UNIVERSITY of ALASKA

*Many Traditions One Alaska*

# Proposed
# FY22 Capital Budget and
# 10-Year Capital Improvement Plan

Board of Regents
November 5-6, 2020



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**Table of Contents**

**Proposed FY22 Capital Budget Request**



**References**

**University of Alaska**
**Proposed FY22 Capital Budget Request and**
**10-Year Capital Improvement Plan**
**Introduction**

Presented within are the proposed FY22 Capital Budget Request and the 10-Year Capital Improvement Plan. The goal of the Board of Regents' University of Alaska FY22-FY31 Capital Improvement Plan (CIP) is to guide decision making that ensures the necessary facilities, equipment, and infrastructure are in place to:

- achieve the board's short-, mid-, and long-term goals,
- support the academic and research directions of the university system,
- support a continuous improvement philosophy, and
- bring awareness to the associated future annual operating costs that may be incurred.

The capital budget presents the top priority projects for FY22 and the short-, mid-, and long-term capital investment priorities consistent with university campus master plans. Priority new construction projects that have already received some approval are included in the 10-year capital improvement plan for consideration in future capital budget requests.

The proposed FY22 Capital Budget includes the following state investments:

- $50 million for Deferred Maintenance (DM)/ Renewal and Repurposing (R&R) is the minimum funding required to maintain UA's over 400 (8.3 million gross square feet) facilities and infrastructure across the state. Due to many years of unfunded critical projects, there is an increasing risk and evidence of building closures, and a deferred maintenance/renewal & repurposing (DM/R&R) backlog that has grown to exceed $1.4 billion.
- $15.1 million for two years of annual debt service for the UAF Combined Heat and Power Plant-Municipal Bond Bank Loan and deferred maintenance across the UA system. As the University of Alaska works to stabilize its budget post-compact period, debt relief is a prudent and necessary move to strengthen UA's financial position and reduce fixed costs.
- $428 thousand required for a grant proposal for an energy saving project. This project is a partnership between UAA and Alaska Energy Authority that will add a combined heat and power (CHP) microturbine to the UAA ConocoPhillips Integrated Sciences Building (CPISB). The localized generation of power provided by the CHP will reduce the overall peak electrical demand and eliminate energy transmission losses experienced through standard electrical distribution grids.
- $17.3 million to mitigate the impacts of COVID-19 on UA revenue. As UA works to maintain core operating services and support economic recovery by the people of Alaska while itself recovering from the unexpected impact of COVID-19, bridge funding to the final year of the compact is requested for capital needs during this transition. These funds will be requested as part of the supplemental budget.

# University of Alaska
# Proposed FY22 Capital Budget Summary

*(in thousands of $)*

| | Unrestricted General Funds (UGF) | Designated, Federal and Other Funds | Total Funds |
|---|---|---|---|
| **Facilities Deferred Maintenance (DM) / Renewal & Repurposing (R&R)[1]** | **50,000.0** | | **50,000.0** |
| UA requests $50 million in FY22 for deferred maintenance/renewal & repurposing as follows: | | | |
| *UAA Main Campus* | *13,300.0* | | *13,300.0* |
| Library Old Core Hydronic Heating Replacement, Lucy Cuddy Roof, & Anchorage Campus Drain Line | | | |
| *UAA Community Campuses* | *3,000.0* | | *3,000.0* |
| Upgrade Fire Systems, Electrical Arc-Flash, Exit Signage, & ADA Compliance | | | |
| *UAF Main Campus and Community & Technical College (CTC)* | *28,200.0* | | *28,200.0* |
| Fairbanks Campus Bartlett Hall Plumbing Replacement, Constitution Hall Window Replacement, Campus-Wide Sanitary & Storm Sewer Utilities Upgrade, & University Park Restroom Renovation | | | |
| *UAF Community Campuses* | *2,200.0* | | *2,200.0* |
| CRCD Fire Alarm Replacement, Kuskokwim Campus Voc-Tech Center Electrical Code Compliance, & CRCD Campus Wide Fuel Tank Compliance | | | |
| *UAS Main & Community Campuses* | *3,100.0* | | *3,100.0* |
| Juneau Novatney Roof Replacement, Juneau Housing Lodge Fuel Tank Replacement, & Ketchikan Paul Building Roof Deck Mansards Replacement | | | |
| *SW Statewide* | *200.0* | | *200.0* |
| Butrovich lighting efficiency upgrades | | | |
| **UA Debt Relief** | **15,118.4** | | **15,118.4** |
| **UAA ConocoPhillips Integrated Sciences Building (CPISB) Combined Heat and Power (CHP) Energy Savings Project** | **428.0** | **1,000.0** | **1,428.0** |
| **UA COVID Impact Mitigation[2]** | **17,335.0** | | **17,335.0** |
| **FY22 Capital Budget Total** | **82,881.4** | **1,000.0** | **83,881.4** |

1. Shovel ready projects may be submitted for FY21 supplemental funding.
2. This is a developing situation and the amount may be adjusted as additional information is received regarding COVID related losses. These funds will be requested as part of an FY21 supplemental budget.

# University of Alaska 10-Year Capital Improvement Plan (in thousands of $)

| | FY22 | | | State Appropriations | | |
|---|---|---|---|---|---|---|
| | Unrestricted General Fund (UGF) | Designated, Federal, and Other Funds | Total Funds | Short-Term FY23-FY24 | Mid-Term FY25-FY26 | Long-Term FY27-FY31 |
| **Deferred Maintenance (DM)/Renewal & Replacement (R&R)** | | | | | | |
| Facilities Deferred Maintenance/Renewal & Repurposing | 50,000.0 | | 50,000.0 | 100,000.0 | 100,000.0 | 250,000.0 |
| | | | | | | |
| Major Maintenance & Renewal Projects | | | | | | |
| *UAA Main Campus* | | | | | | |
| Campus Space Reallocation/Consolidation | | | | 5,000.0 | 2,000.0 | |
| Health Lab and Workforce Demand Renovation and P3 | | | | 2,830.0 | 770.0 | |
| Exterior Safe Access and Circulation Improvements | | | | 500.0 | 1,000.0 | 500.0 |
| Welcome Center and Student Services P3 | | | | 5,000.0 | | |
| Sports Complex Capacity Improvements | | | | 3,000.0 | 11,000.0 | |
| *UAF Campuses* | | | | | | |
| Campus Wide Footprint Reduction and Modernization: Rasmuson Student Success Center | | | | 9,500.0 | | |
| Seward Marine Center Research Vessel Infrastructure | | | | 3,700.0 | | |
| Arctic Health Research Center DM&R and Repurpose | | | | | 64,000.0 | |
| Fine Arts: Theater Wing Major Renewal | | | | | 34,000.0 | |
| *UAS Campuses* | | | | | | |
| Natural Science Lab Consolidation | | | | 950.0 | | |
| Welding Lab Replacement - Juneau | | | | 4,500.0 | | |
| Egan Library / Cyril George Indigenous Knowledge Center (CGiKC) ($2.5M Non-state) | | | | | | |
| **New Construction** | | | | | | |
| Academic Facilities | | | | | | |
| *UAF Main Campus and Community & Technical College (CTC)* | | | | | | |
| Fire and Emergency Services Training and Education Facility | | | | 40,560.0 | | |
| Troth Yeddha' /Indigenous Studies Center: Park & Building ($24.0M Non-state) | | | | 5,000.0 | 10,000.0 | |
| Community & Technical College (CTC) Aviation/Hangar Addition | | | | | 13,000.0 | |
| *UAF Community Campus* | | | | | | |
| Kuskokwim Campus Yup'ik Cultural Learning Center Expansion | | | | | 7,200.0 | |
| Research Facilities | | | | | | |
| *UAF Main Campus* | | | | | | |
| Science, Teaching & Research Building | | | | | 3,000.0 | 97,000.0 |
| Toolik Research Field Station: Classroom ($3.0M Non-state) | | | | | | |

