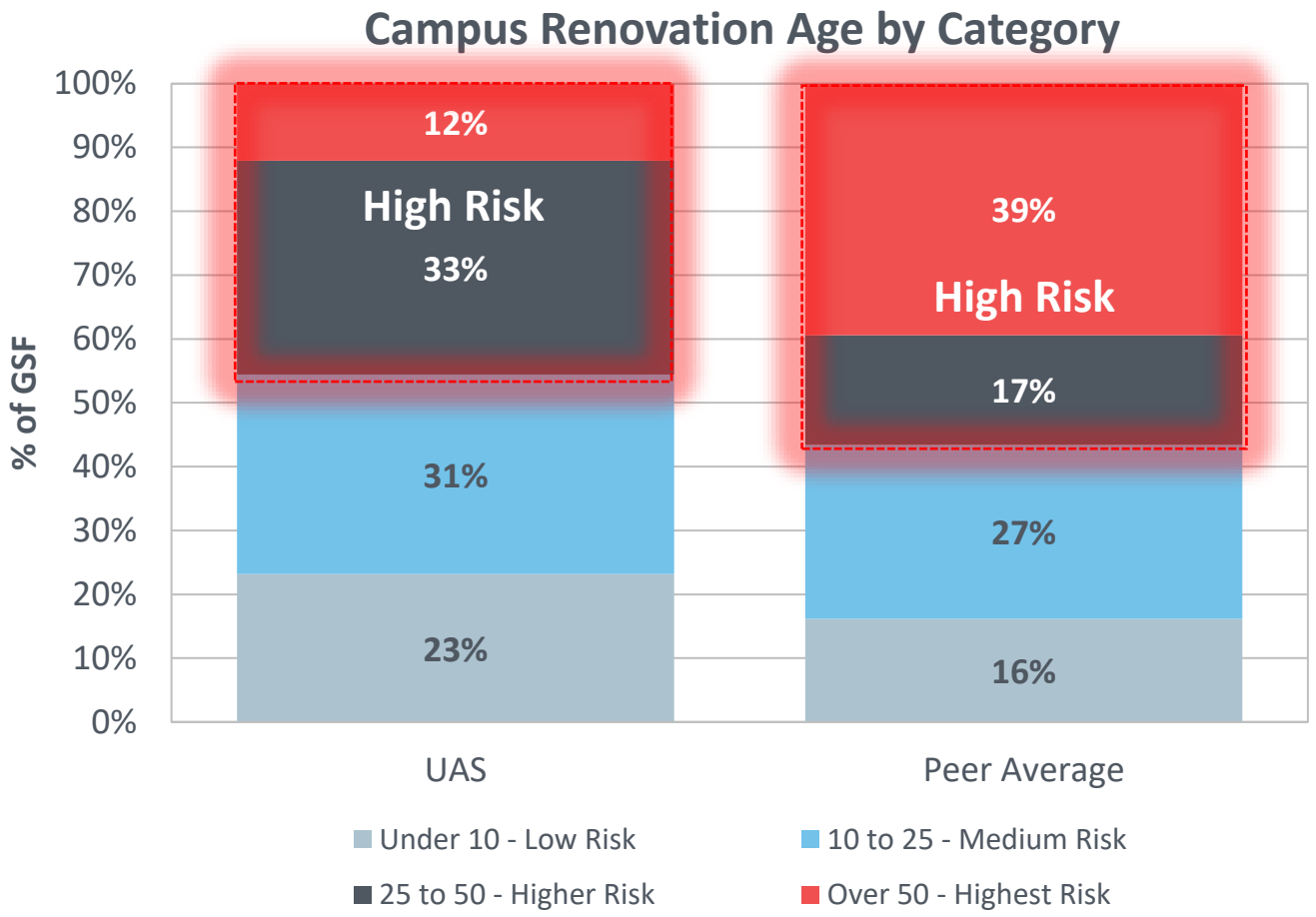
Lower risk affords the opportunity to plan ahead for future needs

1



	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		**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.

2

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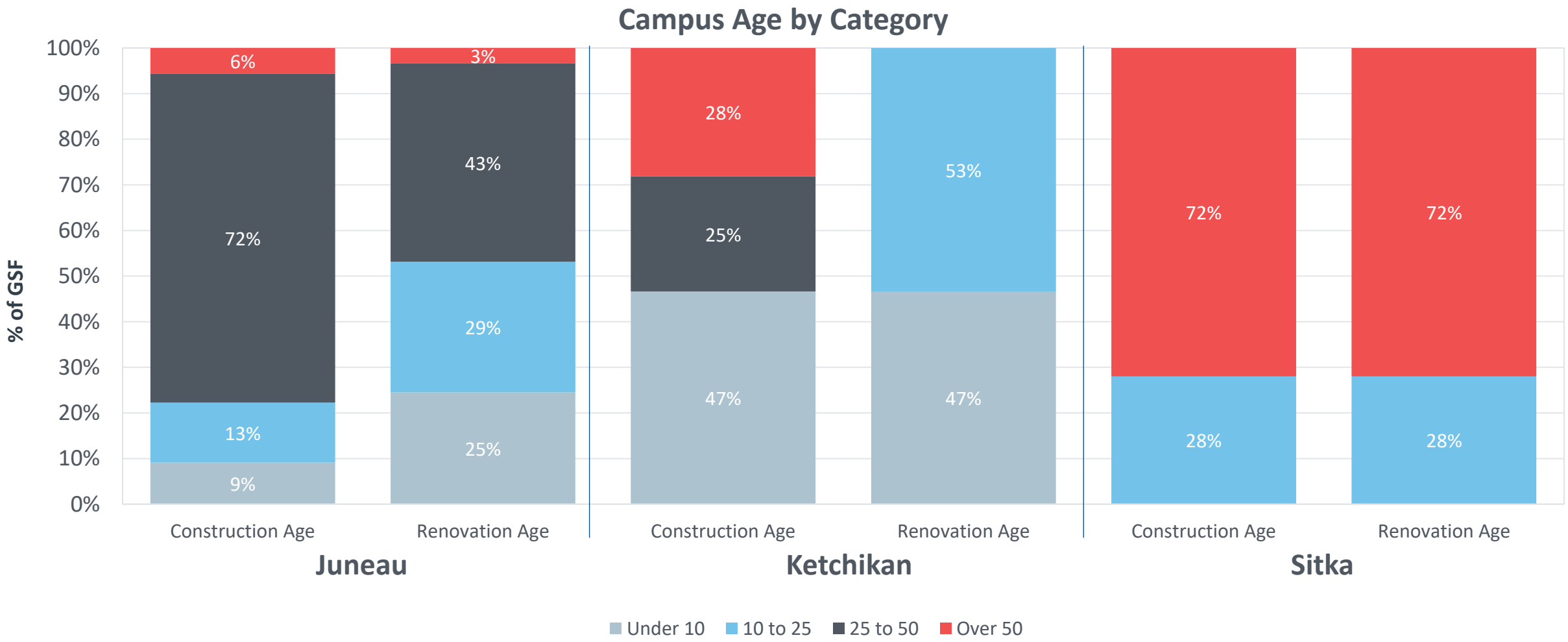
Understanding Campus Age

Renovations at Ketchikan make systems younger



Understanding the Impact of Age on Future Need

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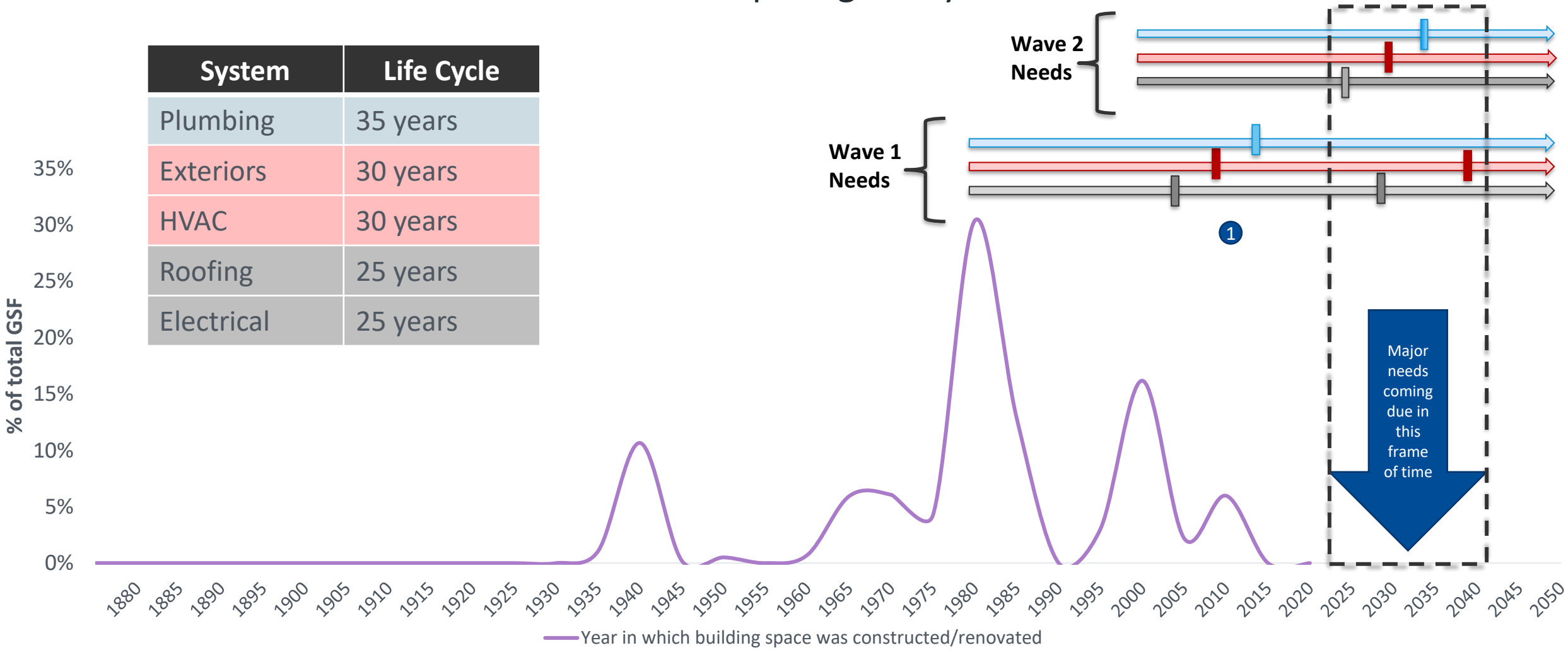
Different construction waves will have competing life cycle needs in the future

System	Life Cycle
Plumbing	35 years
Exteriors	30 years
HVAC	30 years
Roofing	25 years
Electrical	25 years



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Capital Profile

Capital Funding Sources

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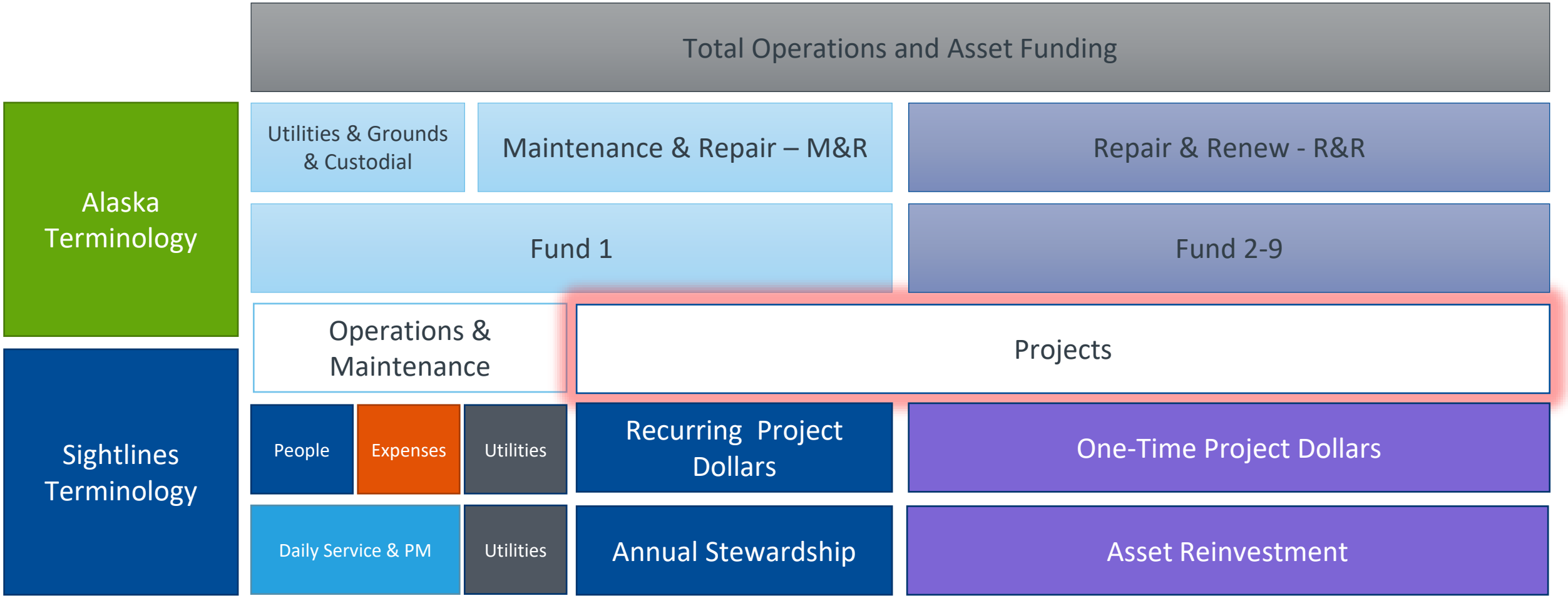

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Increased Focus on Existing Space in Recent Years

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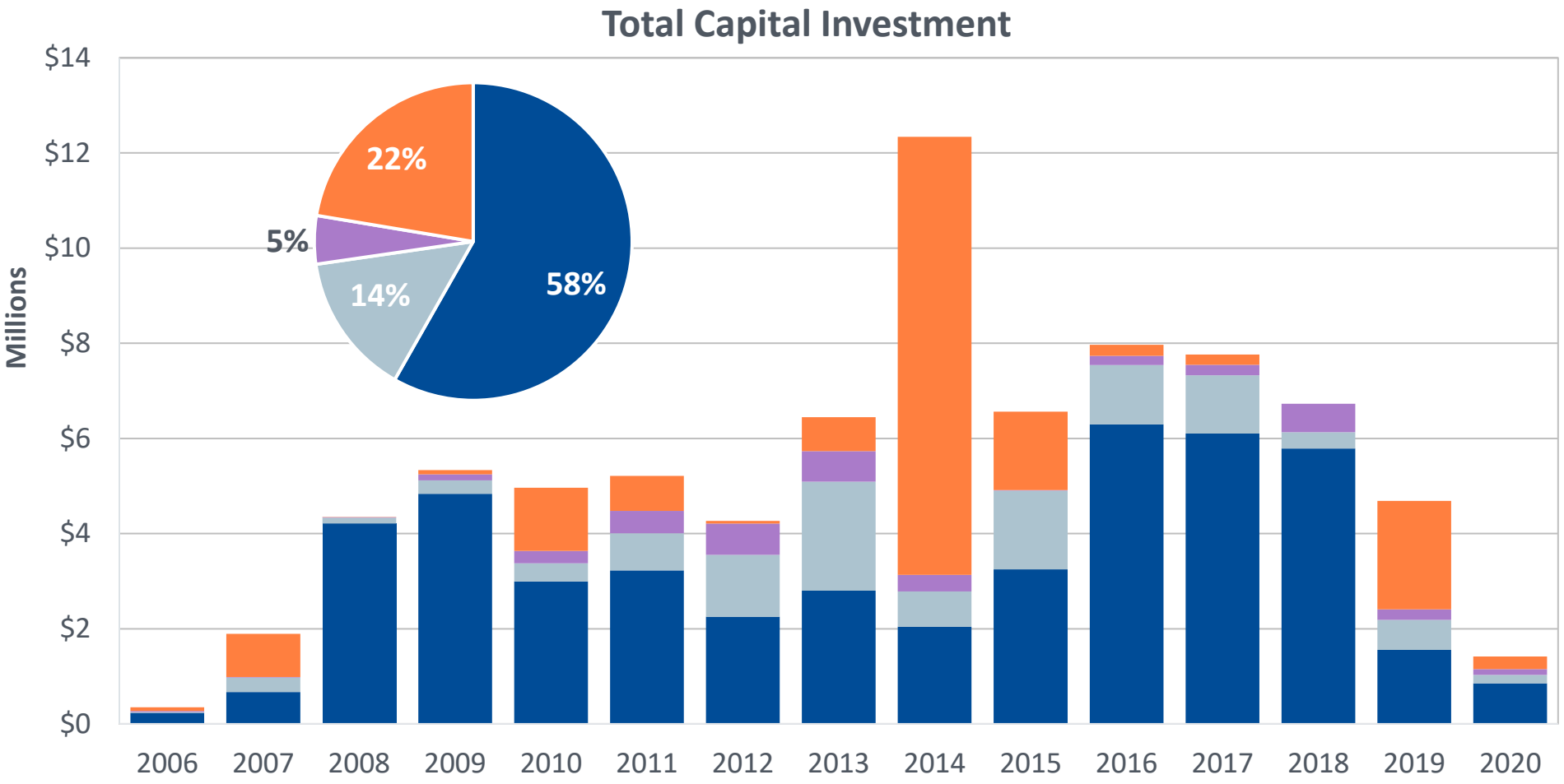
Existing Space investment decreased in recent years, but has seen high investment



Existing Space

- Exterior Doors
- Windows
- Pointing
- Roofs
- Insulation
- Gutters
- Mechanical Systems
- HVAC Projects
- Electrical Systems
- Carpeting
- Painting
- Replacement of Light Fixtures
- Furniture Replacement
- Room reconfiguration
- ADA Work
- Fire/Sprinkler Systems
- Asbestos Removal

Infrastructure

- Utility: Work Done on Central Utility Plants
- Utility: Underground Piping
- Grounds: Sidewalks
- Grounds: Parking Lots
- Grounds: Signage
- Grounds: Grass and Turf Fields

Non-Facilities

- Master Plans
- Feasibility Studies
- IT
- Equipment Purchases

New Space

- Any addition of GSF (new construction, additions to existing buildings)

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Defining an Annual Investment Target

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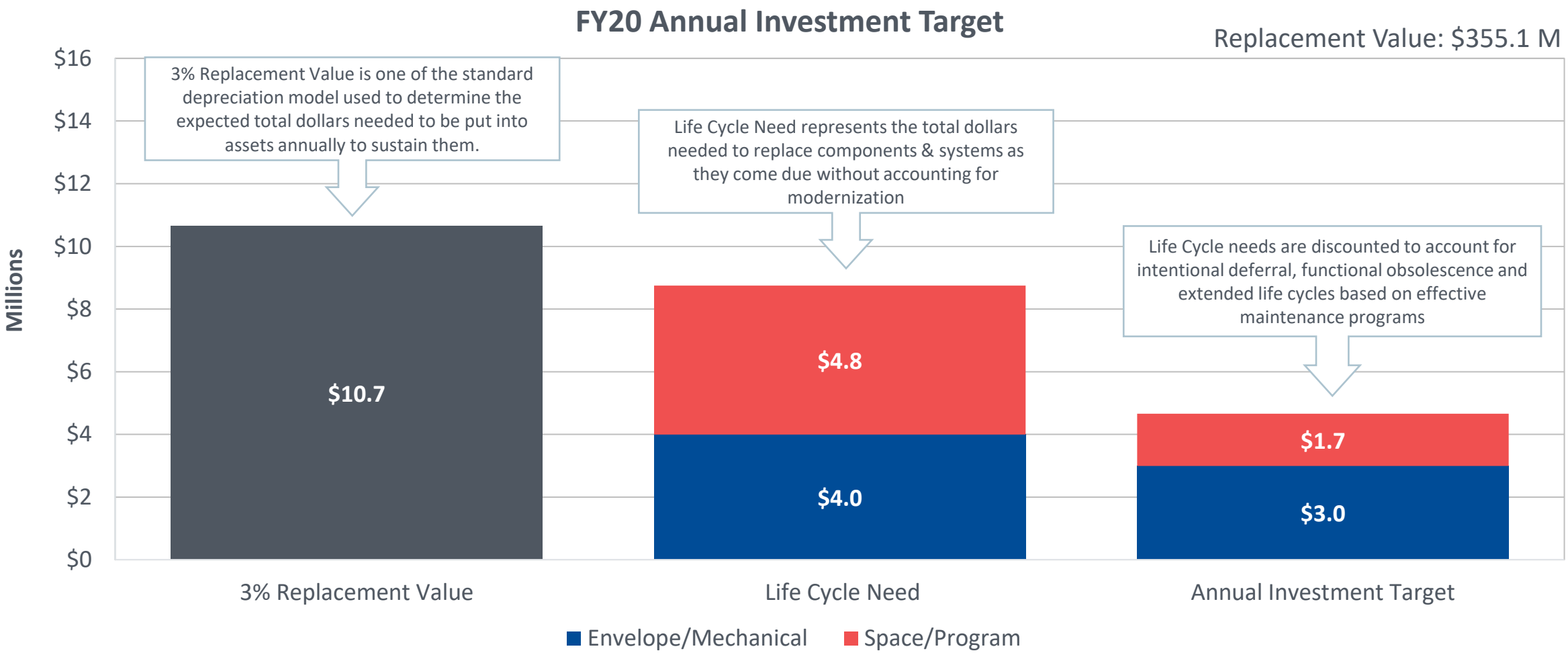
Annual Funding Target: $4.7M



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Recurring Capital Spending Falls Short of Target

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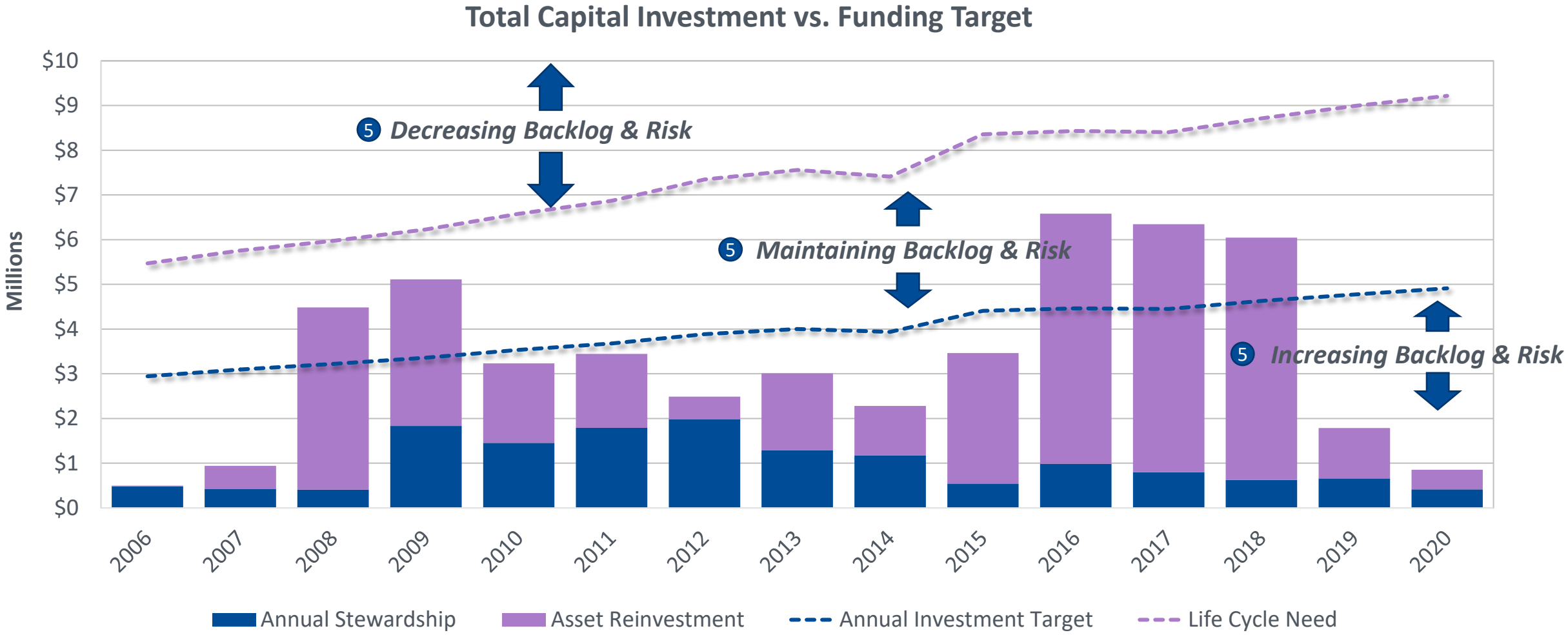
In FY19 and FY20 UAS increased its backlog

1 - 4



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Fund 1 Projects: Annual Stewardship
Funds 2-9 Projects : Asset Reinvestment

Juneau Capital Spending Sets the Trend

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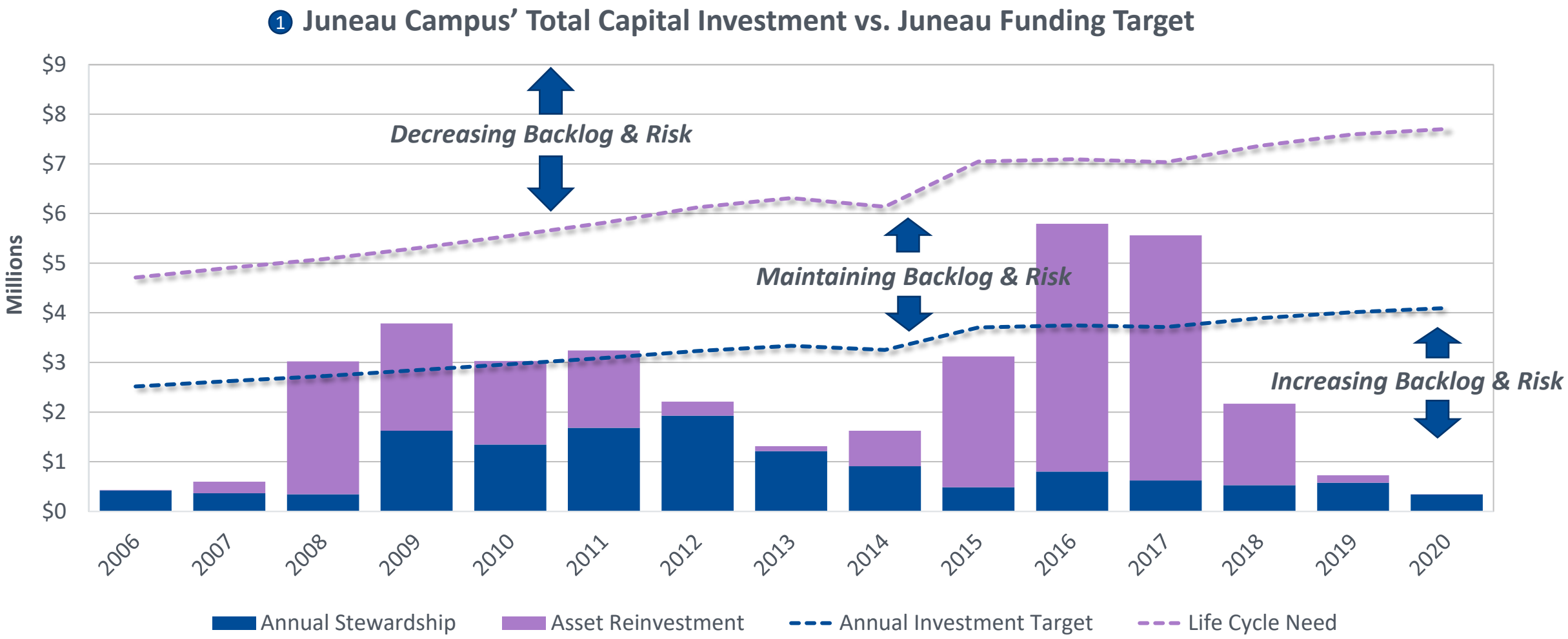
Unlike the combined spending trend, Juneau's trend begins to decrease in FY18



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Fund 1 Projects: Annual Stewardship
Funds 2-9 Projects : Asset Reinvestment

Ketchikan Capital Spending Frequently Meets Target

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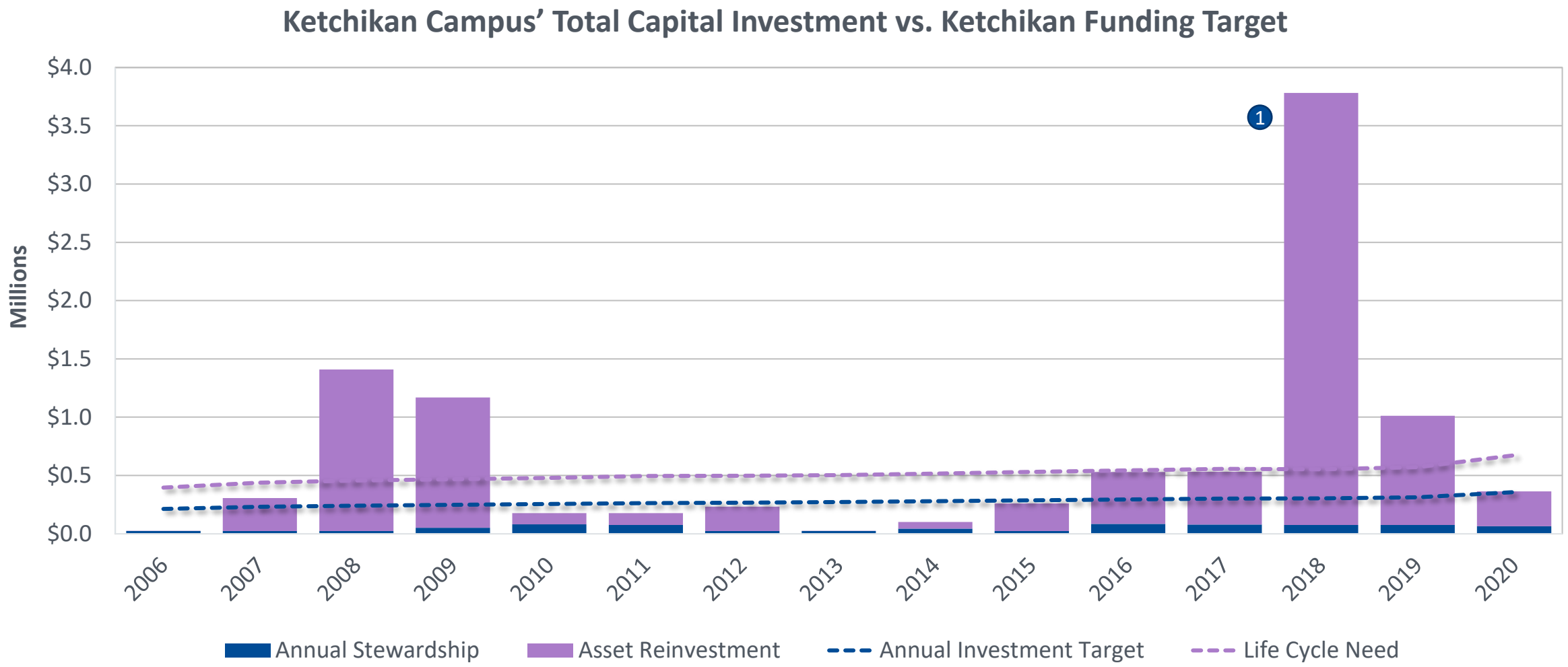
In FY18, Ketchikan spent $3.7 Million into the Maritime Center



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Fund 1 Projects: Annual Stewardship
Funds 2-9 Projects : Asset Reinvestment

Sitka's Lower Capital Spending Increases Backlog and Risk

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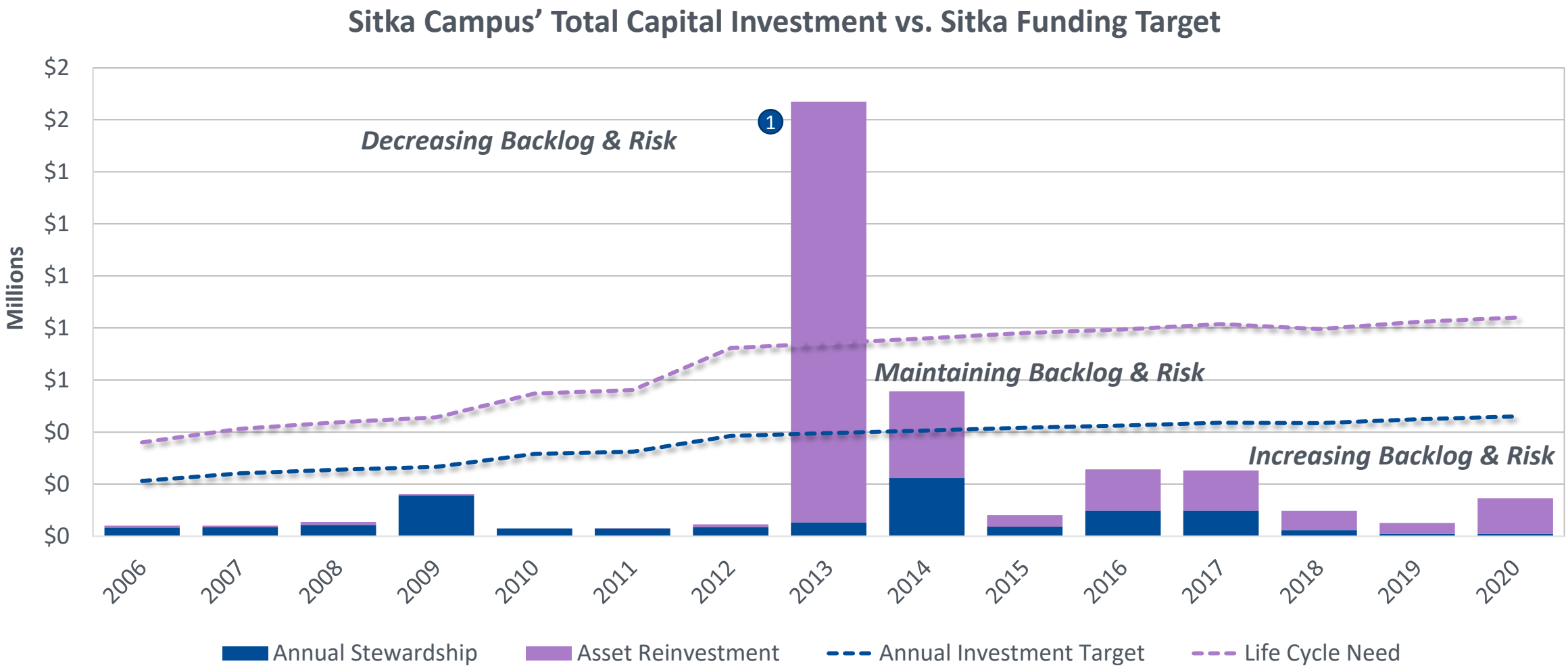
In FY13 $1.6 Million went into Campus Completion