## University of Alaska 10-Year Capital Improvement Plan (in thousands of $)

| | FY22 | | | State Appropriations | | |
|---|---|---|---|---|---|---|
| | Unrestricted General Fund (UGF) | Designated, Federal, and Other Funds | Total Funds | Short-Term FY23-FY24 | Mid-Term FY25-FY26 | Long-Term FY27-FY31 |
| Student Life (Housing), Support, and Other Facilities | | | | | | |
| *UAF Main Campus* | | | | | | |
| Student Success: Housing Revitalization | | | | 82,500.0 | | |
| Student Success: Athletics Consolidation to Campus | | | | 12,000.0 | 48,000.0 | |
| Student Success: Student Recreation Center Expansion | | | | | 750.0 | 12,000.0 |
| Student Success: Core Campus Parking Garage | | | | | | 30,000.0 |
| Infrastructure | | | | | | |
| *UAF Main Campus* | | | | | | |
| Seward Marine Center ($43.0M Non-state) | | | | | | |
| *UAS Main Campus* | | | | | | |
| Strengthen Campus Security - Juneau, Sitka, Ketchikan | | | | 500.0 | | |
| **Research for Alaska** | | | | | | |
| *UAA Main Campus* | | | | | | |
| ConocoPhillips Integrated Sciences Building (CPISB) Combined Heat and Power (CHP) Energy Savings Project | 428.0 | 1,000.0 | 1,428.0 | | | |
| *UAF Main Campus* | | | | | | |
| Poker Flat Research Range (PFRR) Oil Spill Research Test Basin (Potential $1.0M Non-state) | | | | 750.0 | | |
| Alaska Roadmap for Nuclear Reactor Applications (Potential $1.9M Non-state) | | | | 700.0 | 300.0 | |
| **Equipment** | | | | | | |
| *UAA Main Campus* | | | | | | |
| Classroom Technology Enhancements | | | | 3,000.0 | 2,000.0 | 5,000.0 |
| *UAF Main Campus* | | | | | | |
| Inclusive Technology Infrastructure: e-Campus Recording Capabilities, ADA Accessibility & Instructional Classroom Technology | | | | 4,000.0 | | |
| *UAS Main Campus* | | | | | | |
| Smart Classrooms Juneau Campus | | | | 100.0 | | |
| **Other** (Systemwide) | | | | | | |
| UA Debt Relief | 15,118.4 | | 15,118.4 | | | |
| COVID Impact Mitigation | 17,335.0 | | 17,335.0 | | | |
| **FY22 Total** | **82,881.4** | **1,000.0** | **83,881.4** | **284,090.0** | **297,020.0** | **394,500.0** |

**Facilities Deferred Maintenance (DM)/Renewal & Repurposing (R&R)**
**FY22 (GF: $50,000.0, NGF: $0.0, Total: $50,000.0)**

The University of Alaska (UA) is responsible for maintaining facilities and infrastructure across the state. UA continues to be good stewards of these valuable assets, while exploring ways to reduce its facilities footprint and long-term operating costs. UA has over 400 facilities totaling 8.3 million gross square feet, with an average age of 35 years, an inflation-adjusted value of $4.7 billion, and a deferred maintenance/renewal & repurposing (DM/R&R) backlog in excess of $1.4 billion.

Due to many years of unfunded deferral of critical projects, there is an increasing risk and evidence of building closures. Last academic year, UAA had two separate infrastructure failures in two buildings requiring evacuation and rescheduling for over 60 class sections impacting campus operations for two weeks while emergency repairs were made. Similarly, UAF has had to close four floors of restrooms in Bartlett Hall over the last three semesters to make emergency plumbing repairs. These numerous unplanned closures cause significant hardship on student learning, they are expensive, and there is associated lost productivity of all university students, faculty and staff. The following projects are UA's highest priority, shovel ready projects:

UAA's Library Old Core Hydronic Heating Replacement, Lucy Cuddy Roof, and Anchorage Campus Drain Line Repair and Replacement projects are shovel ready. These projects will replace failing heating, roof, and drain systems, upgrade structural components for seismic restraint, and prevent significant roadway hazards and disruptions to students and staff.

UAF's top shovel ready projects are the Fairbanks Campus Bartlett Hall Plumbing Replacement, Constitution Hall Window Replacement, and Campus-Wide Sanitary & Storm Sewer Utilities Upgrade. These projects will correct major code citations, provide ADA compliant facilities, improve quality of life, reduce energy usage, and remove potential hazards.

UAS's Novatney Roof Replacement and Housing Lodge Fuel Tank Replacement are their top shovel ready projects that will replace a roof which has exceeded its warranty period and reached the end of its useful life and replace a single walled fuel tank in order to eliminate the associated environmental liability.

**UA Debt Relief**
**FY22 (GF: $15,118.4, NGF: $0.0, Total: $15,118.4)**

As the University of Alaska works to stabilize its budget post-compact period, debt relief is a prudent and necessary move to strengthen UA's financial position and reduce fixed costs. Debt relief increases UA's capacity to respond to current and future revenue pressures and would help free up valuable operating money for academic purposes.

This request funds two years of annual debt service for the UAF Combined Heat and Power Plant-Municipal Bond Bank Loan and deferred maintenance across the UA system.

- Municipal Bond Bank Debt
  In FY14, as part of the financing package for the UAF Combined Heat and Power Plant (CHPP), the Legislature added $7 million to UA's unrestricted general fund (UGF) appropriation to pay for a portion of the power plant's debt service including the municipal bond bank loan. Part of the financing plan required UAF to bond for the remainder of the project. The CHPP total annual debt service payment is $10.5 million ($9.8 million UGF). UAF is looking at a variety of partnerships that may have the potential for a mutually beneficial solution to

maximize the full capacity of the combined heat and power plant. This funding provides a bridge while the partnerships are being explored.

Since then, UA received $120 million in UGF reductions (including Compact) that have required program reductions to cover the defunded debt service relief. Debt relief would fulfill the Legislature's original intent and would be consistent with other debt reimbursement appropriations.

- Deferred Maintenance Bond Debt
  UA issued deferred maintenance general revenue bonds for critical capital needs, as capital appropriations have been insufficient in recent years. Debt relief would reimburse UA for debt service on its deferred maintenance bonds.

**UAA ConocoPhillips Integrated Sciences Building (CPISB) Combined Heat and Power (CHP) Energy Savings Project**
**FY22 (GF: $428.0, NGF: $1,000.0, Total: $1,428.0)**

This project will add a combined heat and power (CHP) microturbine to the CPISB. The localized generation of power provided by the CHP will reduce the overall peak electrical demand and eliminate energy transmission losses experienced through standard electrical distribution grids. Combined, these energy savings will reduce operational costs, reduce overall greenhouse gas emissions, and promote environmental stewardship. This project is part of a grant proposal and partnership between UAA and Alaska Energy Authority. If funded, the project will provide research and data supporting the US Department of Energy, Office of Energy Efficiency and Renewable Energy Building Technology Proving Ground - Public Field Verification. If successful, the project will serve as a model to expand to other public facility owners including other UAA facilities. This project is consistent with the strategic goals identified as part of the Anchorage Climate Action Plan to reduce greenhouse gas emissions and provide improvements to sustainable outcomes in our community.

**UA COVID Impact Mitigation**
**FY21 (GF: $17,335.0, NGF: $0.0, Total: $17,335.0)**

As the University of Alaska works to maintain core operating services and support economic recovery by the people of Alaska while itself recovering from the unexpected impact of COVID-19, bridge funding to the final year of the compact is requested for capital needs during this transition. These funds will be requested as part of the supplemental budget.

This request includes estimated reductions in revenue due to COVID in the following categories.

- Tuition Revenue loss from COVID - $6,900.0
- Auxiliary Cost of Operating under pandemic in a responsible way - $6,920.0
- Museum Revenue loss from COVID - $1,200.0
- Facilities Access Control System to minimize COVID health risks - $2,315.0

COVID loss replacement funding has also been requested from alternate sources. If other funding is received, the requested amount will be adjusted accordingly.

## University of Alaska
## FY22 Priority Deferred Maintenance (DM) and Renewal and Repurposing (R&R) Projects
## State Appropriations *(in thousands of $)*

| Project Name | DM & R&R |
|---|---|
| **UAA Main Campus** | |
| Campus Security & Safety | 1,900.0 |
| Regulatory Compliance, Safety Improvements, & Code Upgrades | 2,100.0 |
| Campus Building Interior & Systems Renewal | 6,450.0 |
| Campus Building Envelope & Roof Systems Renewal | 2,350.0 |
| Campus Exterior Infrastructure & Signage Renewal | 500.0 |
| UAA Main Campus Subtotal | 13,300.0 |
| **UAA Community Campuses** | |
| Community Campus Regulatory Compliance, Safety Improvements, and Code Upgrades | 3,000.0 |
| UAA Community Campuses Subtotal | 3,000.0 |
| **UAA Priority DM and R&R Total** | **16,300.0** |
| Main Campus Additional DM/R&R Projects | 479,657.1 |
| Community Campuses Additional DM/R&R Projects | 69,582.3 |
| **UAA DM and R&R Total** | **565,539.4** |
| **UAF Main Campus** | |
| Safety & Regulatory Compliance | 1,850.0 |
| Fairbanks Campus Building Interiror & Systems Renewal | 20,050.0 |
| Building Envelope & Roof Systems Renewal | 1,595.0 |
| Campus Infrastructure & Exterior Renewal | 4,405.0 |
| Community & Technical College Renewal | 300.0 |
| UAF Main Campus Subtotal | 28,200.0 |
| **UAF Community Campus** | |
| Rural and Community Campus Renewal | 2,200.0 |
| UAF Community Campuses Subtotal | 2,200.0 |
| **UAF Priority DM and R&R Total** | **30,400.0** |
| Main Campus Additional DM/R&R Projects | 774,673.9 |
| Community Campuses Additional DM/R&R Projects | 20,691.0 |
| **UAF DM and R&R Total** | **825,764.9** |
| **UAS Main & Community Campuses** | |
| Safety & Regulatory Compliance | 1,585.0 |
| Building Envelope & Roof Systems | 675.0 |
| Exterior Infrastructure | 665.0 |
| Interior Systems | 175.0 |
| **UAS Campuses Priority DM and R&R Total** | **3,100.0** |
| Campuses Additional DM/R&R Projects | 19,748.8 |
| **UAS DM and R&R Total** | **22,848.8** |

**University of Alaska**
**FY22 Priority Deferred Maintenance (DM) and Renewal and Repurposing (R&R) Projects**
**State Appropriations** *(in thousands of $)*

| Project Name | DM & R&R |
|---|---|
| **Statewide** | |
| Butrovich Lighting Efficiency Upgrades | 200.0 |
| **Statewide Priority DM and R&R Total** | **200.0** |
| Additional DM/R&R Projects | 6,462.7 |
| **Statewide DM and R&R Total** | **6,662.7** |
| **UA Priority DM and R&R Total** | **50,000.0** |
| **UA DM and R&R Total** | **1,420,815.7** |

UAA Main Campus

**UAA Campus Security & Safety**

(GF: $1,900.0, NGF: $0.0, Total: $1,900.0)

Concerns raised by faculty and staff based on the rise of active shooter incidents nationwide, prompted a review of the university's ability to secure buildings, classrooms, and other facilities manually or automatically in the event of any incident that would require persons on UAA campuses to shelter-in-place. Initial review of the level of effort involved to upgrade all room entrances with appropriate locking mechanisms and automation revealed a multi-year, multimillion-dollar effort. This project is developed to fully assess the level of effort, design a plan of execution, and implement security measures for the highest priority facilities and/or spaces. Follow-on phases will be developed and identified based on the planning and design efforts of this project.

**UAA Regulatory Compliance, Safety Improvements, & Code Upgrades**

(GF: $2,100.0, NGF: $0.0, Total: $2,100.0)

UAA requires significant and ongoing investment in existing buildings to maintain them for safe occupancy in compliance with regulation, code and safety improvements.

- Arc Fault Requirements
  This project addresses Occupational Safety and Health Administration (OSHA) National Fire Protection Association (NFPA) 70E requirements for standoff distances, electrical upgrades, safety placards and personal protective equipment requirements (PPE). Failure to meet Arc-Flash requirements places individuals operating an electrical panel at risk to severe injury or death. This project provides required Alaska Occupational Safety and Health (AKOSH) compliance and it remedies critical electrical safety concerns.

- Expired Exit Sign Replacement
  This project replaces and disposes of expired tritium exit signage across campus with Light Emitting Diode (LED) exit signage.

- Accessibility Improvements
  This project provides updates for Americans with Disabilities Act (ADA) accessibility including replacing door hardware, ADA compliant resolution, restroom upgrades for accessibility and ADA signage

**UAA Campus Building Interior & Systems Renewal**

(GF: $6,450.0, NGF: $0.0, Total: $6,450.0)

Many of the original buildings on the UAA campus were constructed in the early- to mid-1970s and the building systems are beginning to fail and are no longer adequate for the current demands and require replacement or upgrading. The mechanical, electrical and Heating Ventilation and Air Conditioning (HVAC) systems in particular fall into this category. Replacement parts for many of these systems are no longer available. The older systems are very expensive to operate due to their low efficiencies. Replacement of these systems would allow for increased energy efficiencies and better environmental control throughout the building. This project will replace failing piping, inadequate electrical systems, inefficient lighting, boilers, fans, deficient variable air volume (vav) boxes and upgrade the building automation system controls.

- Consortium Library Old Core Mechanical Upgrades
  The original HVAC systems consist, for the most part, of equipment over 46 years old located within the four central building cores. The boilers, main supply/exhaust fan units, heating/cooling coils, galvanized piping and humidification systems have all reached the end of their useful life. Major component parts are no longer available for these units. Heating system piping and coils are filled with sedimentation. Control systems are no longer able to properly regulate air flow resulting in irregular temperatures and

conditions within the building. The 2004 library addition contains newer HVAC systems with different control and delivery systems that have resulted in incompatibilities between the two systems and has affected the efficiencies of both systems.

- Eugene Short Hall (ESH) Infrastructure Upgrades
  This project will complete building code and infrastructure replacements. New boilers, required exits elevator upgrades, updates to dispatch related to NFPA requirements. Eugene Short Hall houses the university policy department and is central emergency response center for UAA main campus. Additionally, ESH has 11 classrooms that support academic mission critical needs. These facilities are in a state of failure and these renovations are necessary to improve reliability for University Police Department (UPD) operations. If funded, this project would leverage a combination of capital investment and an Energy Service Company (ESCO) investment grade audit in order to maximize impact to reducing deferred maintenance liability and provide upgrades to optimize energy efficiencies and utility cost savings.

- Professional Studies Building and Wendy Williamson Auditorium Infrastructure Upgrades
  This project would leverage a recent re-commissioning report with potential support of an Energy Service Company (ESCO) in order to update building mechanical and electrical systems that are beyond their useful life and optimize the building systems that will remain.

- Rasmussen Hall Infrastructure Upgrades
  This project will complete building code and infrastructure improvements. The elevators are consistently failing reducing operation, resulting in class cancellations, and restricting access to students with mobility concerns. Additionally, a number of mechanical systems throughout the facility require replacement.

- Social Sciences Building (SSB) Infrastructure Upgrades
  The Social Sciences Building was built in 1974 and used extensively for office, classroom and lab space, as well as the central information systems control center (IT services). It was originally built with a relocatable wall system that is no longer functional. This building will require extensive renovations to meet current operational, energy efficiency, and code and safety requirements. If funded, this project would leverage a combination of capital investment and an Energy Service Company (ESCO) investment grade audit in order to maximize impact to reducing deferred maintenance liability and provide upgrades to optimize energy efficiencies and utility cost savings.

**UAA Campus Building Envelope & Roof Systems Renewal**

(GF: $2,350.0, NGF: $0.0, Total: $2,350.0)

This project will address campus-wide deferred maintenance and renewal and renovation requirements for building envelope and roof systems. It will include roof repair and replacement, doors, windows, vapor barriers, siding, weatherization, insulation; and other building envelope issues.

- Lucy Cuddy (CUDY) Roof Replacement
  This project will demolish the existing roof system, increase parapet cap height, upgrade structural components for seismic restraint, replace roof decking as required and install a new roofing system. The Cuddy building supports the culinary arts and hospitality programs, provides student services such as study space and dining, and acts as a community venue generating revenue for UAA.

- These projects will demolish the existing roof system, increase parapet cap height, upgrade structural components for seismic restraint, replace roof decking as required and install a new roofing system. Furthermore, these projects will look to replace and upgrade the windows to increase R-Values and promote energy efficiency. The following buildings are the highest priority for this work:
  - Arcade Bridge & Lounge Roof and Window Improvements
  - Seawolf Sports Complex (SSC) Roof Replacement
  - Gordon Hartlieb Hall (GHH) Roof Replacement

- Student Union (SU) Roof Replacement
- Consortium Library Old Core Roof Replacement
- Wendy Williamson Auditorium (WWA) Roof Replacement
- Aviation Technology Center (ATC) Roof Replacement

**UAA Campus Exterior Infrastructure & Signage Renewal**

(GF: $500.0, NGF: $0.0, Total: $500.0)

The UAA campus is over 40 years old and many of the buried utilities, fire hydrants, waterlines, drainage infrastructure, roads, trails, sidewalks, parking areas, curbs and gutters are part of the original construction or have been impacted by construction, repair and renovation projects over the years. The buried piping is beyond its useful life which has resulted in increased failures primarily on west campus. This has resulted in water shutdowns, building closures, and sinkholes due to corrosion and piping failures. Additionally, the aged surfaces have resulted in uneven surfaces, lack of adequate sidewalks and other deficiencies that pose a safety hazard or are increasingly susceptible to additional damage. The safe, reliable and continued business function dictates need to upgrade and repair the infrastructure and surfaces to maintain a safe and effective environment for students, staff and the public. Additionally, this project improves the campus user experience by improving upon the wayfinding signage.

- Storm Sewer Improvements
  This is a multiple phase project that has been underway for the last 4 summers. This is the final phase to replace degraded and failing storm drains on the west Anchorage campus. The camera scope study revealed immediate needs including partially collapsed lines, bottom corrosion failures and offsets that are leading to an increase in pipe failure and eventually roadway collapse. This area of campus has experienced 4 significant sinkholes in the past 6-7 years due to drain system failure, erosion and associated corrosion of (typically Corrugated Metal Pipe (CMP)) to complete failure. These have manifested as sink holes in turf near roadways, collapse of road surfaces, and failure of parking surfaces in the area of west campus. All of the situations expose our students, staff and campus visitors to a number of immediate dangers for both pedestrian and vehicular traffic. Current assessment in three test areas has revealed several failure points including drain line failure and collapse as well as offsets leading to increased erosion and drain line failure. A collapse of any of the lines under roadways and potentially in parking lots would cause a significant disruption to students and staff as well as presenting a significant hazard. The scope of work includes finalizing design, spot repair, slip lining and/or outright replacement of failed CMP with a more durable CPEP (Corrugated PolyEthylene Pipe) plastic drain line.