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Fund 1 Projects: Annual Stewardship
Funds 2-9 Projects : Asset Reinvestment

Historic Annual Stewardship Higher at UAS

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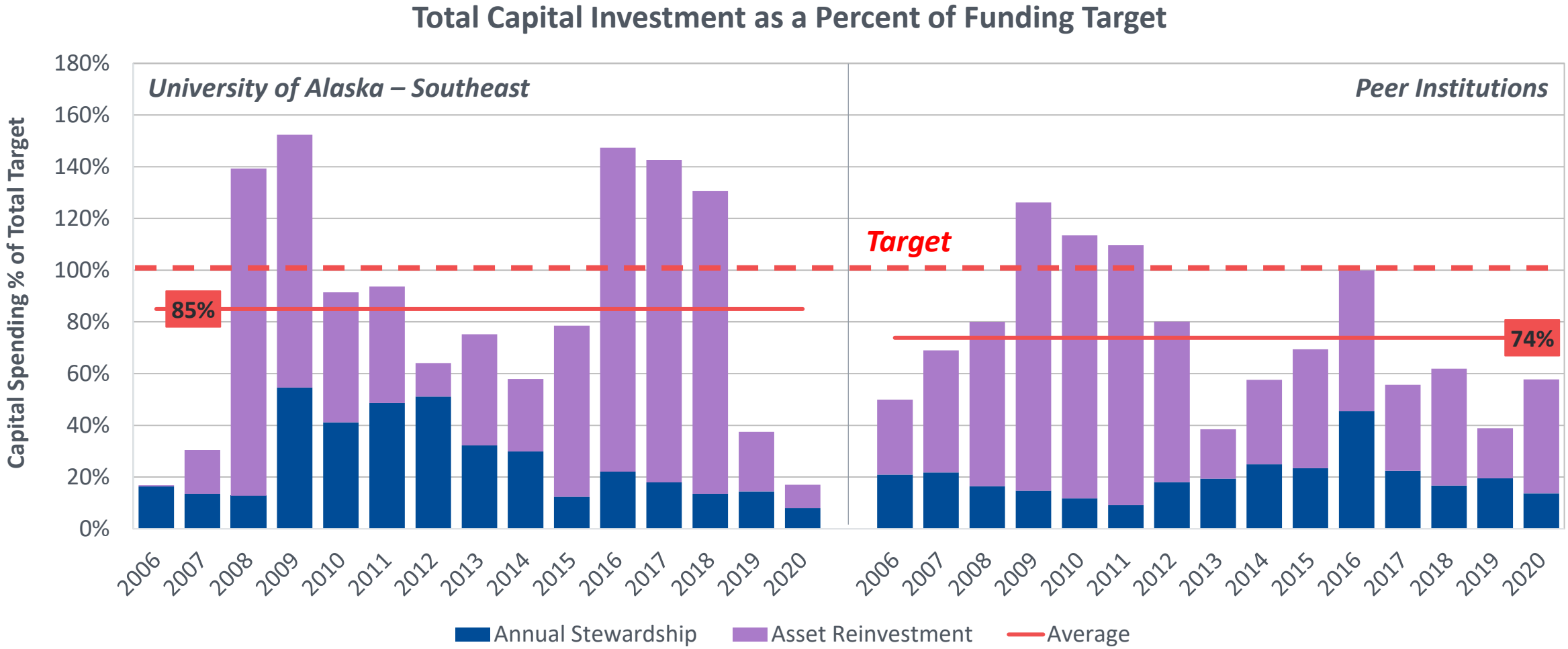
Asset reinvestment, or one-time, sources of funding close the gap to reach capital targets

1 - 2



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Fund 1 Projects: Annual Stewardship
Funds 2-9 Projects : Asset Reinvestment

Disparity In Reaching Targets Across Campuses

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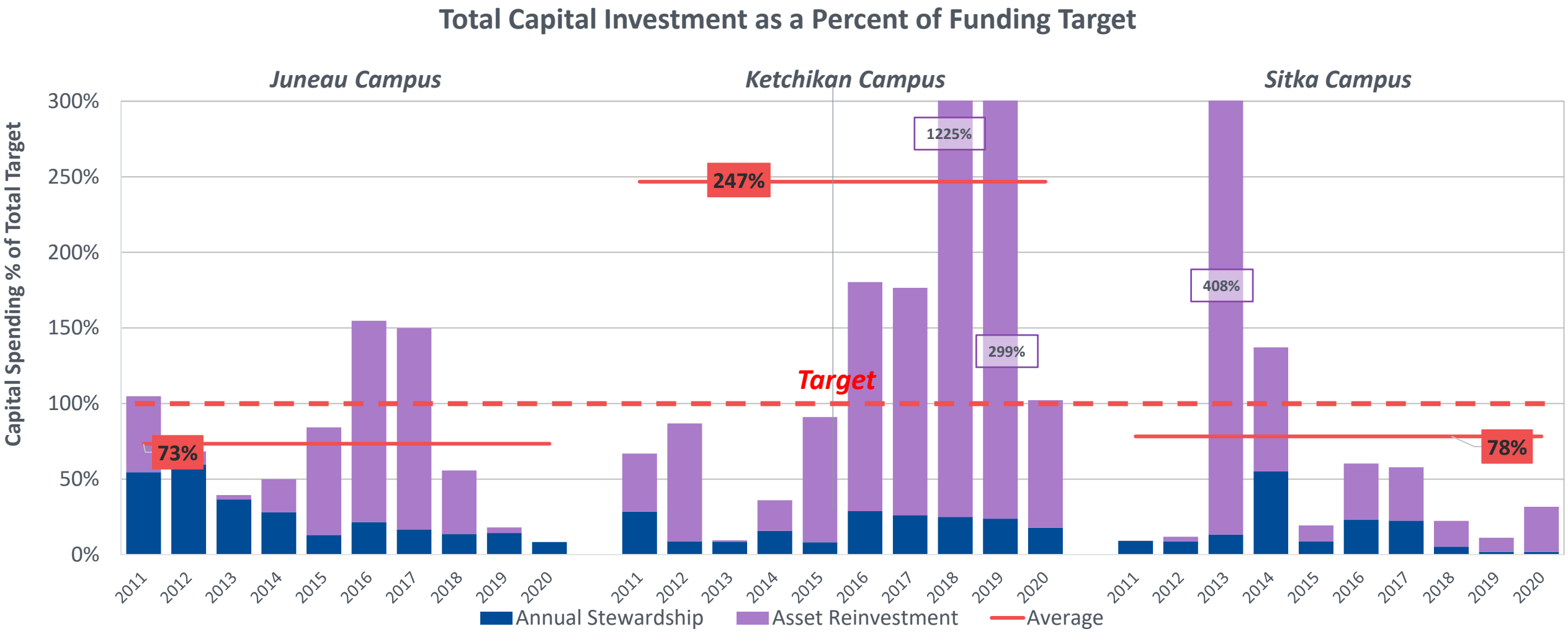
Juneau is lowest on average but is the most consistent



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Fund 1 Projects: Annual Stewardship
Funds 2-9 Projects : Asset Reinvestment

Total Need is Greater than Peers

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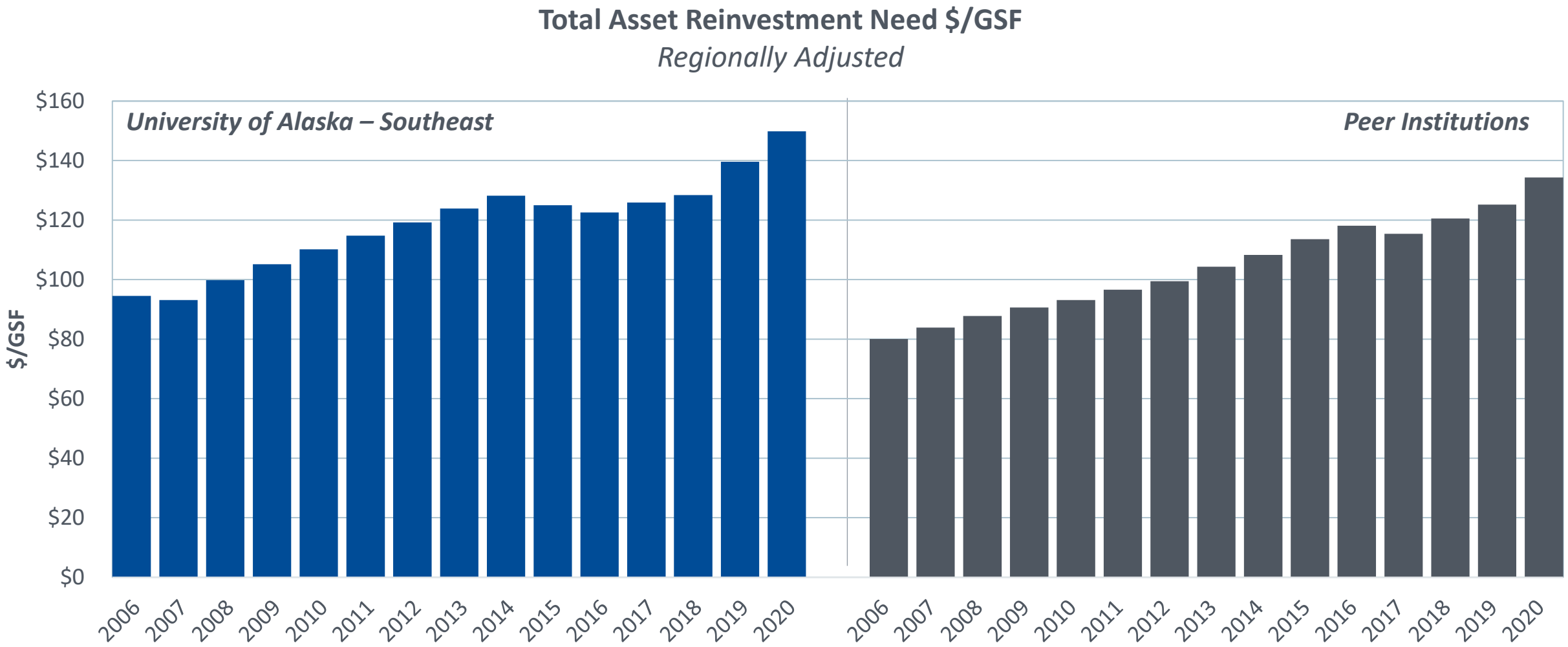
Total need based on ROPA+ Asset Reinvestment



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Operations Success

Capital Funding Sources

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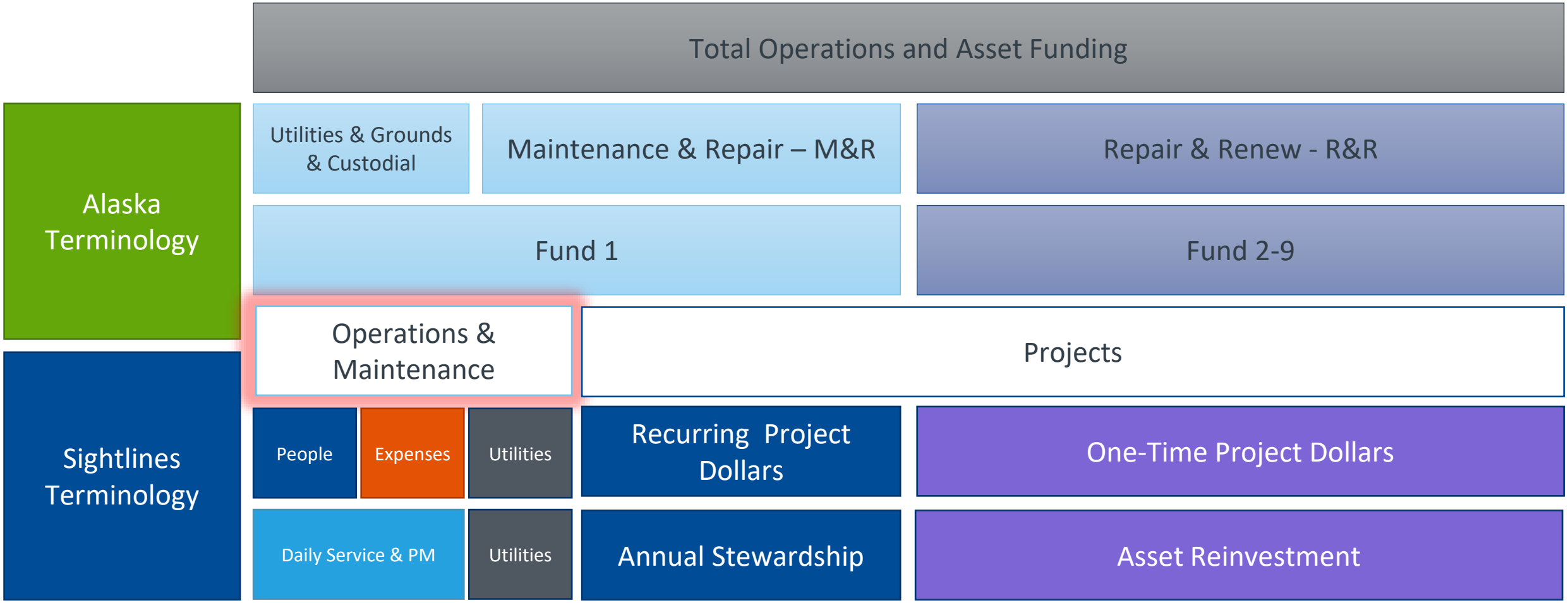
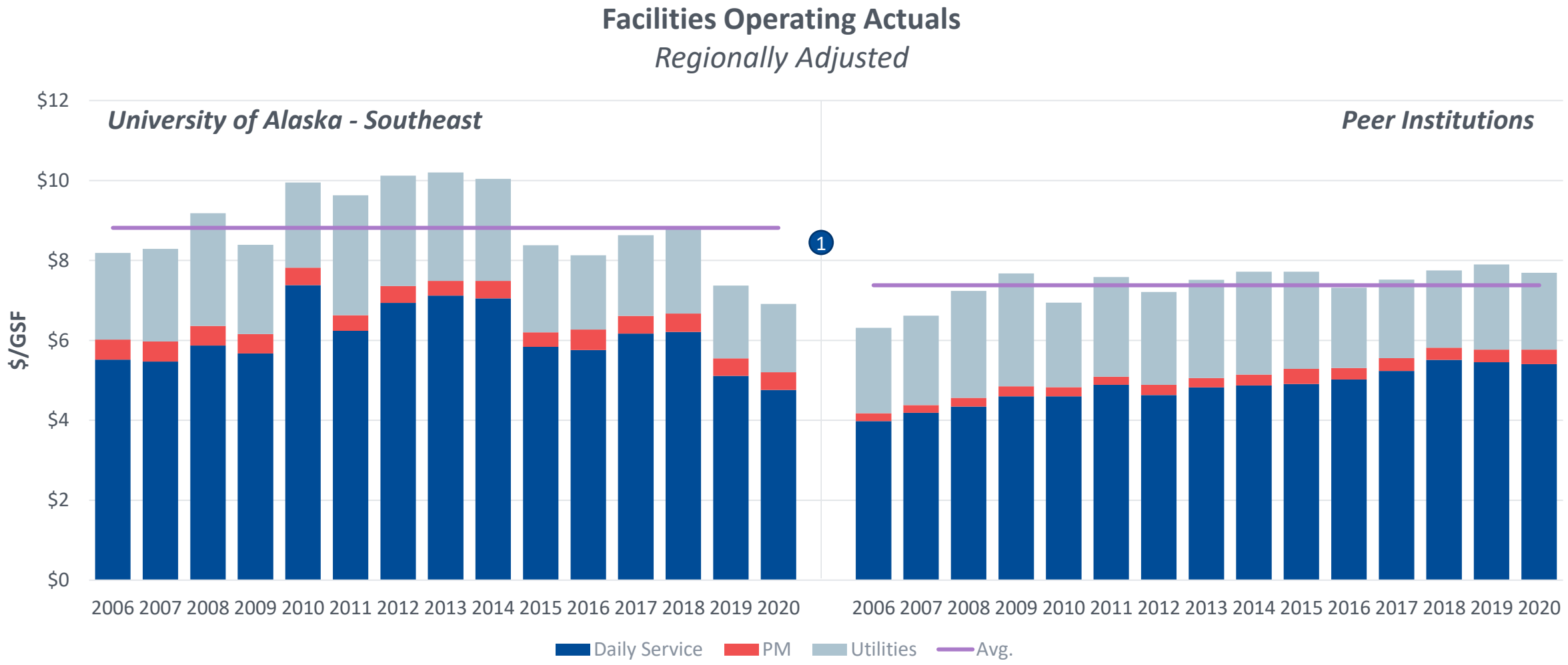


Facilities Operating Expenditures vs. Peers

UAS has reduced its Daily Service expenditures in recent years



Budget Cuts Limit Purchasing Power

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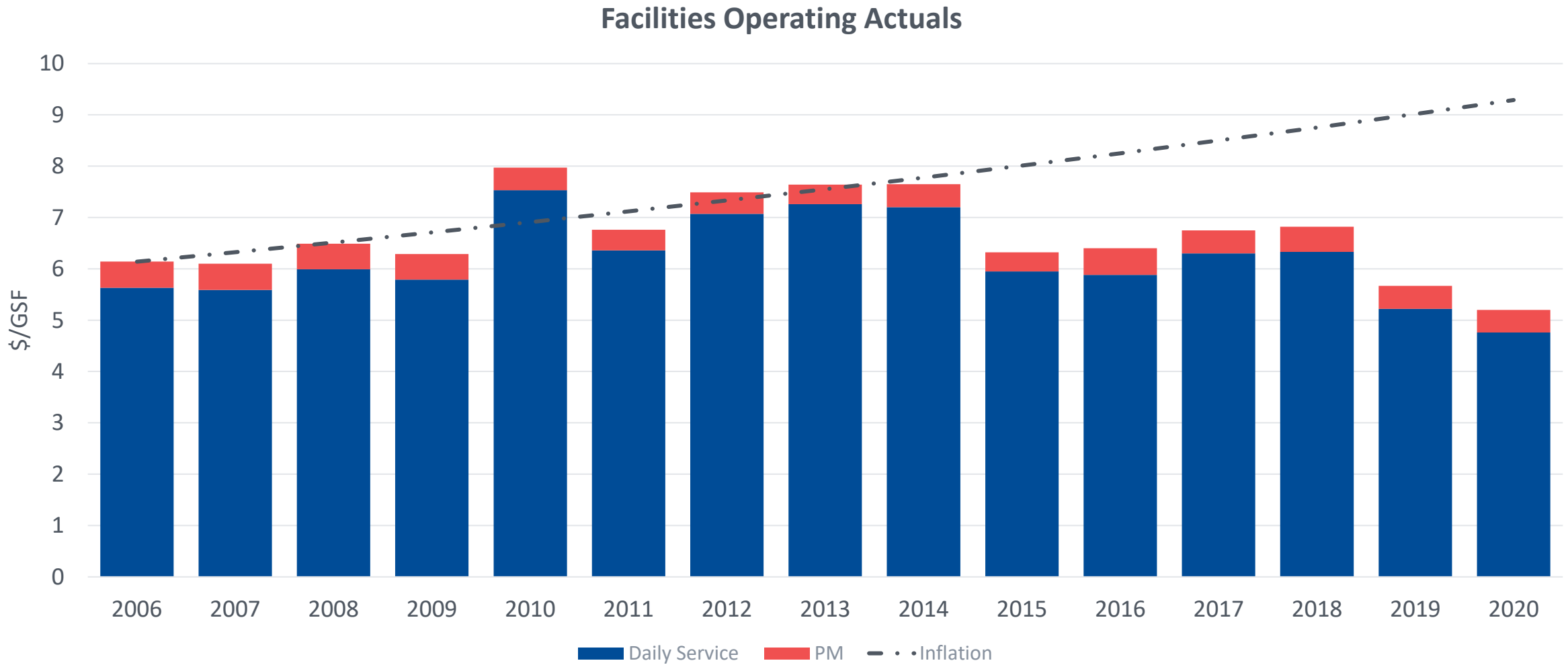
2020 difference amounts to $2.1M less buying power than 2006 budget



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Juneau's Decreasing Budget Follows University Trend

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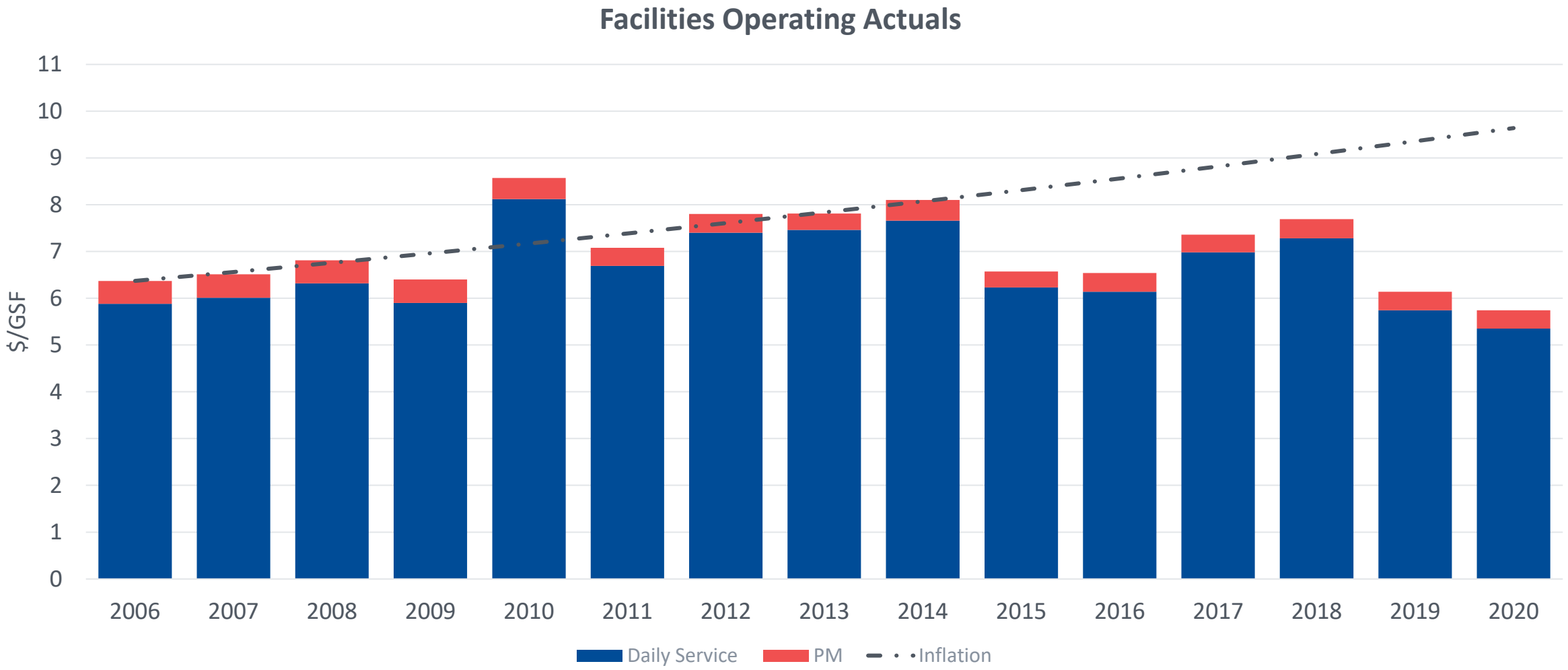
2020 difference amounts to $1.5M less buying power than 2006 budget



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Ketchikan Budget Emphasizes PM in Recent Years

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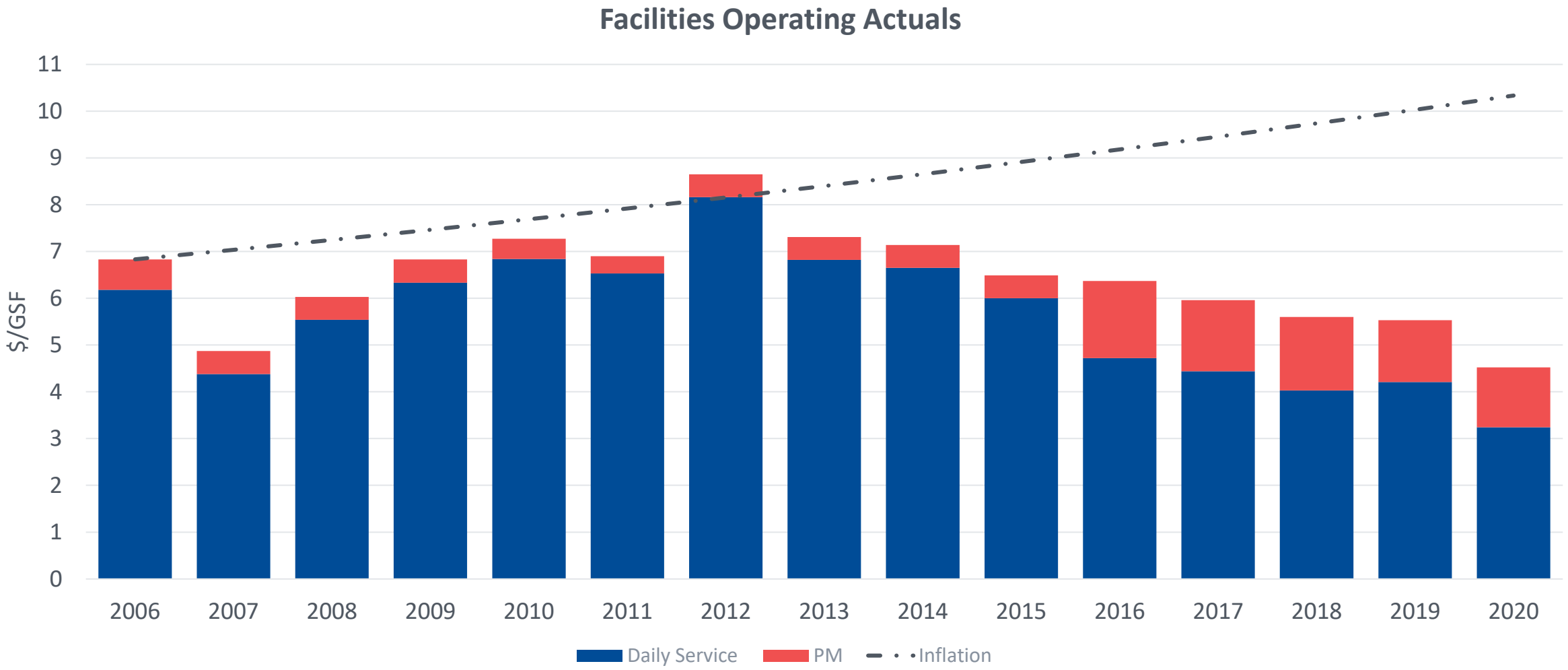
Investments into PM will extend building lifecycles and decrease capital need



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Sitka's Recent Budget Lacks Purchasing Power of Past Years

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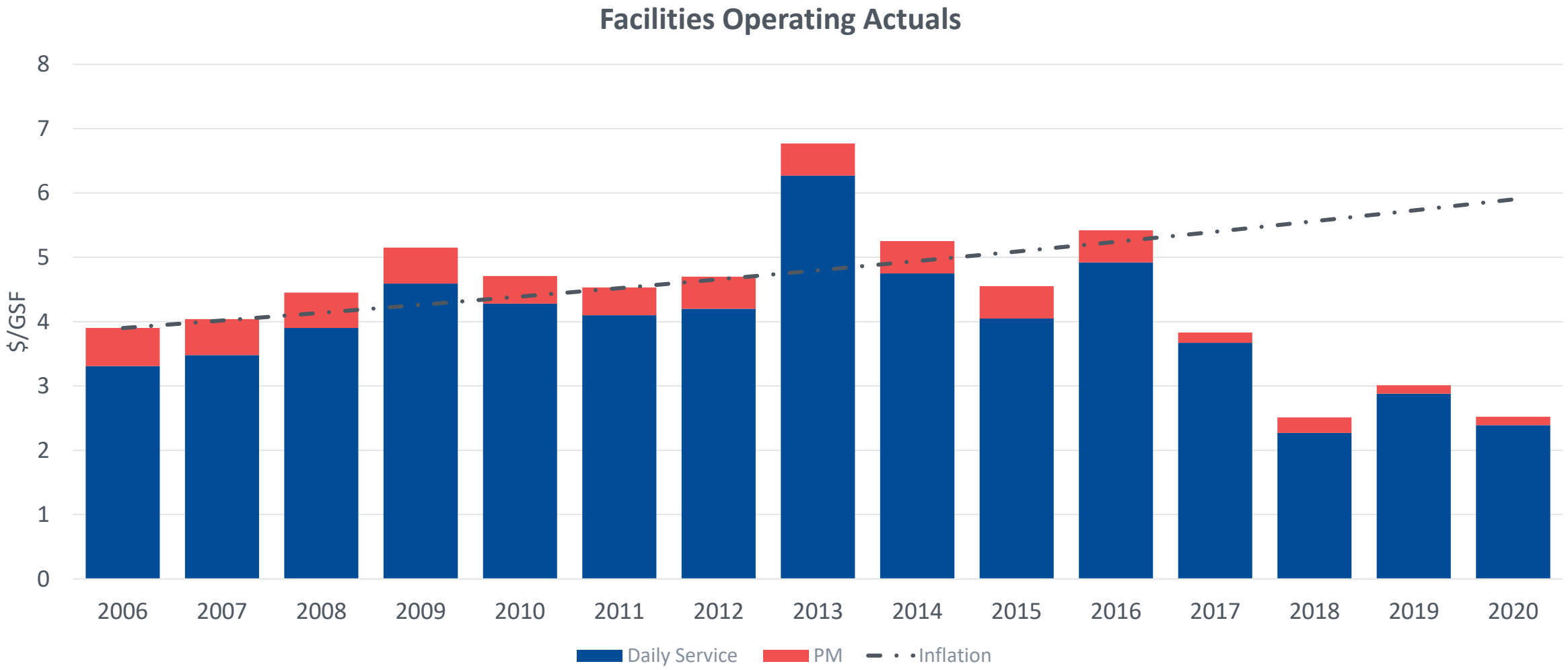
Sitka's operational spending decreased 57% since 2006, accounting for inflation



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Facilities Operating Expenditures vs. Peers

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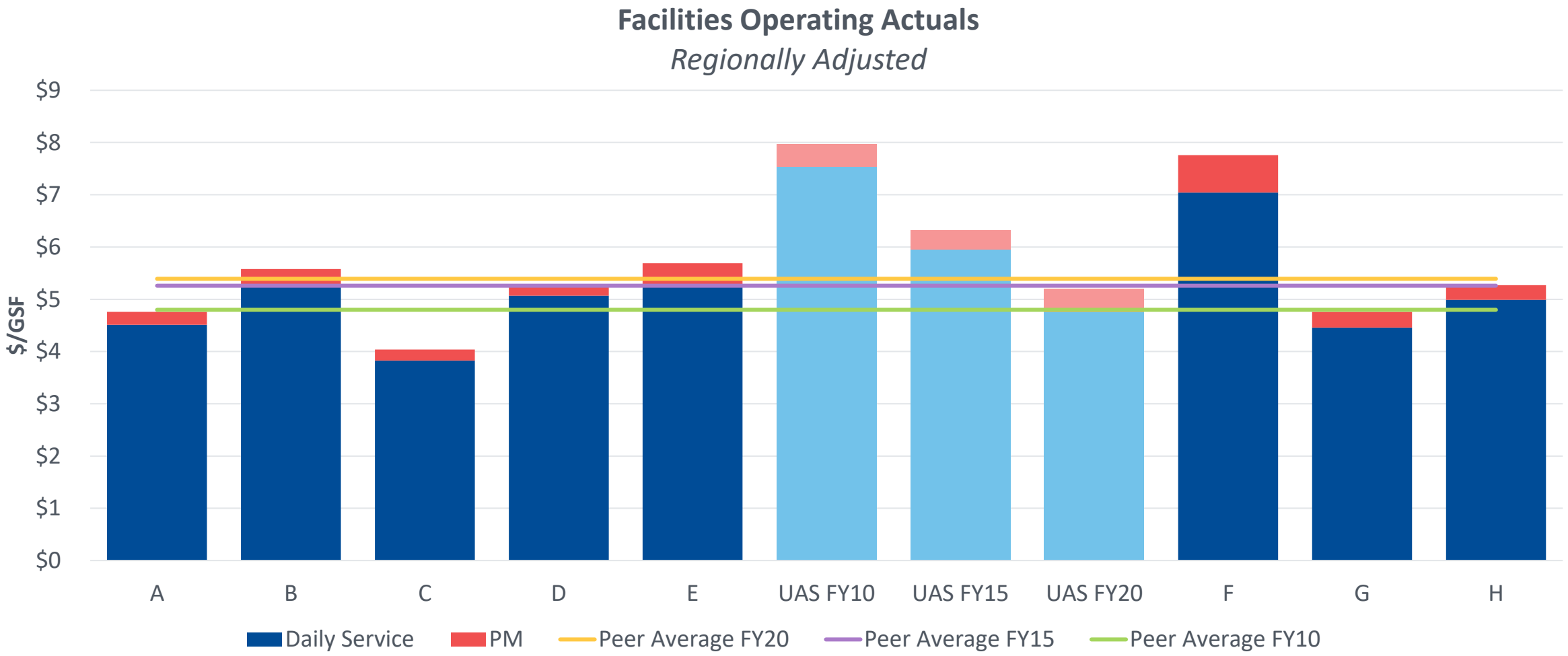
UAS has decreased its daily service expenditures since FY10 and increased PM