- Water Supply Improvements
  This project addresses west campus water supply and aging infrastructure while simultaneously improving system reliability by installing water supply isolation valves. Currently, the system requires shut off of several west campus buildings when the system experiences critical failure.

<u>UAA Community Campuses</u>

**UAA Community Campus Regulatory Compliance, Safety Improvements, and Code Upgrades**

(GF: $3,000.0, NGF: $0.0, Total: $3,000.0)

UA's community campuses require significant and ongoing investment in existing buildings to maintain them for safe occupancy in compliance with regulation, code and safety improvements.

- Kodiak, Kenai Peninsula, Mat-Su, and Prince William Sound Campuses
  This project will work to ensure the safe occupancy and compliance with regulation at each of UAA's community campuses, and will prioritize fire systems, electrical arc-flash, exit signage, and ADA compliance.

FY22 Priority Deferred Maintenance (DM) and Renewal & Repurposing (R&R) Project Descriptions

UAF Main Campus

**UAF Safety & Regulatory Compliance**

(GF: $1,850.0, NGF: $0.0, Total: $1,850.0)

Providing a safe and compliant campus for everyone is the top priority at UAF. UAF works hard to maintain a healthy campus, reduce risk to our building occupants, and ensure students have the safest experience possible, yet the aging campus is requiring larger upgrades to reduce risk and prevent injury. There are many facilities constructed prior to code adoption in the State of Alaska that do not meet current requirements for ventilation, egress, ADA/Title IX, and fire protection. Remaining in compliance requires an on-going effort to modify and upgrade every component of campus from exterior hardscapes, elevators, building passageways, and restrooms to fire alarms, locker rooms, signage and security infrastructure.

Safety and regulatory compliance projects provide updates to building features meant to protect the occupants and reduce risk to our students, staff, and faculty. Work includes updating ventilation to ensure sufficient fresh air is supplied to occupied rooms, replacing fire alarm systems, correcting emergency egress paths, and abating asbestos-containing material. Regulatory compliance also requires the University to replace aging fuel tanks at remote sites across the state.

- **Fairbanks Campus Doors, Hardware, and Security Renewal:** The Fairbanks Campus has over 9,000 doors secured with a keying system that is 20-years beyond its patented expiration date. The antiquated keying system severely compromises building security and leaves facilities vulnerable to break-ins, property theft, and vandalism. Nearly half of the campus doors have outdated and broken hardware, and oftentimes the door is also in need of replacement. Many of the exterior and emergency exit doors do not meet current fire codes or ADA regulations. Over a period of three years, UAF developed a multi-phased plan to complete a door hardware inventory, design and purchase a new keying system, establish a robust key issue policy, and begin replacing doors and door hardware. Electronic locks are installed on exterior doors to allow for fast lock-down of a building whether at the end of the normal business day or during a violent intruder event. The next phase of renewal will replace exterior doors and/or hardware at the Patty Center, Chapman Building, Lola Tilly Building, Elvey Building, and O'Neill Building. Interior work will focus on implementation of the keying system across all campus facilities as well as replacement of fire exit doors in Duckering, Gruening, and Bunnell.

- **Campus Wide Fire Alarm Replacement for End of Life:** Approx. 25 fire alarm panels on the Fairbanks Campus have reached their end of life and the manufacturer is no longer supporting them. Panel failures are causing buildings to be closed or post a fire watch. In the last year four panels failed and parts could not be located for several months. A comprehensive plan has been created to replace panels in small buildings, reserving those parts for older, larger buildings that have a higher cost to update. In FY20, funding completed replacement in Chapman, Brooks, Bunnell, Constitution, and West Ridge Research Building (WRRB). The next facilities to replace are Gruening, Duckering, Rasmuson, and Signers.

**UAF Fairbanks Campus Building Interior & Systems Renewal**

(GF: $20,050.0, NGF: $0.0, Total: $20,050.0)

Many of the buildings at UAF were constructed in the 1960s and 1970s and the original building interiors and systems are in very poor to failing condition, no longer adequate for current enrollment demands, and require replacement or upgrading. The systems, including finishes, plumbing, ventilation, heating, lighting, and electrical, are expensive to operate due to their low efficiencies and lack of replacement parts and are no longer in compliance with current life safety codes. Failing systems are causing partial building closures across campus, increasing operating cost for temporary space or in some cases displacing students to off-campus housing. In some cases, these deteriorating systems have caused class and research cancellation and eroded UAF's ability to obtain new grants and initiatives.

Replacement of these systems will allow for increased energy efficiencies and better environmental control throughout UAF's facilities. Projects in this category lower operational cost by upgrading or replacing old building systems with current up-to-date technology where there is greater payback. The work will also renew aging, highly-used components including sanitation improvements, securing aging interior classrooms and labs and addressing building code/life safety issues. The

work will reduce the backlog of deferred renewal and increase the useful life of these facilities. Besides improving building functionality, renewed finishes, doors, restrooms, and classrooms create a better impression for current and future students and the public. Modern, attractive facilities have a direct correlation to student enrollment and success.

The building interior and systems renewal projects address building finishes, plumbing, electrical and heating/ventilation systems to increase efficiency, reduce maintenance costs, and improve the living environment of highly used buildings. The projects also reduce building code deficiencies, a growing deferred renewal backlog, and address life safety items related to building interior finishes such as doors, hardware, flooring, and ceilings. Due to the age of UAF buildings, most projects have asbestos removal aspects and require upgrades to current codes and standards. The work performed within these projects preserves current facilities, extends the life of systems and reduces risk of failure that would impact program delivery.

- **Bartlett Hall and Moore Hall Plumbing Replacement:** Bartlett and Moore Hall are the largest dormitories, housing 650 UAF undergraduate and graduate students throughout the academic year. The sanitary sewer lines within the entire building are at risk of imminent total system failure, requiring UAF to close the halls with no notice should it fail. Over the last 4 years, plumbing supporting the restrooms has failed three to four times a year, leaving portions of the building without sanitation facilities. The pipe has degraded over the life of the 50-year old buildings, leaving large holes in branch and main lines. The damage has led to leaks of raw sewage into the occupied portions of the building. The project will also address major code citations, provide ADA compliant facilities, and reduce maintenance and custodial cost of the half-century old fixtures and finishes. Work will consist of demolition of the 8 floors of stacked restrooms back to structure, rebuilding the plumbing, electrical, and ventilation systems, and reconstructing compliant facilities on each floor. The project has been partially funded to begin the design and engineering phases with the goal of being ready for construction in FY22 thru FY23.

- **Bunnell Ground Level Refresh:** The 60-year old Bunnell Building is highly utilized for academic programs, classrooms, and UAF Office of Information Technology. The ground level corridor is well traveled and the finishes are showing their extended age. The project will perform a complete refresh of dated and worn finishes in the main corridor. It will also replace corridor doors, ceilings/lights, upgrade electric and information technology (IT) as needed. During the project, work will address two major code citations by renovating exit pathways of the two north stair towers to lead directly to outside and install fire doors at the elevator lobbies.

- **Skarland Hall Elevator Modernization**: Installed in 1963 the highly used elevator has noticeable issues with the car travelling vertically (shaft appears to be listing to one side) and has several code deficiencies. The top of hoist way at the penthouse entrance is built of combustible material. Modernization and upgrades will include a new elevator and associated appurtenances, new fire doors and renovation of the existing penthouse entrance for code compliant. The design was completed in 2020 and the project is bid ready for 2021.

**UAF Building Envelope & Roof Systems Renewal**

(GF: $1,595.0, NGF: $0.0, Total: $1,595.0)

The hallmark of a sustainable building is a solid foundation underfoot and a dry envelope overhead. Building envelope elements such as roofs, entry doors, windows, and exterior cladding for selected buildings at UAF are in poor to failing condition. Systematic building envelope replacement and improvement is needed to prevent leaks, failures, and other disruptive damage to building assets and occupants. Renewal projects help prevent programmatic function interruptions from emergency repairs, lower on-going maintenance cost, and increase energy-efficiency through improved thermal and moisture protection. The work preserves existing assets for the continuation of program and mission delivery.

Projects within this category include roof repairs and replacements, doors, windows, vapor barriers, exterior painting, siding, weatherization, insulation, foundations, and other building envelope issues. High performance building envelopes are critical to protect a building's interior finishes and structural integrity, and increase energy efficiency. The roofing projects are an ongoing replacement of roofs that have reached the end of their useful and protective life. Many windows and exterior entry storefronts are mostly original to the buildings on campus, with older construction technology and poor insulation

values, or have deteriorated from constant high volume use. Exterior door replacement work improves the ability to lock down buildings, enhancing safety and security of faculty, staff and students, improving ADA access and emergency egress.

- **Constitution Hall Exterior Windows:** Constitution Hall is a highly visible historic facility located in the core of the campus, serving student support functions such as the post office, bookstore, Alumni Relations, and the Department of Equity and Compliance. Many features of the building, including the single pane windows, are original to the 1955 facility. The windows have very low insulation value, leak cold air, and are laden with lead paint and asbestos. Replacement windows will mimic the current look to maintain the historic perspective but provide tremendous improvements in performance. The degraded windows directly impact the University's ability to continue to preserve this asset not only for the historical context but, more importantly, to continue mission delivery to the students. Being a hub of support for students, the facility directly influences recruitment and retention of students. Replacing the windows will immediately improve the quality of life inside the facility, reduce energy usage, and remove potential hazards of asbestos and lead within the occupied spaces of the facility.