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UAS Allocates Resources to PM in Line with Peers

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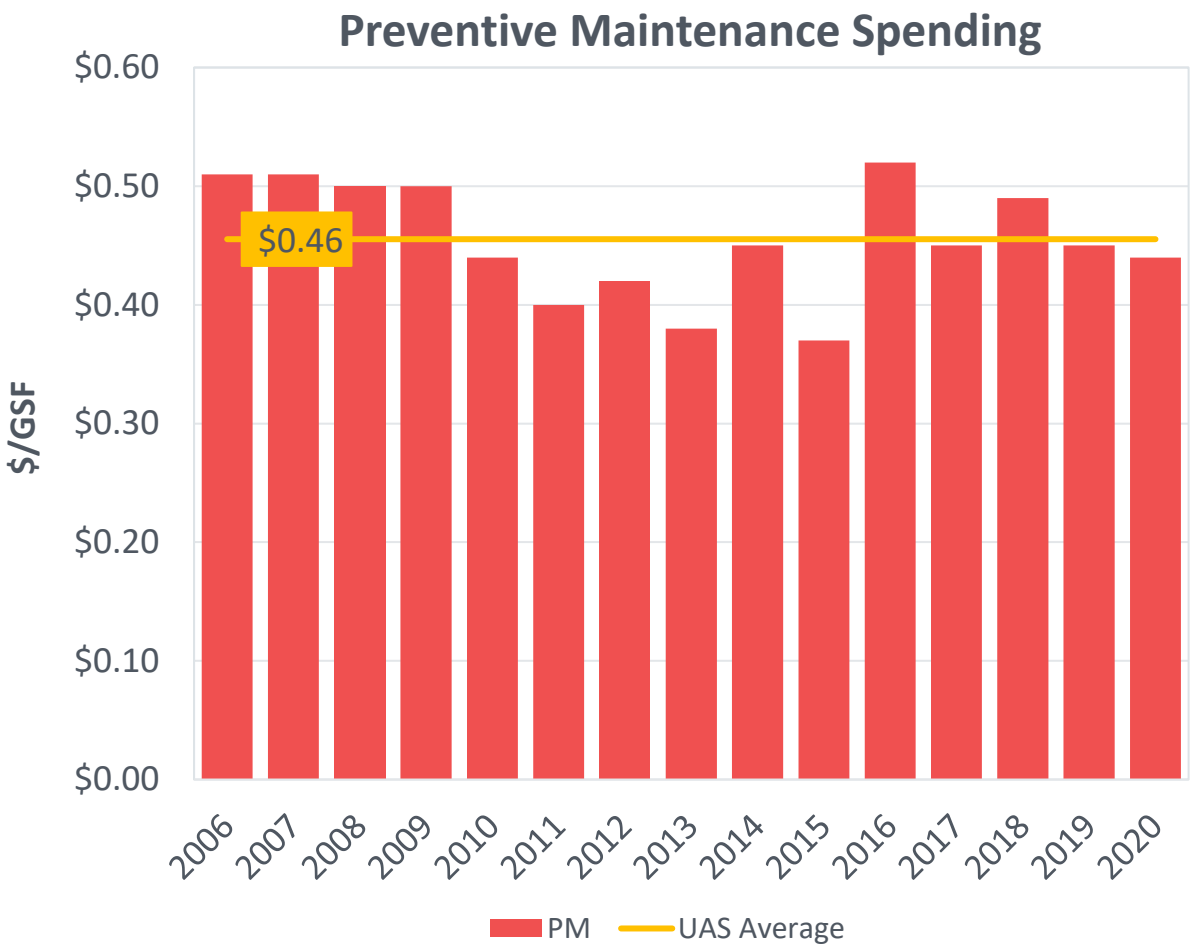
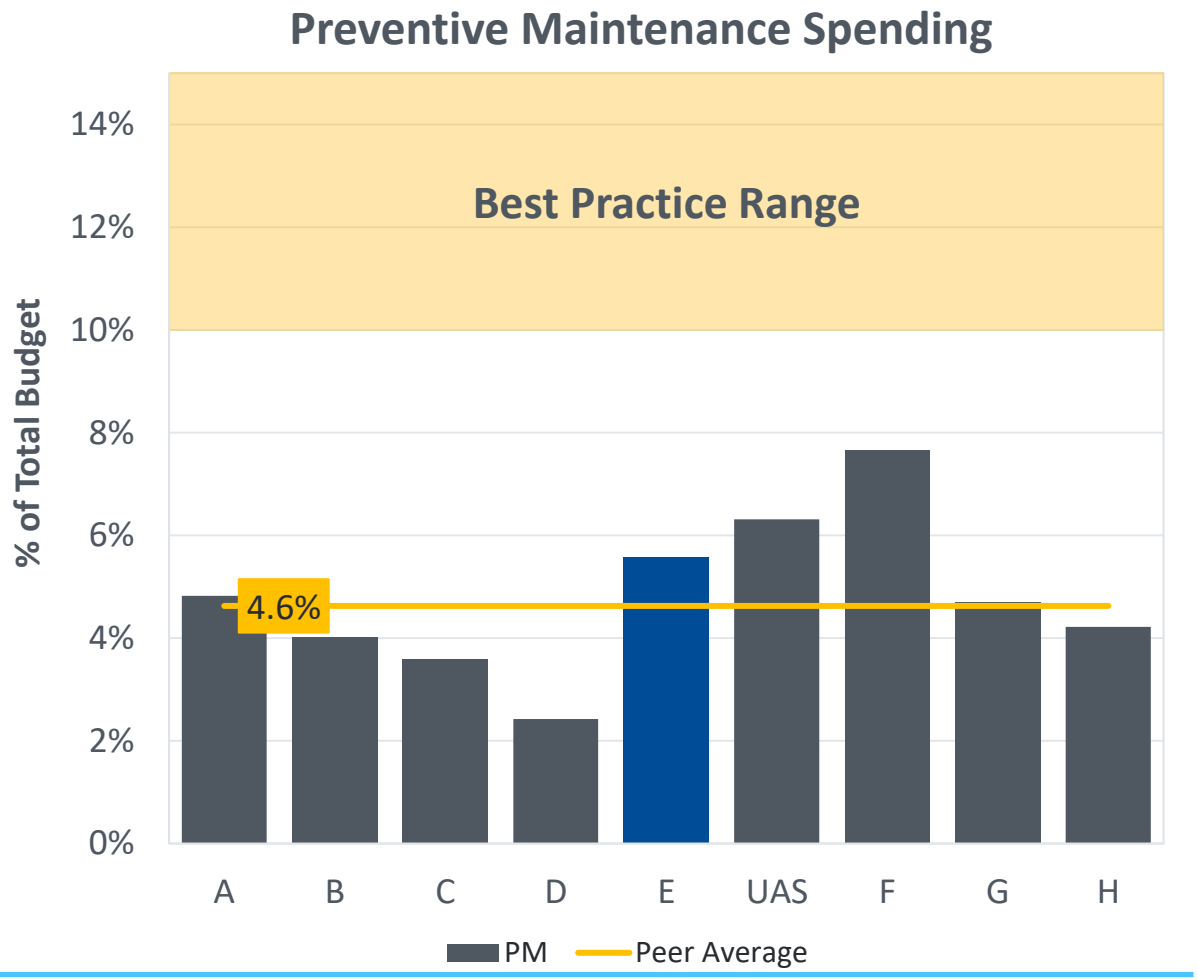
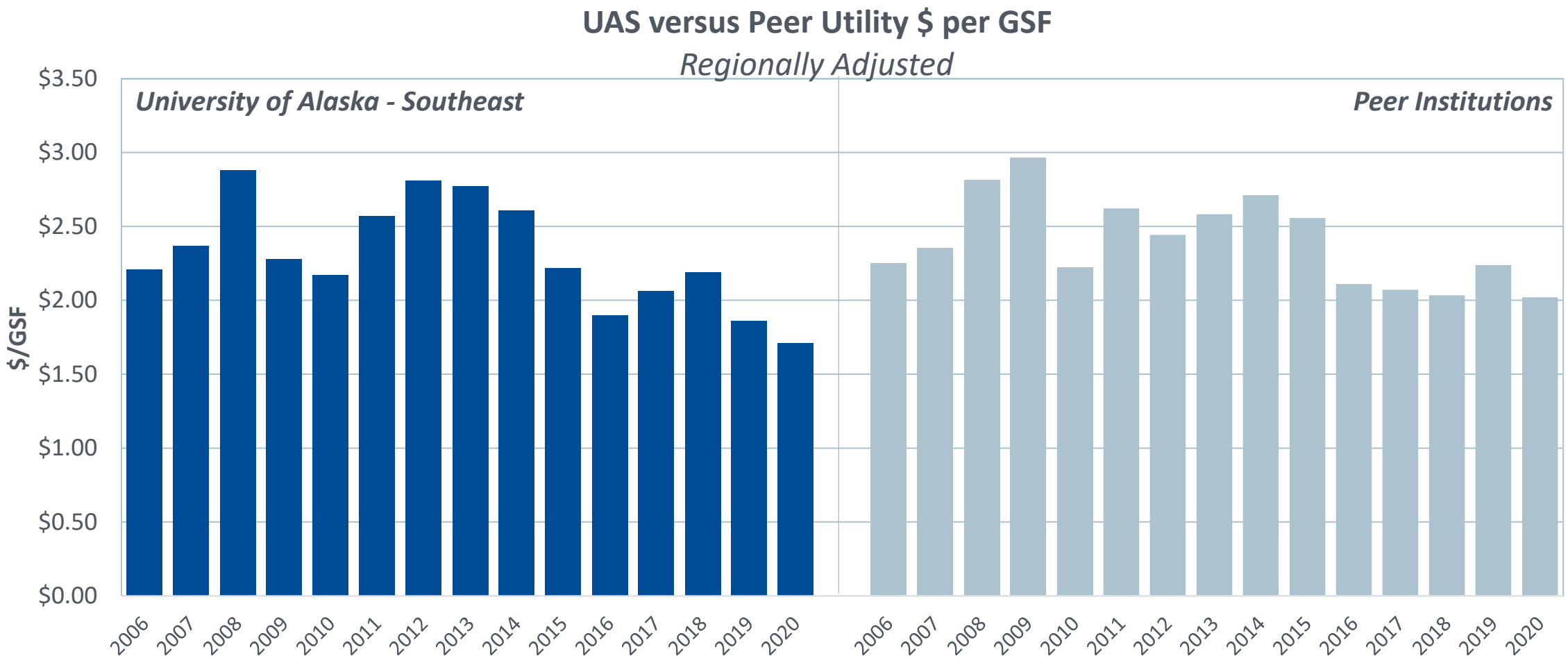
Increases in PM program yield savings down the road by protecting assets