- **Howard Cutler Apt. Roofing:** The Cutler Apartments are the largest and most popular apartment style housing offered on the Fairbanks Campus. Over multiple years, the roof systems have failed and relied on patches to continue to allow occupancy. Three phases have been completed since 2016 leaving three more blocks to complete. The project will remove the failed roofs and rotted substrate and rebuild the systems with additional insulation and vapor barrier and a roof that has a long warranty.

**UAF Campus Infrastructure & Exterior Renewal**
(GF: $4,405.0, NGF: $0.0, Total: $4,405.0)
Without robust and functioning infrastructure, program delivery is severely hampered and student health and welfare is adversely affected. Buildings and their occupants require basic infrastructure such as sanitary sewers, electrical power, drinking water, and connectivity via pedestrian pathways to be fully functional and serve the academic and research needs of campus. The severe Fairbanks climate and years of operation beyond the functional age of these systems have taken a toll on the campus support systems and now pose a significant hazard to the students, faculty, staff, and community. These projects will address infrastructures that are at risk of imminent failure and in urgent need of replacement in order to safely support the UAF campus.

The campus infrastructure request includes high priority sewer line replacements which are critical to maintaining healthy and sanitary student housing, classrooms, laboratories, and other campus facilities. The work will address major code deficiencies and reduce maintenance callouts for these existing aging systems. The request also includes critical district heat line repairs where piping has reached its useful life and recent damage is causing a reduction in system capacity. A final phase of electrical line replacement which improves reliability to several campus facilities is also included in this request. The improvements include repairs to pedestrian access paths by targeted replacement of failing walkways, ADA ramps, and stairs.

- **Fairbanks Campus Wide Sanitary and Storm Sewer Upgrades Hess to North Chandalar, Whittaker (Fire Station) and Wickersham:** The existing sanitary sewer line between Hess Village family housing and the main sewer line on the east side of campus has severely degraded and failed multiple times in the last 3 years. The existing system consists of a large lift station that requires substantial annual repairs and multiple different types of pipe, including wood stave. The project will install a new gravity sewer main from the large housing complex to an existing main line on the east side of campus. In addition, construction work will also disconnect storm drains from the sanitary sewer at the Whittaker Building and Wickersham Hall to address code citations, reduce utility cost, and meet the requirements of the local utility.

- **West Ridge District Chilled Water:** Five major research and teaching buildings and the University of Alaska Office of Information Technology Data Center (which serves all of UA's IT needs as well as State of Alaska

emergency response functions) utilize approximately 15% of campus power for conditioning spaces and data equipment rooms. Further, the chiller system at the UA Data Center has reached the end of its useful life and parts are no longer available to repair the chiller units, leaving the data center vulnerable to failure. To eliminate this exorbitant quantity of electrical use, reduce campus operating cost significantly, and ensure the continuity of critical data center operations, the buildings must be connected to an existing district chiller water loop fed from an existing steam absorption chiller at the Murie Life Sciences Center. FY22 funding will extend the loop to the most critical needs at the Butrovich Building and future phases will expand to the remaining facilities.

**UAF Community and Technical College Renewal**
(GF: $300.0, NGF: $0.0, Total: $300.0)
UAF's Community and Technical College provide high-demand work-force development degrees and training programs across the Interior of Alaska. Programs within the college such as emergency services training and aviation plant and frame mechanic certification quickly prepare students for immediate placement in skilled trades. The college's facilities are mostly comprised of aged buildings given to the University and repurposed for these programs. Deferred maintenance was transferred with most of these assets and the facilities suffer from functional obsolescence.

- **University Park Restroom Renovation:** The restrooms at the Old University Park facility are of 1957 vintage, installed when the building was an elementary school. The restrooms are in poor condition and do not provide proper sanitation facilities for the users. The project will completely gut and renovate the restrooms to bring them up to current standards and code and make them fully operational. The upgrade will replace plumbing, water closets, sinks, old convection heating terminal units, tiles, and restroom accessories and create ADA accessible stalls.

<u>UAF Community Campuses</u>
**UAF Rural and Community Campus Renewal**
(GF: $2,200.0, NGF: $0.0, Total: $2,200.0)
UAF's College of Rural and Community Development (CRCD) campus sites span Alaska with facilities in Fairbanks, Nome, Bethel, Dillingham, and Kotzebue. These sites provide valuable educational and cultural resources to their local and surrounding communities. Major renewal of the buildings has been a consistent effort over the last several years utilizing capital, operating, and grant funding. Despite these efforts, deferred renewal and code correction work is still required to maintain the critically important campuses.

The remote locations of the CRCD campuses requires UAF to prioritize regulatory compliance, distance education, energy efficiency and conservation projects. The priority projects for rural campuses are fire alarm upgrades and fuel tank compliance. Replacement of these systems supports building occupancy and program delivery continuity. Systematic, energy efficient building improvements use higher-grade, durable construction materials that reduce operational and maintenance costs. This also reduces the frequency of building system failures that are especially costly due to emergency shipping of both labor and material.

- **CRCD Fire Alarm Replacement for End of Life:** Approx. 10 fire alarm panels at the rural campus sites have reached their end of life and the manufacturer is no longer supporting them. Maintaining alarm systems in full operation is required for building occupancy and mission delivery. The next facilities to replace are Margaret Wood Building, Sackett Hall, and the Yup'ik Museum, Library, and Cultural Center.

- **Kuskokwim Campus Vocational Education Center Electrical Code Compliance**: Replace the main power distribution panel in the Voc-Tech Center to remove a major code violation for working clearance.

- **CRCD Campus Wide Fuel Tank Compliance:** Fix code deficiencies associated with the fuel tanks and piping for CRCD facilities statewide.

UAS Main & Community Campuses

**UAS Safety Improvements and Regulatory Compliance**

(GF: $1,585.0, NGF: $0.0, Total: $1,585.0)

Safety of our Students, Staff, and Faculty is of great importance to UAS and we strive to keep our facilities in compliance with current building codes, health mandates and safety standards. Regulatory agencies frequently update their requirements as investigations find safer ways to build buildings and as new technologies prove themselves to increase the health and safety of building occupants. Building owners are allowed to postpone implementing many of these regulatory changes until the next major building renovation. However, some of them are mandated to be implemented by a specified date. In addition, UAS is always looking for ways to improve campus safety regardless of regulatory mandates. Many of the fire alarm systems on campus are old and the manufacturer no longer makes replacement parts. Southeast Alaska communities are relatively safe compared to larger communities. However, theft from vehicles in parking lots, unauthorized access to campus and publicly aware community make for frequent requests for improving campus safety.

UAS has approximately 25 individual projects under Safety Improvements and Regulatory Compliance. This includes projects such as replacing fire alarm panels, installing electronic door locks, improving accessibility, adding snow coverings over exterior stairways and installing more security cameras. Four specific projects in this category include:

- Pedestrian Guardrail Replacement – Phase 2: Existing pedestrian guardrails along the outside second story walkways fronting Auke Lake are made from wood, is expensive to paint, has a large flat top that is always covered in bird droppings and the openings do not meet current building codes. This project will install new railing designed to meet current safety codes to improve the safety of UAS students, staff and faculty. They will be constructed of stainless steel requiring much lower maintenance costs. Phase 1 replaced about half of the existing railings in 2018. The design of Phase II is using the same design details and can be bid and constructed as soon as funding becomes available.
- Technical Education Center (TEC) Welding Lab Fire Alarm Replacement: TEC welding lab fire alarm panel is no longer supported and if an alarm component fails there will be no way to repair the fire alarm system. UAS welding classes and program will be significantly impacted if the fire alarm fails before it is replaced. This project will replace the fire alarm system. This project can be bid and constructed in this fiscal year.
- Mourant Emergency Notification & Acoustic Improvements: The acoustics in the Mourant Cafeteria are very bad making it difficult to hear the person talking across the table, someone making announcements at an event and it is near impossible to hear the UAS emergency notification phone intercom messages. This project will install a sound system that is connected to UAS Cisco Infromacast system that can transmit emergency messages and will provide high quality speech reinforcement for presentations and group meetings. This project can be designed, bid and constructed in the current fiscal year.
- Ketchikan (KTN) – Paul Building ADA Entry: The main entrance to Paul is a ramp is steeper than allowed by ADA Accessibility Guidelines (ADAAG). This project will regrade the entry area and install an ADA ramp with handrails. This project can be designed, bid and constructed in the current fiscal year.