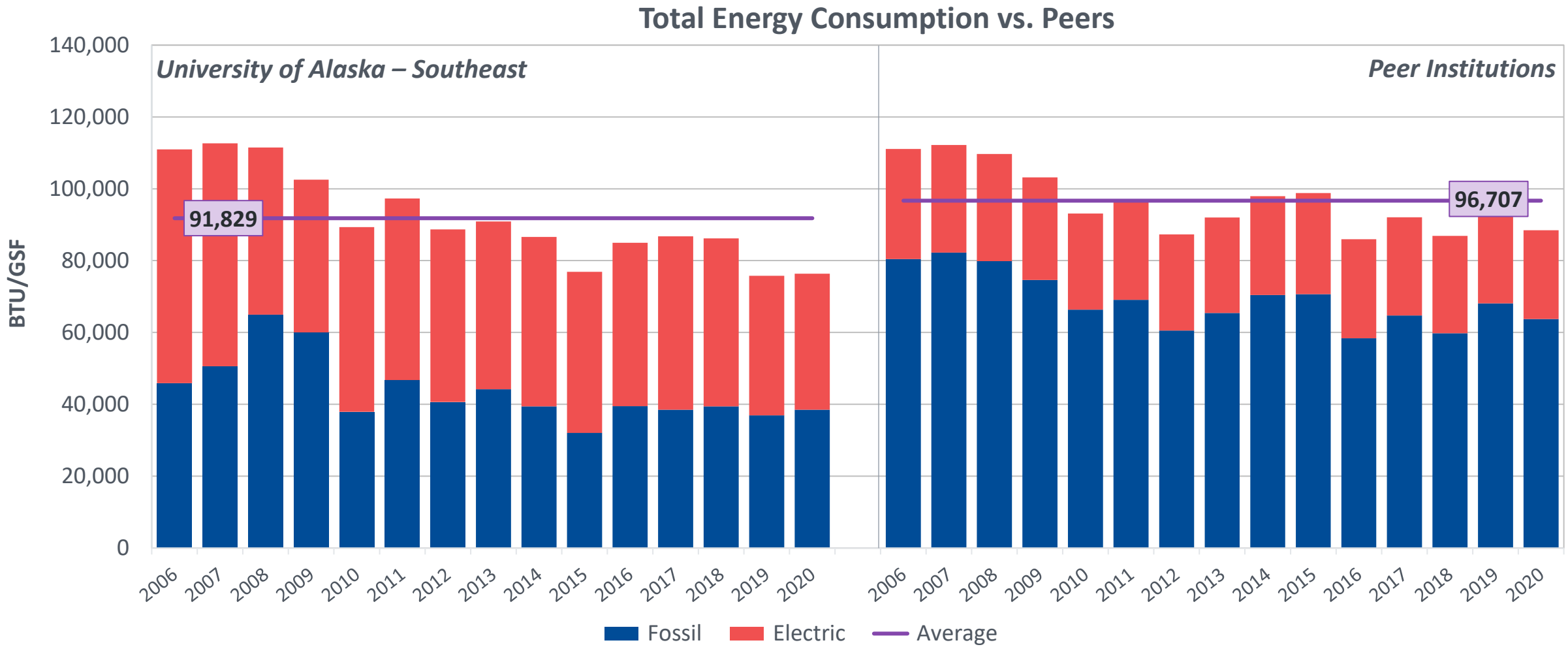


Utility Operating Expenditures Compared to Peers



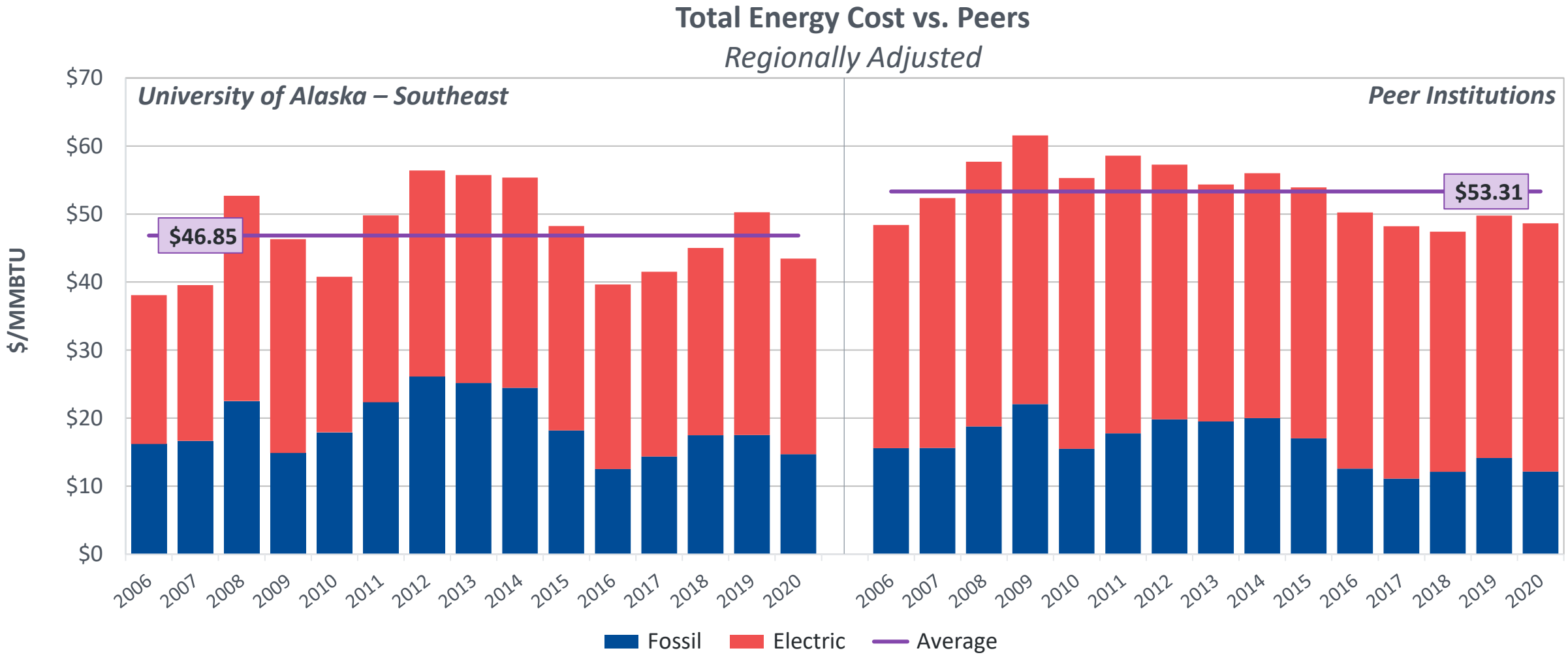
Total Energy Consumption

UAS is consuming less energy than peer institutions with each year



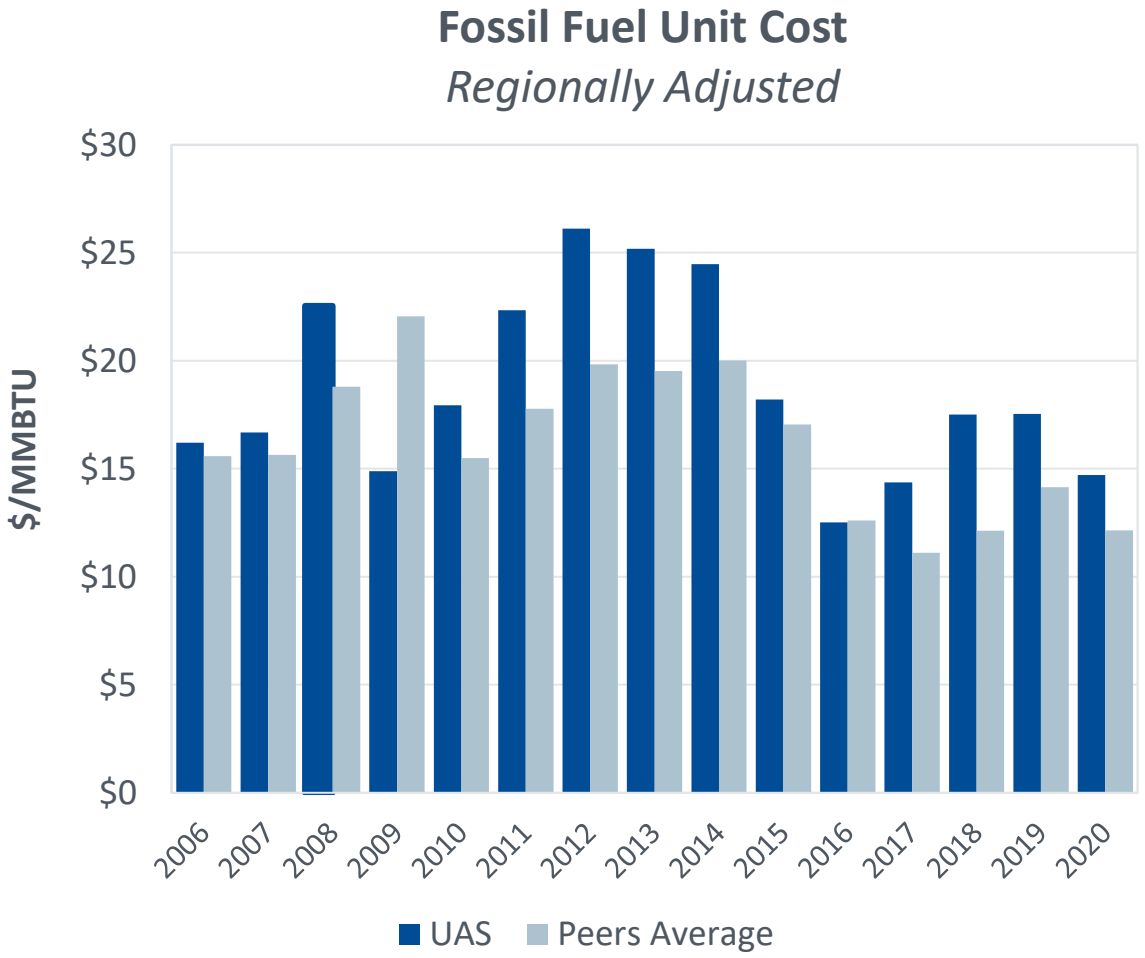
Energy Expenses are Staying Steady Over Time

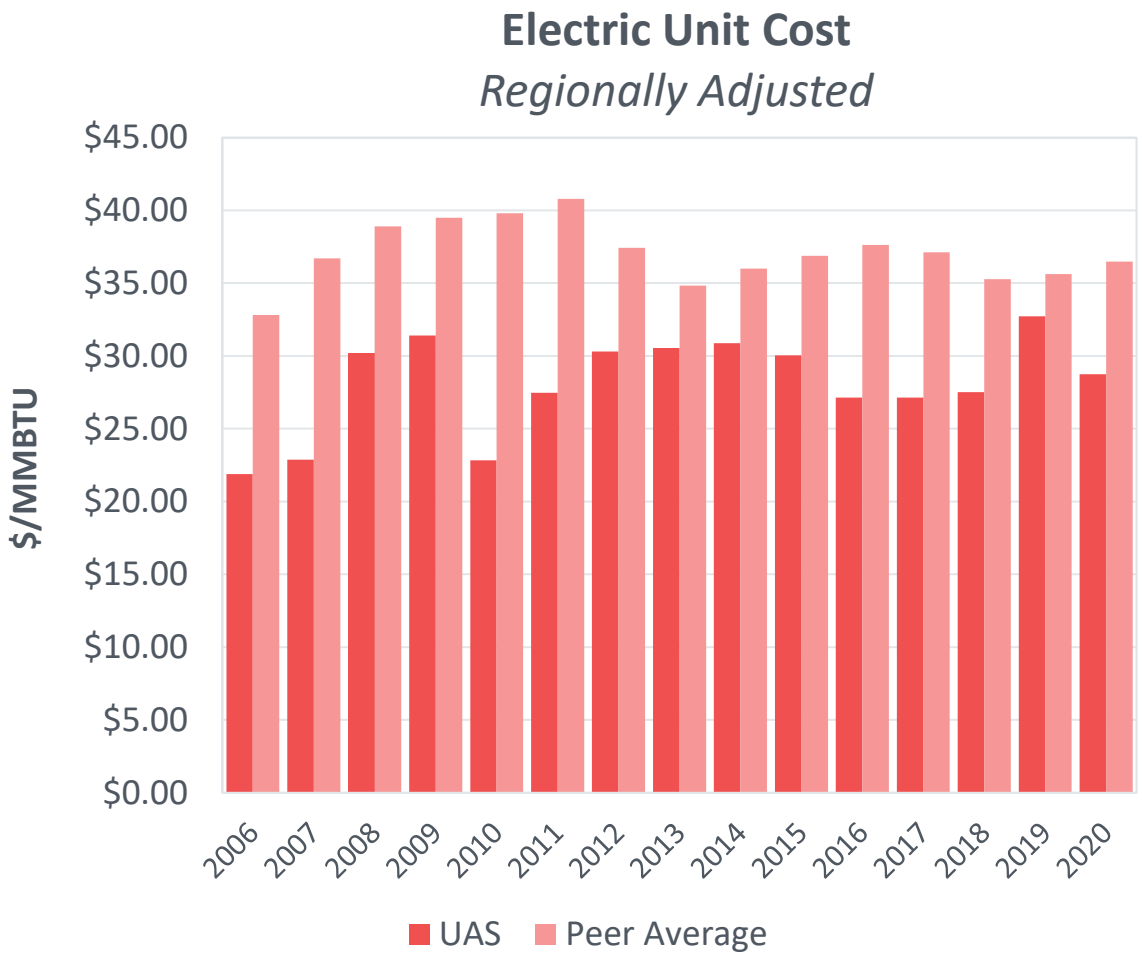
While electric costs increase slightly over time, fossil costs decrease in recent years



Differences in Unit Costs are Growing vs. Peers

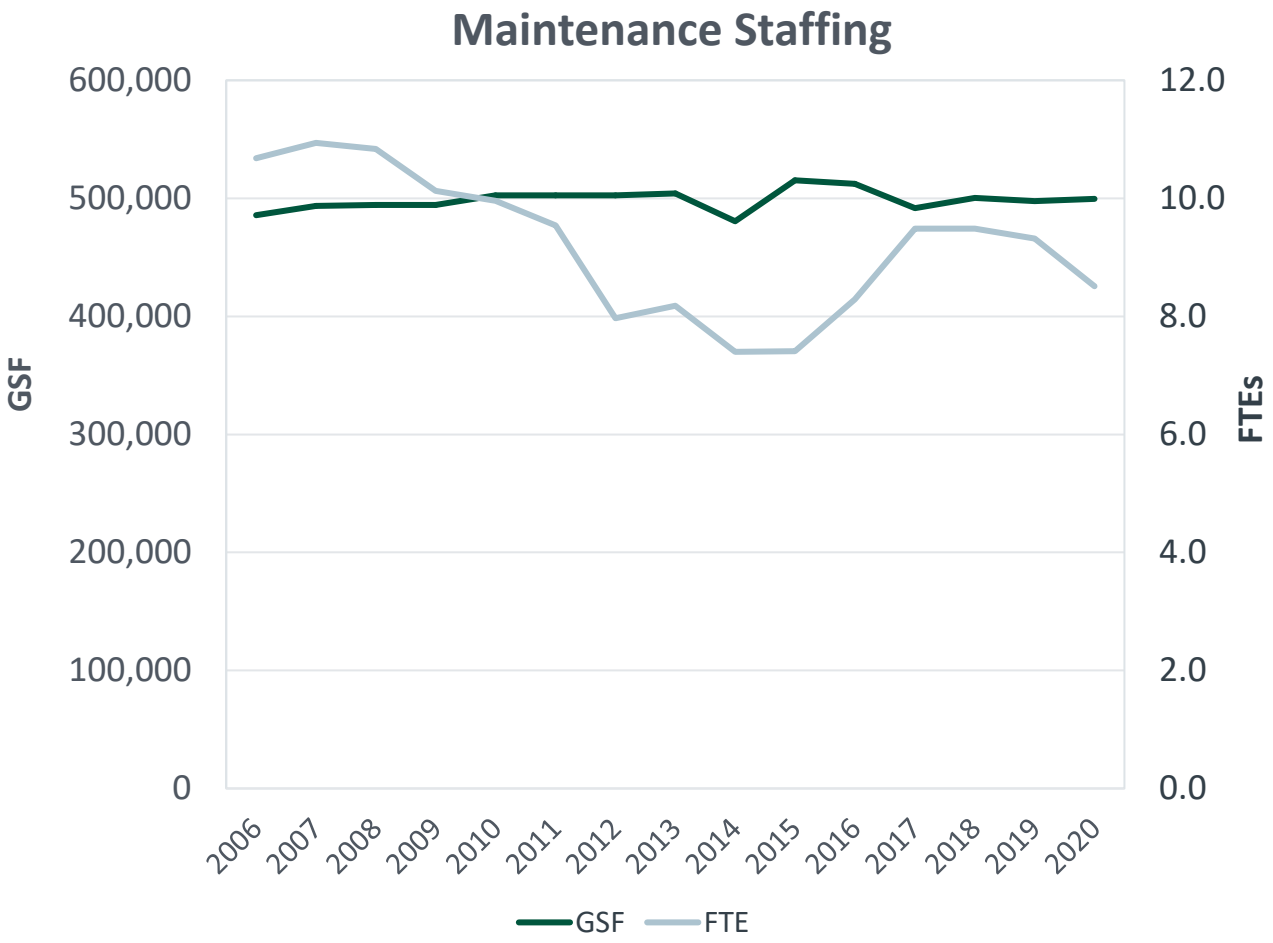
Fossil unit costs surpass the peer average