**UAS Building Envelope & Roof Systems**

(GF: $675.0, NGF: $0.0, Total: $675.0)

Building Envelope and Roof Systems provides our Students, Staff, Faculty and building systems the protection from wind, rain, snow and cold. When a building envelope fails, everything inside the building is at risk of damage, decay and can make the building unsafe and unusable. Building envelopes last 30-50 years depending on

the construction type and require periodic cleaning, repainting, and resealing. New roof systems last 40-60 years and besides periodic cleaning need little maintenance. Building renovations over the past 15 years have improved the building envelopes on the Juneau campus. However, Sitka and Ketchikan campus building envelopes are more than 40 years old, showing signs of compromise and need to be replaced.

UAS has approximately 21 individual projects under Building Envelope and Roof Systems. These projects consist of replacing roof systems, replacing windows, replacing skylights, painting buildings and replacing building siding. Two specific projects in this category include:

- Novatney Roof Replacement: The Novatney building roofing system has reached the end of its useful life and needs to be replaced. This project will replace the existing roof system with a new ethylene propylene diene monomer (EPDM) roof system with a 40-year life. If the roof is replaced before it substantially fails, the work can be completed without disrupting the programs in the building. UAS Admissions, Registrar, Financial Aid, Student Accounts, Vice Chancellor of Enrollment Management and Student Affairs are all housed in the Novatney Building. All of these UAS programs would be adversely impacted if the roof system fails and the building could experience substantial damage to the interior if the roofing system fails. Design for this project is complete and can be bid and constructed during this fiscal year. UAS has already received $200,000 from FY20 DM appropriation. $300,000 is required to complete funding and bid the project.
- Ketchikan (KTN) – Paul Deck Mansards Replacement: The Paul Building has a Mansard type roof system that was constructed using a cement bonded siding material. This material has proven not to be able to withstand the frequent precipitation experienced in Ketchikan Alaska and is now falling apart. This project will replace the siding/roofing material with a Bermuda metal material that is more resistant to constant rain. This project can be designed, bid and constructed in the current fiscal year.

**UAS Exterior Infrastructure**

(GF: $665.0, NGF: $0.0, Total: $665.0)

Exterior Infrastructure consists of all of UAS facilities that located outside of a building including, road, parking lots, sidewalks, landscaping and distribution systems for water, wastewater, communication and power. There are several areas on campus where the exterior infrastructure is showing signs of its age, increasing risk of failure and reducing safety of the campus community.

UAS has approximately 36 individual projects under Exterior Infrastructure. These projects consist of repairing or replacing asphalt parking lots, concrete sidewalks, roads and street lighting. It also includes installing or repairing ADA access ways, covered stairways. Four specific projects in this category include:

- Ketchikan (KTN) – Ziegler Plaza Concrete Replacement: Concrete on the plaza installed in 2011 is deteriorating prematurely, spalling and yielding a rough, uneven surface. This creates slip and trip safety hazards to students, staff and faculty entering the building. This project will remove and replace the concrete walkways and can be bid and constructed in the current fiscal year.
- Housing Lodge Fuel Tank Replacement: Housing Lodge fuel tank is 35 years old, supplies the Lodge's emergency generator and has reached the end of its expected life. Facilities Services recommends replacing this tank before it starts leaking and creating an environmental liability for the University. This project will replace the existing tank with a new double wall tank with interstitial monitoring system meeting current environmental codes. This project can be bid and constructed in the current fiscal year.
- Sitka (SIT) – Building Tech Lab Exit Canopy: Currently snow slides off the roof and falls in front of a building emergency exit. This presents a safety hazard to students, staff and faculty if maintenance crews are not able to remove the snow before they need to use the emergency exit. This project will construct a

canopy over the exit door area that will shed the roof snow away from the exit door. This project can be bid and constructed in the current fiscal year.

- Campus Housing Drainage Improvements: There are several places around the housing apartments that drainage features are inadequate resulting in water flowing across sidewalks and freezing. Grounds crew spend a lot of time shoveling and sanding the sidewalks but is often not enough to prevent students from slipping on the ice. This project will install drainage pipes, ditches French drains and other drainage features to keep the water off the sidewalks. This project can be designed, bid and constructed in the current fiscal year

**UAS Interior Systems**

(GF: $175.0, NGF: $0.0, Total: $175.0)

Building Systems makes the interiors of our facilities a pleasant and safe place to study, work and learn. Heating systems keep the buildings warm in the winter. Ventilation systems bring fresh outside air into the building and keep air circulating thru the building to prevent the growth of mold and mildew. Lighting, communication, water and wastewater systems keep the building occupants safe and productive. Many of UAS buildings are more than 40 years old. While some of the interior systems have been updated, there are still many interior systems that have exceeded their design life and need to be replaced with new and more efficient systems.

UAS has approximately 25 individual projects under Interior Systems. These projects consist of replacing heating systems, building automation systems, lighting systems, elevators and emergency generators. It also includes replacing carpeting, flooring. Two specific projects in this category include:

- Sitka (SIT) – Replace Light Switches in Health Sciences: Lighting switches in the health sciences areas of the facility have mostly failed. UAS hired an electrical design consultant to come up with a repair. The consultant recommended the complete replacement of all the switches in the Health Science area. This project will complete the electrical design and replace all of the switches. This project can be designed, bid and constructed in the current fiscal year.
- Ketchikan (KTN) – Paul Elevator Replacement: The elevator in the Paul building is 47 years old, the manufacturer no longer makes replacement parts and needs to be replaced. The elevator has been out of service for extended periods over the past few years. This creates a hardship on students, staff and faculty that have mobility challenges. This project will replace the existing elevator. This project can be designed, bid and encumbered in the current fiscal year and construction would take 18 months.

Statewide

**SWS Butrovich Lighting Efficiency Upgrades**

(GF: $200.0, NGF: $0.0, Total: $200.0)

The Butrovich building was constructed in 1988 and is at a point where many of its building components are reaching their life cycle end. Over the next five to ten years many of the main mechanical systems will come due for replacement or refurbishing.

Lighting upgrades, including Lutron controls and re-ballast parabolic lighting fixtures, are needed in the whole building - Approx. 800 fixtures. Ballast are at end of life. Replace artwork lighting fixtures with LEDs.

# Capital Budget
# References

FY23-FY31 Capital Budget Request Project Descriptions

Facilities Deferred Maintenance (DM) and Renewal and Repurposing (R&R)
FY23-FY24 (GF: $100,000.0, NGF: $0.0, Total: $100,000.0)
FY25-FY26 (GF: $100,000.0, NGF: $0.0, Total: $100,000.0)
FY27-FY31 (GF: $250,000.0, NGF: $0.0, Total: $250,000.0)

The University of Alaska (UA) is responsible for maintaining facilities and infrastructure across the state. UA continues to be good stewards of these valuable assets, while exploring ways to reduce its facilities footprint and long-term operating costs. UA has over 400 facilities totaling 8.3 million gross square feet, with an average age of 35 years, an inflation-adjusted value of $4.7 billion, and a deferred maintenance/renewal & repurposing (DM/R&R) backlog in excess of $1.4 billion.

Due to many years of unfunded deferral of critical projects, there is an increasing risk and evidence of building closures. Last academic year, UAA had two separate infrastructure failures in two buildings requiring evacuation and rescheduling for over 60 class sections impacting campus operations for two weeks while emergency repairs were made. Similarly, UAF has had to close four floors of restrooms in Bartlett Hall over the last three semesters to make emergency plumbing repairs. These numerous unplanned closures cause significant hardship on student learning, they are expensive, and there is associated lost productivity of all university students, faculty and staff.

Major Maintenance and Renewal Projects

**UAA Campus Space Reallocation/Consolidation**

FY23-FY24 (GF: $5,000.0, NGF: $0.0, Total: $5,000.0)
FY25-FY26 (GF: $2,000.0, NGF: $0.0, Total: $2,000.0)
As the state of Alaska's budget crisis has unfolded and the university has undertaken programmatic and administrative reviews, the obvious way to save costs is to reduce the physical footprint of campus facilities from which we operate. This project consolidates programs that are currently housed in off campus facilities onto our main campus. Consolidating services in the campus core zone allows for improved access for students and streamlines all of UAA operations. There is no vacant space on campus, however, through shared space initiatives, UAA can achieve additional space consolidation. This will lower operating costs and create revenue opportunities through lease or sale of off campus building assets.

**UAA Health Lab and Workforce Demand Renovation and P3**

FY23-FY24 (GF: $2,830.0, NGF: $0.0, Total: $2,830.0)
FY25-FY26 (GF: $770.0, NGF: $0.0, Total: $770.0)
This project replaces the former CIP project titled HSB II (UAA-00096, $141.5M). Due to severe budget cuts, College of Health (COH) commissioned a study involving identifying the barriers for increasing number of COH graduates related to the increasing need for Healthcare professionals in Alaska. This project provides capital improvements to renovate and upgrade existing buildings to remove those barriers and increase programmatic capacity.

**UAA Exterior Safe Access and Circulation Improvements**

FY23-FY24 (GF: $500.0, NGF: $0.0, Total: $500.0)
FY25-FY26 (GF: $1,000.0, NGF: $0.0, Total: $1,000.0)
FY27-FY31 (GF: $500.0, NGF: $0.0, Total: $500.0)
This project will improve safe access and circulation for non-motorized and motorized needs through Anchorage main campus. The 2013 Master Plan identified a prioritized need to develop this project in response to rapid growth within the UMED district and corresponding traffic during peak hours. This project will create a vision for that growth to occur in a coordinated and thoughtful manner with input from stakeholders and community partners. With increases in traffic to the growing UMED district coupled with decisions to relocate critical UAA services to main campus - including Seawolf Hockey and Enrollment Services Relocation. Better identifying safe routes for motorized and non-motorized traffic is increasingly vital. This project will assist in peak traffic congestion and improve safety for all campus users.

**UAA Welcome Center and Student Services P3**

FY23-FY24 (GF: $5,000.0, NGF: $0.0, Total: $5,000.0)

The existing facilities in the campus core are in critical state for failure due to existing aging infrastructure. This project will leverage opportunities for Public Private Partnerships to renovate and rebuild the infrastructure creating a new space providing improved services to students. In accordance with the UAA Master Plan 2013, the Student Union and Sports Complex is in need of major renewal and replacement. There is $30.8M in deferred maintenance and there is $1.5M in annual recurring operations and maintenance at this facility. According to the masterplan, this building is located in the campus core zone. The campus core zone is located next to Chester Creek and is surrounded entirely by adjacent campus academic zones. Due to this proximity, this zone is the primary hub and connector for the campus as a whole and serves as a recreational and extra-curricular hub for students. This zone is the heart of UAA. It is a place of gathering and primary interface between academics, student life and visitors.

**UAA Sports Complex Capacity Improvements**

FY23-FY24 (GF: $3,000.0, NGF: $0.0, Total: $3,000.0)
FY25-FY26 (GF: $11,000.0, NGF: $0.0, Total: $11,000.0)
UAA's Sports Complex is multi-use facility constructed in 1977. It houses a basketball court, swimming pool, intramural athletic offices, and Student Affairs department, along with UAA men's hockey training and locker room facilities, practice rink, and hockey administrative offices. The ice rink currently provides retractable bleacher seating for approximately 800 spectators. The Sports Complex sits adjacent to the Student Union building to the east, the campus pedestrian spine and Rasmuson Hall to the west, parking lots to the south and northwest, and wetlands and a code-required fire lane to the north – all of which serve as constraints to the expandability of the Sports Complex. Inside the facility, recently renovated and improved hockey facilities sit adjacent to the rink; the main campus pedestrian spine bisects the Sports Complex on the main concourse level in the east-west direction. These interior features serve as internal constraints to the reconfiguration and renovation of existing space. Per WCHA guidance provided to UAA, and to match the minimum capacity of the smallest current WCHA facility, spectator capacity for regulation conference games should be 2500 minimum. This project expands the seating capacity from 800 to approximately 2290. An increase in occupant load and expansion triggers the need for additional restrooms, concessions, entrance/exit locations, and modification to building systems.

**UAF Campus Wide Footprint Reduction and Modernization: Rasmuson Student Success Center**

FY23-FY24 (GF: $9,500.0, NGF: $0.0, Total: $9,500.0)

Modernize and repurpose underutilized space in the Rasmuson Library to centralize and modernize student services currently spread across campus. Create student success centers with easy access to advising, tutoring, financial aid, veteran's services, etc. The project will have secondary affects in changing space assignments in Eielson and Signers Hall and further reducing off-campus leases by UAF units.

**UAF Seward Marine Center Research Vessel Infrastructure**

FY23-FY24 (GF: $3,700.0, NGF: $0.0, Total: $3,700.0)

Renewal, demo, and deferred maintenance work on shore side buildings that support the R/V Sikuliaq and other vessel operations. Work will include Hood lab renovations, demolition or repurposing of other small facilities. The work also includes restoration of the failing sea wall. Work would supplement an NSF Grant that will replace the dock and associated ship-support facilities.

**UAF Arctic Health Research Center Deferred Maintenance & Renewal and Repurpose**

FY25-FY26 (GF: $64,000.0, NGF: $0.0, Total: $64,000.0)
Major facility upgrade to the Arctic Health Building including code corrections, renovation of functionally obsolete space and equipment, and building mechanical and electrical systems.

**UAF Fine Arts: Theater Wing Major Renewal**

FY25-FY26 (GF: $34,000.0, NGF: $0.0, Total: $34,000.0)

The project is a major renovation of the Salisbury Theater. It will address major building code and accessibility deficiencies, create new, smaller learning spaces appropriate for today's teaching methods and replace worn out mechanical and electrical equipment. The resulting variety of smaller learning and convening spaces will serve all of UAF and not just the Theater Department and College of Liberal Arts (CLA). The remodel will create a nominal 200 to 250-seat smart auditorium, and three 1,000 SF to 2,000 SF open, level-floor rooms useful for meeting, classroom or movement activities.

**UAS Natural Science Lab Consolidation**

FY23-FY24 (GF: $950.0, NGF: $0.0, Total: $950.0)

UAS natural science lab is located off campus at the Natural Science Research Lab (NSRL) building. This building is located in an industrial part of Juneau, was not designed for academic laboratory research and limits how the University can use the space. This project will relocate UAS laboratory programs in the NSRL building to the Anderson Building on campus and next to the new Auke Bay Natural Science Building. Which will bring all of our Natural Sciences students, faculty and staff into one area for better continuity, and economy and synergy. This will enable UAS to sell the NSRL building resulting in reducing building space and lowering annual operation and maintenance costs.

The NSRL property has inadequate parking to meet current zoning codes. UAS currently leases parking spaces on nearby private property which will expire in 2020. This project will purchase adjacent land to provide all of the zoning required parking for the property.

**UAS Welding Lab Replacement - Juneau**

FY23-FY24 (GF: $4,500.0, NGF: $0.0, Total: $4,500.0)

The Welding Lab was purchased and remodeled in 1980. The roof was replaced in 1994, but other systems and components have not been upgraded and have reached the end of their service lives.

The building is very poorly insulated resulting in building heating costs being one of the most expensive on campus. The roofing system is past its warranty period and sprung another leak in October 2019. The electrostatic smoke arrestor for the welding booths is antiquated and requires specific sequencing methods to get it to come on. HVAC technicians says it could stop working any time. The fire alarm system is no longer supported by the manufacturer. The fire alarm service tech said that if we have one component failure now that he will not be able to get parts to make a repair. This will leave the building without fire alarm protection. The building structure does not meet current design standards for snow, wind and earthquake forces. The building is located in the west center of the property, prohibiting UAS from developing other more productive use of this waterfront property.

In 2018 a consultant prepared a condition analysis with three building upgrade options.

1. Remodel the existing building to bring it up to current building codes.
2. Build a new building
3. Remodel the existing adjacent Technical Education Center to accommodate the welding lab.

All three options cost basically the same with their recommendation to add a new section onto the existing TEC building.

This project will remodel the existing TEC building to include welding stations, work bays, overhead crane, supporting electrical, HVAC and mechanical systems. The old welding lab building will be demolished and the space opened up to allow for future development of the waterfront. This project will reduce the universities overall building area and associated operations and maintenance costs. UAS may then investigate extending additional leases of the waterfront space to increase revenues to the university system.

**UAS Egan Library / Cyril George Indigenous Knowledge Center (CGiKC)**

FY23-FY24 (GF: $0.0, NGF: $300.0, Total: $300.0)
FY25-FY26 (GF: $0.0, NGF: $600.0, Total: $600.0)
FY27-FY31 (GF: $0.0, NGF: $1,600.0, Total: $1,600.0)

Indigenous languages of Southeast Alaska - Tlingit, Haida and Tsimshian are critically endangered with fewer than 200 fluent speakers. This project aims to create an Indigenous Knowledge Center to:

1) Centralize and promote the quality and value of Alaska Native/Indigenous knowledge,
2) Develop an Elders and Indigenous Scholars in Residence program;
3) Enhance access and delivery of hybrid courses in AK Native Languages to preserve the continuity of endangered indigenous languages.

The creation of the Cyril George Indigenous Knowledge Center (CGIKC) will focus around a primary architectural space, created sympathetically within the existing structure of the Egan Library. It will incorporate stacks for the primary book and audio/video collection, as well as provide a central socialization/conversation space and designated display space for Northwest Coast Art. This space will have the capacity for hosting and broadcasting small events (~30 seats) and function as the conduit or entry to other associated spaces, listed following, so that overall cohesion and identify to the center is clearly established.

Design concepts for the facilities include the following components:

1. Language Classroom and related spaces. A mid-size (20-30 seats) classroom for language instruction purposes fully outfitted to support a sophisticated blended/hybrid environment for study of Alaska Native Languages. An adjacent gathering space with kitchen for cultural food preparation, event staging, storage, pantry, and a small break area with table.
2. Instructional Technology Storage to provide a secure space for electronic and media equipment specific to language instruction.
3. Private Audio/study Labs. Two small spaces, acoustically separated from adjoining spaces, but configured to allow visual control and connectivity to be used for language and oral history recording as well as for work with Elders and students.