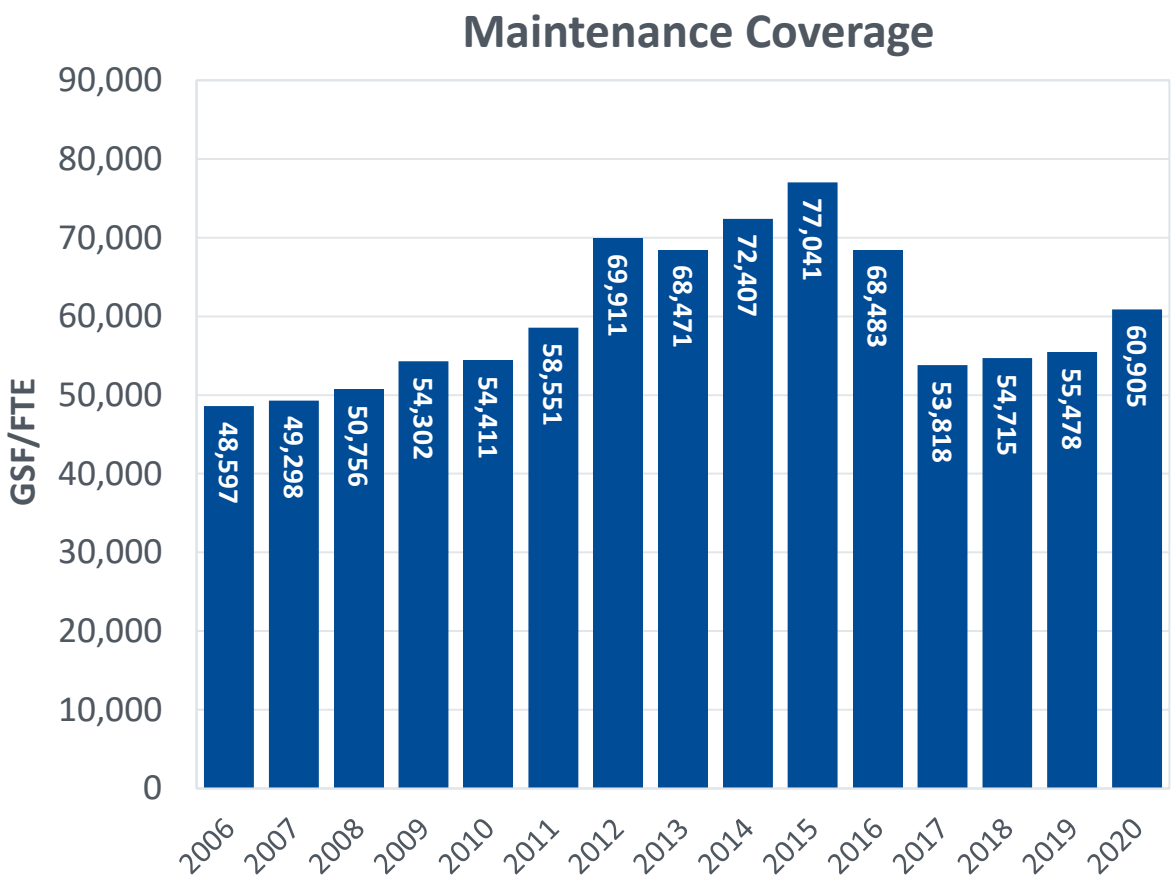




Maintenance Staffing Coverage

Coverage ratios have stayed low in recent years





Maintenance Metrics

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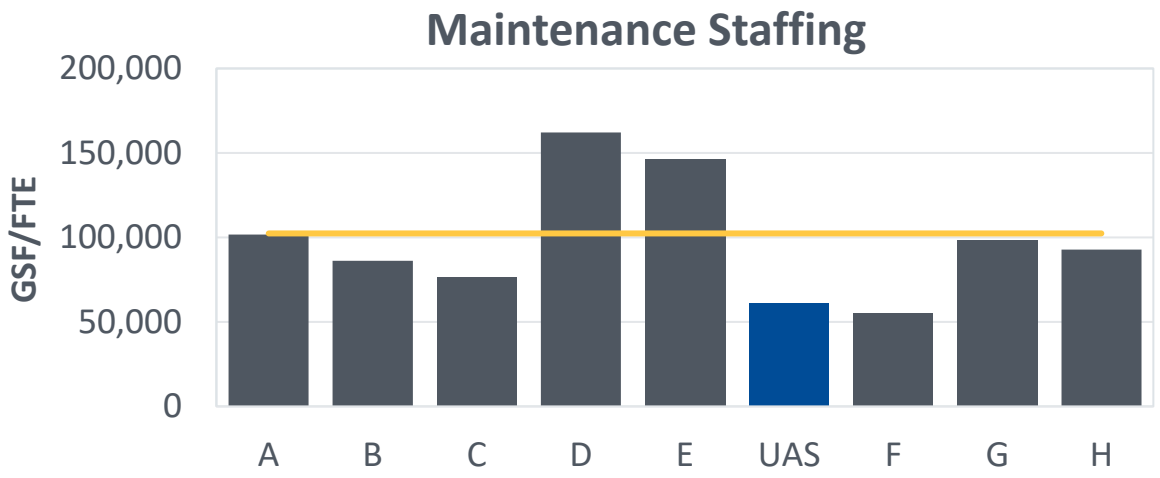
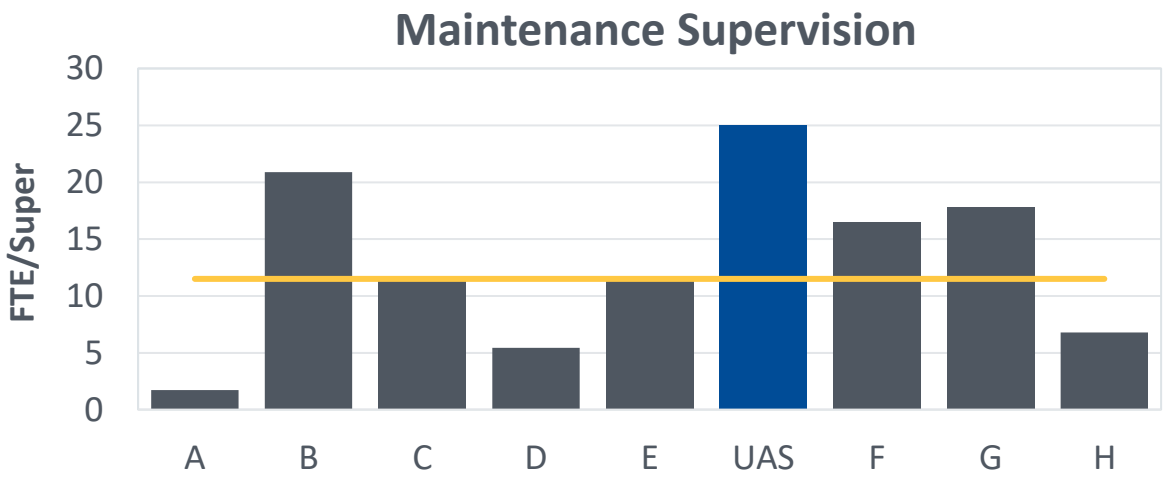
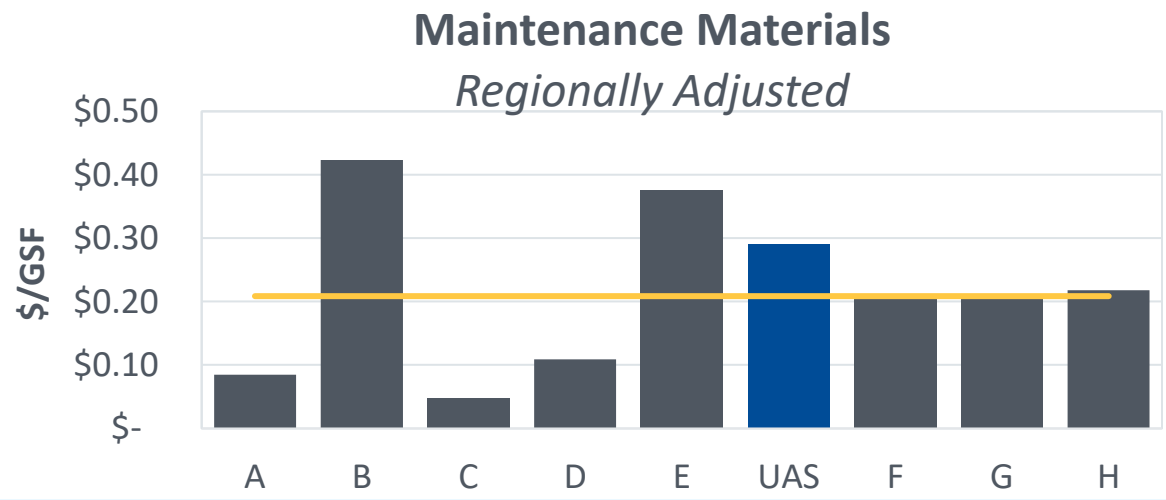
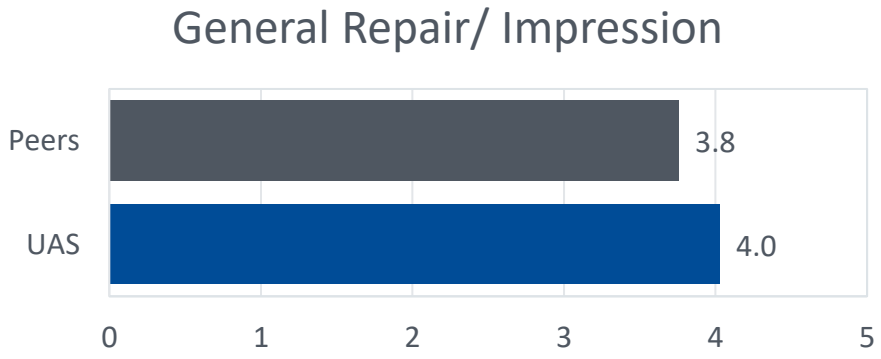
UAS has fewer maintenance supervisors, but more staff and materials









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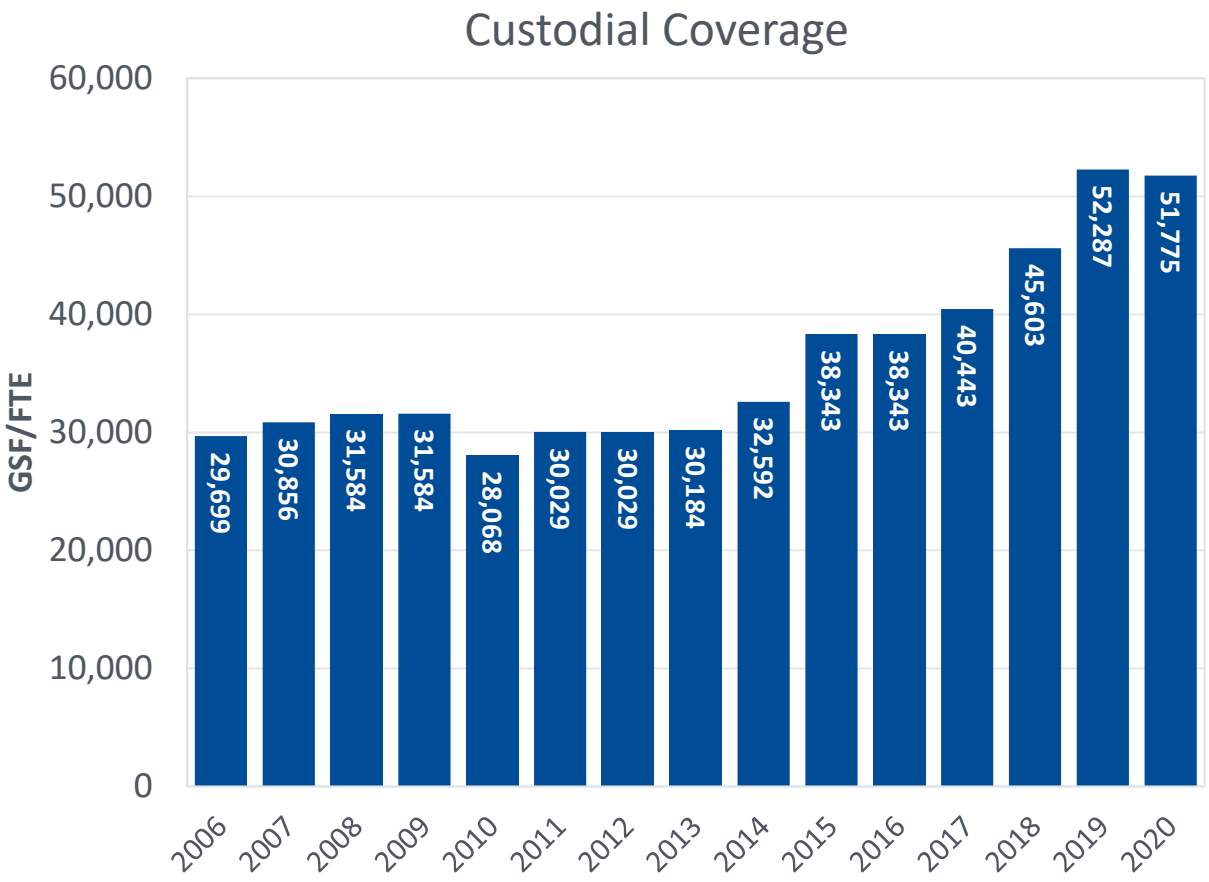
Peer Average

Institutions arranged by Technical Complexity

Custodial Staffing Coverage

UNIVERSITY of ALASKA SOUTHEAST

Custodial staff has had to cover more in recent years



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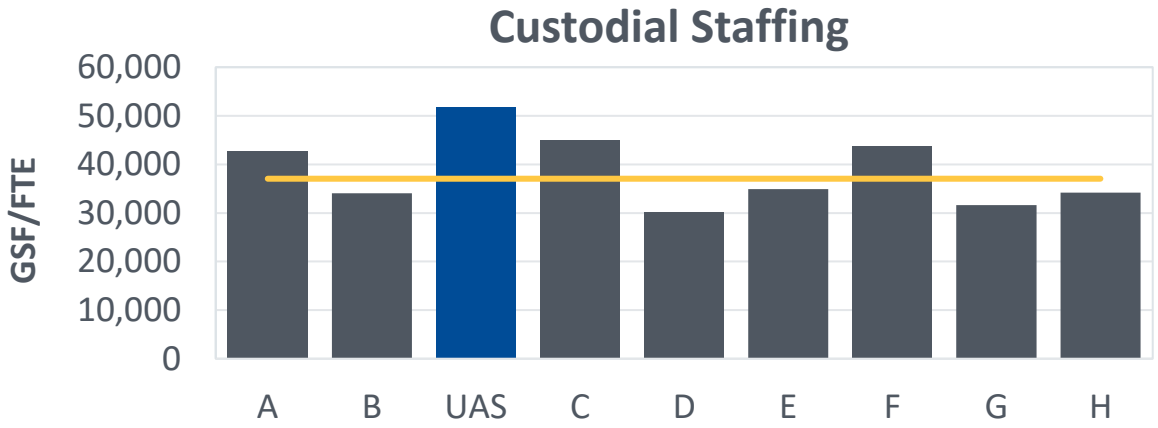
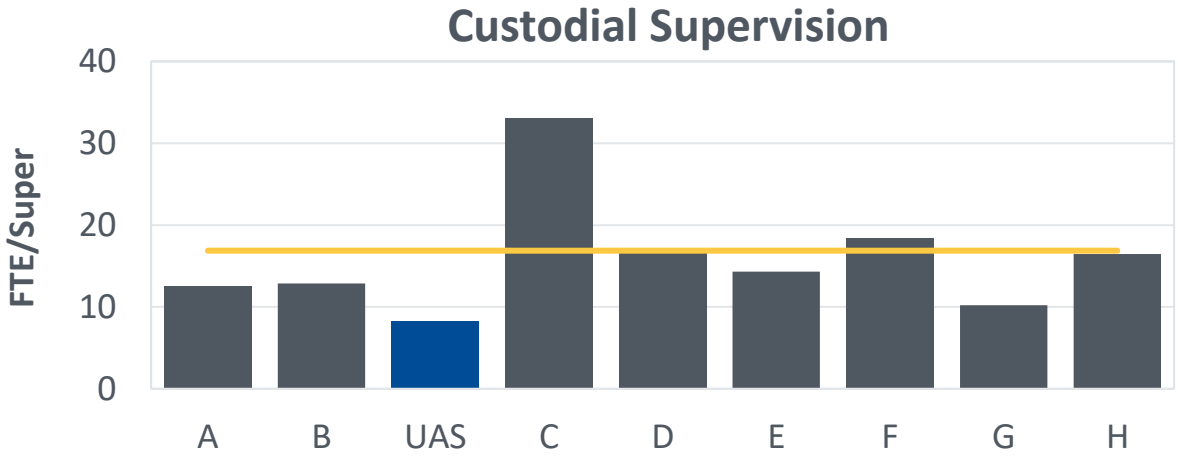
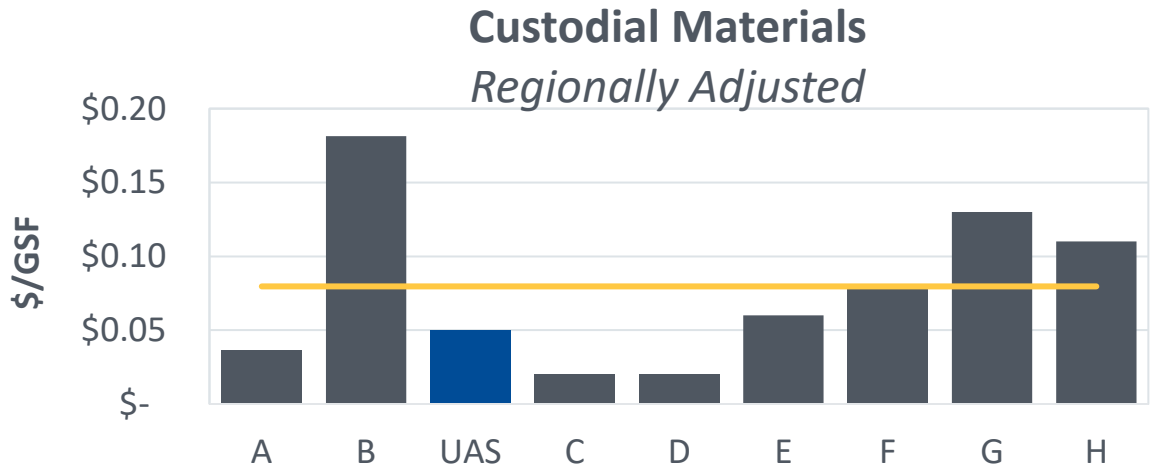
Custodial Metrics

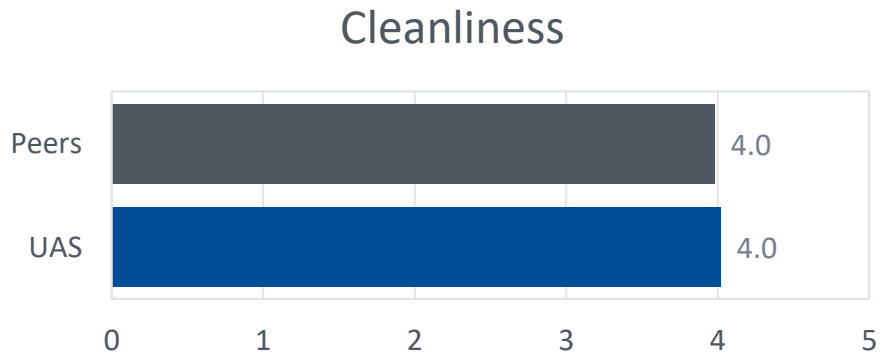
UNIVERSITY of ALASKA SOUTHEAST

UAS has more custodial supervisors, but less custodial staff and materials









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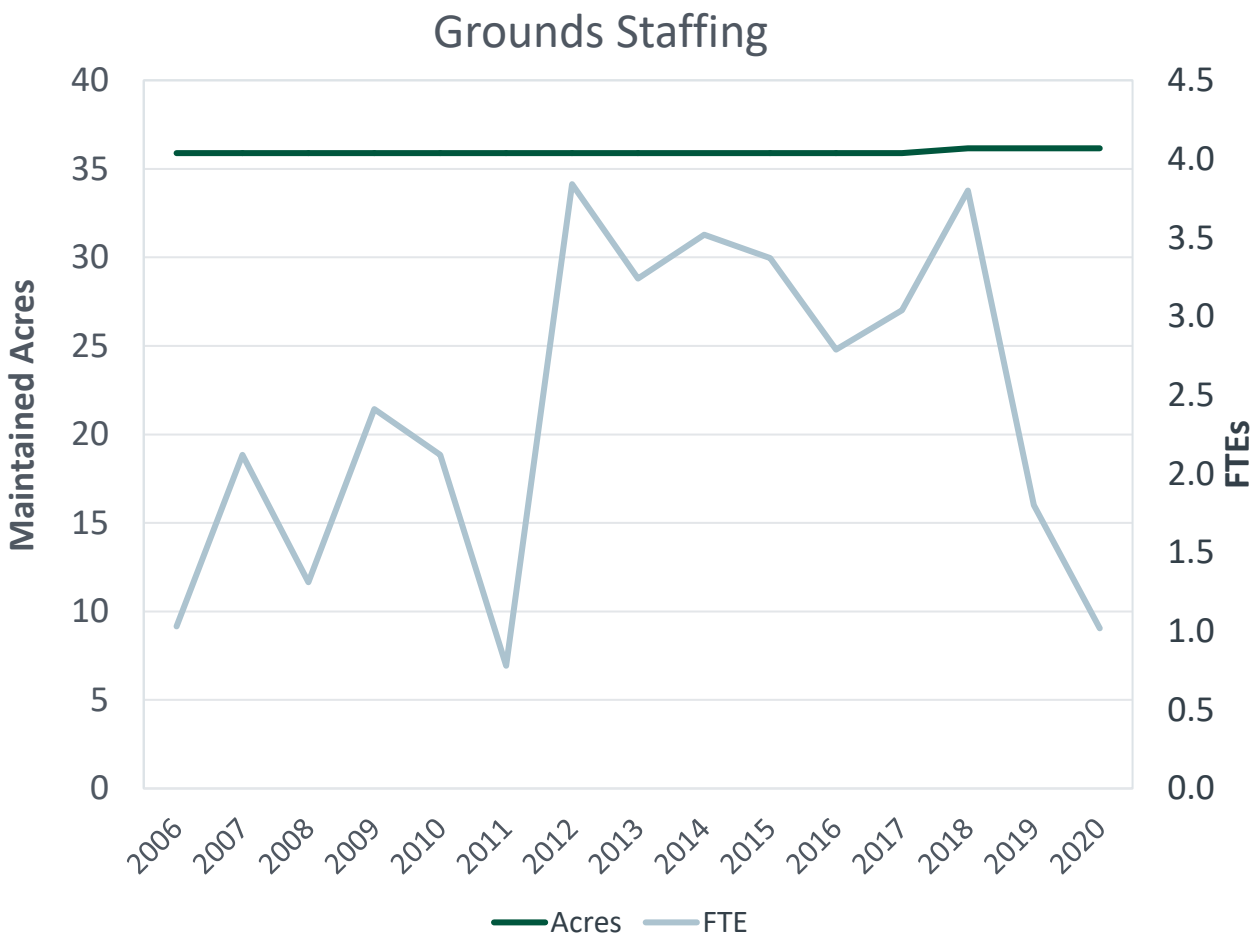
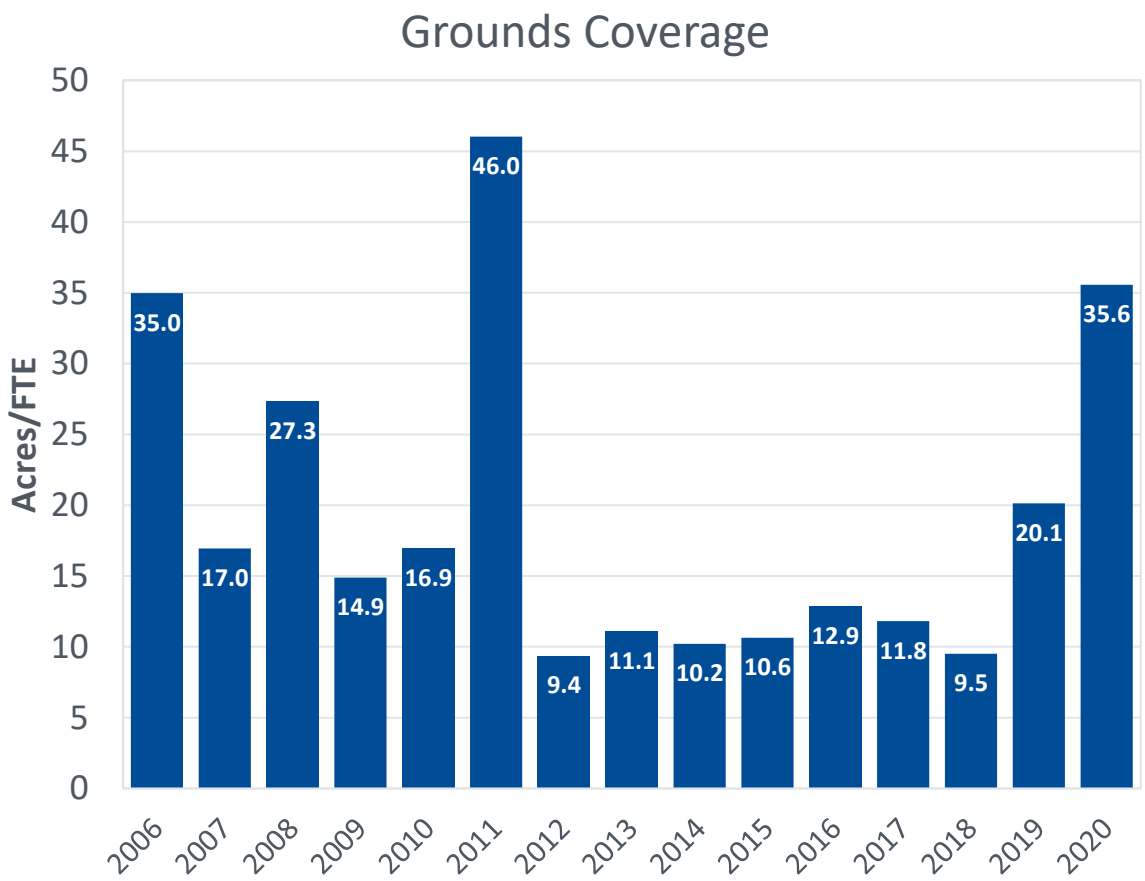
Peer Average

Institutions arranged by Density Rating

Grounds Staffing Coverage

Coverage stayed mostly steady until a notable increase happened in FY19 and FY20

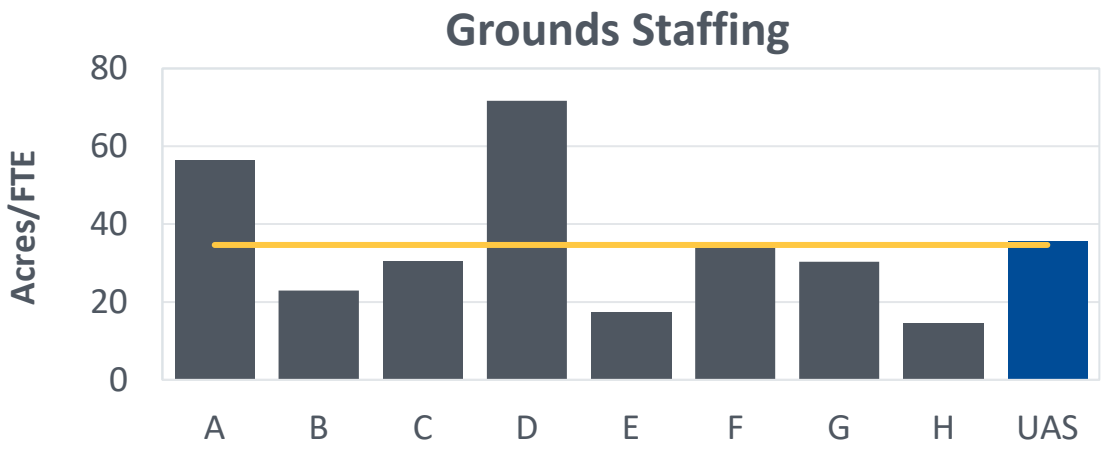


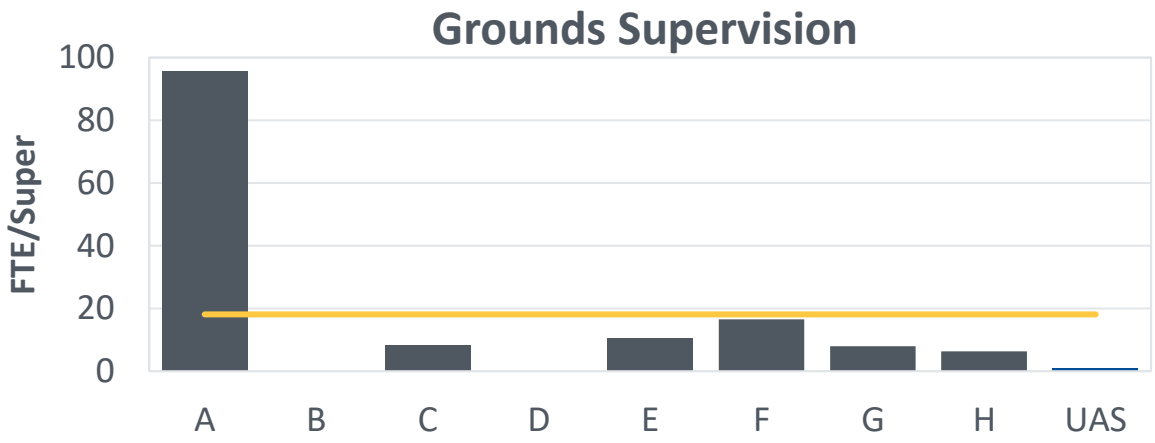


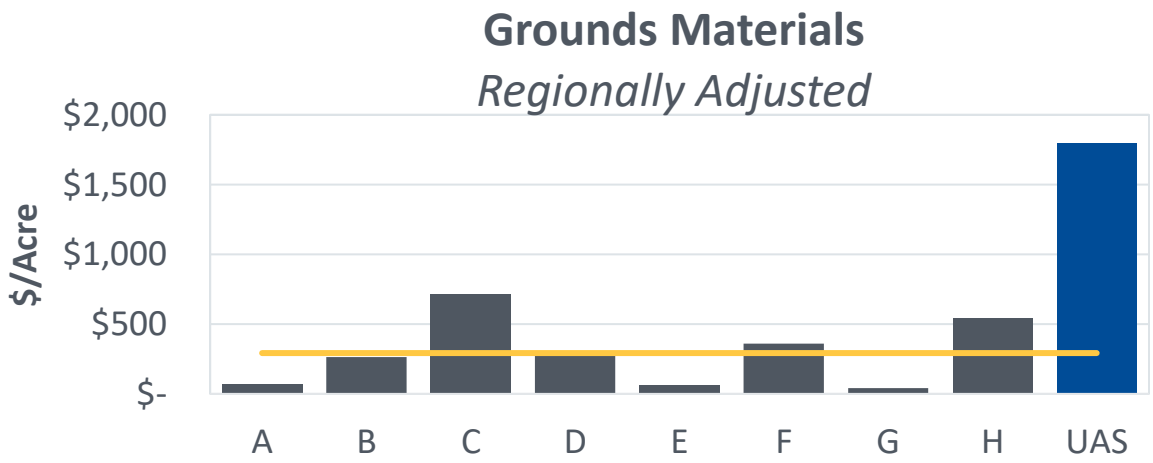
Grounds Metrics

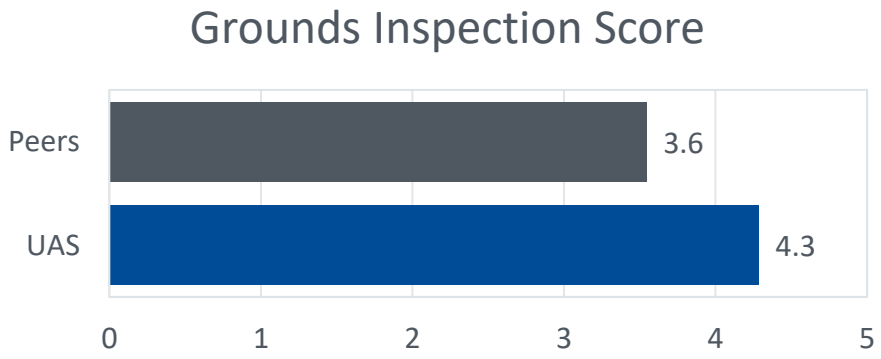
UNIVERSITY of ALASKA SOUTHEAST

Similar staffing coverage to the peer average, but far more materials









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Peer Average

Institutions arranged by Grounds Intensity

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Building knowledge

Conclusion

Key Takeaways

UNIVERSITY of ALASKA SOUTHEAST

- UAS' young space profile benefits from proactive capital and operational approaches – prioritize growing recurring capital and preventive maintenance funds
- Capital focus should be reinvesting into existing space. This preserves historic investments into new space, addresses deferred maintenance needs, mitigates exposure to failures and is aligned with enrollment trends
- Small buildings and small grounds space produces efficiency challenges for maintenance and grounds staff, requiring more FTEs to tackle problems effectively

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Building knowledge

Questions & Discussion

UAS FY20 Facilities Benchmarking & Analysis

Slide / Sheet Annotations

- Slide 4
    1. ROPA+ stands for Return on Physical Assets
    2. The amount of space included on the analysis varies, but is similar, for peer different institutions; we state the total included GSF for UAS to establish the space included in the ROPA analysis
- Slide 5
    1. The importance on focusing on existing space rather than new space, non-facilities work, and even infrastructure feeds into the concept of having a strategy toward the approach of capital projects. When less capital spending is being done it is important that the most valuable capital projects are completed, which means considering the relative needs of a building with the age, or associated risk, of the space. This also speaks to the concept of functional obsolescence; not doing work like replacing a boiler in a building just because it is due for replacement but rather knowing what the long-term plan is for that space and whether it makes more strategic sense to defer work or, in the case of a building being renovated or replaced in the future, not doing the work at all.
- Slide 10
    1. The challenge in efficiency comes in two forms.
        - The first is the challenge for maintenance staff due to the high building intensity, which correlates to the campus having more buildings than the average peer. Each building has components that need to be taken care of by maintenance staff and the time taken traveling between those buildings to address those components' needs is time lost.
        - The second challenge is for grounds staff due to high grounds intensity, which correlates to smaller plots of grounds space rather than wide open grounds area. It takes more grounds staff to care for several flower patches and grassy lawns than it takes to care for one single large field with the same total area.

    Both challenges demand more staff to overcome the inefficiencies shown by these metrics.
- Slide 13
    1. As a building ages, the lifecycles become more expensive, frequent, & critical. Since UAS has 23% of its space under 10 years old, these building lifecycles will need to be addressed in the same period. There will need to be a plan now to meet these needs in the future
    2. The order of the colors on the right is the same order used in the bar chart and matches the legend at the bottom of the slide. It explains what to expect both operationally and capitally as buildings gradually age.
- Slide 15
    1. These two waves go off the two largest groupings of construction/renovation that happened at UAS. For Wave 1, it assumes that the first set of life cycles that come due

are done on time. Assuming this happens, what this slide tells us is that for the two largest waves of construction, which alone are around 50% of the total GSF of UAS, all the major systems in those buildings will have their life cycles come due between 2025 and 2040. There will need to be a plan for how to effectively address the competing life cycles of assets coming due in multiple buildings throughout this time period.

- Slide 23
    1. When an institution is adding space, which also means that they are adding future need. The needs associated with a younger space are far lower than that of an older space. By completing renovations, you are effectively reducing your exposure to risk and one can say that you are stabilizing the future needs from increasing. This is because renovations address needs in a large scale
    2. The life cycle need line represents the amount of funding necessary to keep up with the capital needs of facilities over the course of its useful life. This figure represents replacing components/systems in-kind and does not account for any modernization
    3. By doing renovations, you are resetting the age of the building and addressing the needs of the facilities by effectively.
    4. Needs increase as a building ages over time.
    5. For the area between the lines, we are stating that
        - When funding levels are below the annual investment target you are deferring needs, and increasing the backlog and your exposure to risk
        - When funding is between the annual investment target and the life cycle need you are maintaining the backlog and risk exposure
        - When you can fund above the life cycle need line, you are able to address more needs than what is coming due in that year, thus buying down the backlog of need and reducing your relative risk

- Slide 24
    1. Because the Juneau campus makes up such a large percentage of UAS' total space and capital spent, it appears visually very similar to the slide before with all of UAS included. Where it is worth noting it is different is in 2018. With all campuses, combined, capital spending in 2018 exceeded the annual investment target, but when looking at Juneau alone it has been below target for the last three years. This will have noticeable impacts on the campus as capital spending on existing space remains low
- Slide 25
    1. The jump in capital spending in 2018 for the Ketchikan campus was due to the work done on the Maritime Center
- Slide 26
    1. The jump in capital spending in 2013 for the Sitka campus was due to various Campus Completion projects that focused on the refresh and renewal of interior space.
- Slide 27
    1. Even despite recent years, reliable funding has been stronger at UAS than peers historically
    2. Ideally, this means that you should be able to count on those recurring dollars to help you reach your annual investment target and keep up with needs more reliably

- Slide 34
    1. UAS' reduction in operational spending can demonstrate an ability to function more efficiently than in previous years but only so long as the operational needs of campus are still being met. Daily service needs will increase as the age of campus increases due to the strains of aging components demanding attention by more staff. Preventative maintenance should be done on components that are still young in order to increase the total time they can function before needing to be replaced.