<u>New Construction - Academic Facilities</u>

**UAF Fire and Emergency Services Training and Education Facility**

FY23-FY24 (GF: $40,560.0, NGF: $0.0, Total: $40,560.0)

The proposed Fire and Emergency Services Training & Education Facility will provide space to meet the current demand and future growth of the emergency services programs and continue to fulfill the university's missions and goals of high demand workforce development in emergency services. The replacement facility is envisioned as a living laboratory for student emergency responders; attending classes and labs adjacent to a fully functional emergency services station. The facility will contain apparatus bays and support spaces for fire and EMS, firefighter/medic living quarters for on-duty members, and training labs and classrooms for emergency services. The current facilities are over 50 years old, are significantly undersized, and will fail in a design level earthquake. The facilities have a substantial backlog of deferred renewal and the cost to address these items ($25 million) is nearly equal to the current replacement value ($30 million).

**UAF Troth Yeddha'/Indigenous Studies Center: Park & Building**

FY23-FY24 (GF: $5,000.0, NGF: $24,000.0, Total: $29,000.0)
FY25-FY26 (GF: $10,000.0, NGF: $0.0, Total: $10,000.0)

For many years, UAF and the Alaska Native communities across the state have envisioned a place to commemorate and acknowledge Alaska Native peoples on the UAF campus. Moreover, the university is attended by increasing numbers of indigenous students who have continually expressed interest in having a touchstone campus location that is reflective of their peoples' culture and traditions. The project will build an international Indigenous Studies Center on the Troth Yeddha' land east of the UAF Museum of the North that will encompass a state of the art research, learning and cultural activities facility and a surrounding park. A total of $1 million in private gifts was received in FY19.

**UAF Community & Technical College (CTC) Aviation/Hangar Addition**

FY25-FY26 (GF: $13,000.0, NGF: $0.0, Total: $13,000.0)

The UAF CTC Aviation Program is housed in a small hangar purchased in 2012. The facility is undersized for program offerings and enrollment. Construct an 18,000 square foot addition to the CTC Hangar to support the growing aviation program.

**UAF Kuskokwim Campus Yup'ik Cultural Learning Center Expansion**

FY25-FY26 (GF: $7,200.0, NGF: $0.0, Total: $7,200.0)

The UAF Kuskokwim Campus (KUC) envisions a 3,300 square foot expansion onto the front of this facility. Half would be a library expansion and the remaining half would be for a gift shop, offices, and conference room. This expansion would promote the university consortium collection.

New Construction - Research Facilities

**UAF Science, Teaching & Research Building**

FY25-FY26 (GF: $3,000.0, NGF: $0.0, Total: $3,000.0)
FY27-FY31 (GF: $97,000.0, NGF: $0.0, Total: $97,000.0)

This project will construct approximately 100,000 square feet of new research and academic laboratory and classroom space to fill the critical needs of Fisheries and Ocean Sciences, Natural Resources, and the UA Museum of the North. The facility will be constructed with labs, offices, classrooms and required infrastructure. Initial funding will provide concept designs and estimates. The building will replace laboratory space in out-of-date buildings that cannot serve modern teaching and research in these disciplines. The project will also substantially reduce the deferred maintenance backlog in these existing buildings (O'Neill, Irving 1 and 2, and Arctic Health Research Building and allow for the removal of one of these facilities (Irving 2) from UAF's Facility Inventory.

**UAF Toolik Research Field Station: Classroom**

FY23-FY24 (GF: $0.0, NGF: $3,000.0, Total: $3,000.0)

Toolik Field Station (TFS) is a world renowned research facility with hundreds of scientific researchers in residence during the busy summer season. None of the existing facilities are suitable for use as a classroom and the addition of a classroom will allow seminars, small conferences and undergraduate field classes at TFS. This will add educational elements to the TFS mission and strengthen both the graduate and undergraduate research programs at UAF.

New Construction - Student Life (Housing), Support, and Other Facilities

**UAF Student Success: Housing Revitalization**

FY23-FY24 (GF: $82,500.0, NGF: $0.0, Total: $82,500.0)

New, modern residence halls are needed to replace facilities that were built in the 1960's and have aged-out. Today's students are expecting clean, affordable halls on campus that offer both private and community spaces, and that enhance their learning outside of the classroom. Phase 1 funding will complete design work through design development. Approximately 400 beds in four existing dormitories will be taken offline and those buildings demolished as part of this project, significantly reducing on-going maintenance costs and deferred renewal backlog.

**UAF Student Success: Athletics Consolidation to Campus**

FY23-FY24 (GF: $12,000.0, NGF: $0.0, Total: $12,000.0)
FY25-FY26 (GF: $48,000.0,NGF: $0.0, Total: $48,000.0)

This project will reconfigure the Patty Ice Rink, increase the seating capacity from 1,300 to 3,500, improve the locker-rooms for NCAA competition and local hockey events and provide Title IX required parity in the facility. The expansion will allow UAF to eliminate a major off-campus lease for the NCAA sanctioned sports team and increase opportunities for community outreach.

**UAF Student Success: Student Recreation Center Expansion**

FY25-FY26 (GF: $750.0, NGF: $0.0, Total: $750.0)
FY27-FY31 (GF: $12,000.0, NGF: $0.0, Total: $12,000.0)
This project will begin to alleviate the overcrowding and scheduling issues in the too small student recreation center. The current facility was built during substantially lower student enrollments. The expanded facility will provide interior recreation for Fairbanks students, staff, faculty and the community.

**UAF Student Success: Core Campus Parking Garage**

FY27-FY31 (GF: $30,000.0, NGF: $0.0, Total: $30,000.0)
The construction of an on-campus 1,100 space parking garage will provide consolidated parking, open up valuable land for future buildings, improve the appearance of the lower campus entry, and provide convenient, short-term parking for visitors, part-time students and events on campus. UAF will review financing and procurement methods, including P3 partnerships, to achieve the lowest cost/benefit rate per spot.

New Construction - Infrastructure

**UAF Seward Marine Center**

FY23-FY24 (GF: $0.0, NGF: $43,000.0, Total: $43,000.0)

The UAF Seward Marine Center is located at the head of Resurrection Bay, one of the primary docking facilities for visiting research vessels and home-port of the NSF-owned and UAF-operated Global Class R/V Sikuliaq, the only ice-capable research vessel in the University-National Oceanographic Laboratory System (UNOLS). Construction and renovation of modern forward looking sea and shore-side infrastructure is needed to support future Arctic Ocean observing, prediction and scientific breakthroughs. Project will provide construction of a new dock for year-round servicing/berthing of the R/V Sikuliaq, along with new warehouse and shop facilities constructed to directly support efficient and effective high-latitude maintenance, operations and research.

**UAS Strengthen Campus Security - Juneau, Sitka, Ketchikan**

FY23-FY24 (GF: $500.0, NGF: $0.0, Total: $500.0)

Crime rates in the United States are continuing to increase and Juneau is not exempt. In 2018 UAS had five rape offences, two burglary offences and 21 Liquor/Drug violations. University students, parents, staff and faculty are expecting the University to provide more active security measures on campus including cameras, electronic locks, panic buttons, security guards, safe rooms and specialized training. This project will include contracting with a professional security consultant to analyze the three UAS campuses, identify potential threats, investigate weaknesses, test existing security measures and then make recommendations on how to improve security on our campuses. This project will also install and implement the top security improvements recommended by the consultant. Which is anticipated to include more cameras and electronic locks.

Research for Alaska

**UAF Poker Flat Research Range (PFRR) Oil Spill Research Test Basin**

FY23-FY24 (GF: $750.0, potential NGF: $1,000.0, Total: $1,750.0)
This capital funding request is to provide for improvements to the Poker Flat Research Range Test Basin which is used by University of Alaska Fairbanks (UAF) AF investigators and the oil and gas industry to conduct research on oil spill mitigation techniques – especially oil spill on ice. In 2015 a series of successful experimental burns at the Test Basin were conducted as part of UAF/industry partnership. International Oil and Gas Producers Association funded research aimed at improving understanding of how herding agents can be used to mitigate oil spills. Unmanned aircraft were used to conduct the tests and monitor the results. Recent permanent closures of similar test basins around the U.S. have highlighted the importance of the PFRR Test Basin which is now poised to become the premier facility of its kind for both research and training for oil response and mitigation.

Research opportunities at UAF are driven by a combination of the researcher(s), facilities, and location in the Arctic or Subarctic. Often, it is the facilities that draw the researchers and the researchers' in-turn draw the funding for research projects. At UAF there are many such facilities including the Poker Flat Research Range, Alaska Satellite Facility, Toolik Lake Field Station, and the High-frequency Active Auroral Research Program. In order to attract sponsored

programs, these research facilities often need an injection of capital for a certain piece of equipment or upgrade to existing facilities that sponsors can't or won't fund. With a modest number of additions and modifications to its infrastructure, the Test Basin would become the premier test facility in the U.S. Its location, latitude, and open airspace are ideal for testing in a wide variety of climatic conditions.

**Scope**
Recently, researchers at the Geophysical Institute have been contacted by Oil and Gas Industry and federal regulating agencies sponsors to continue research projects at the PFRR Test Basin. There are currently two projects scheduled for Spring 2021 that include $300,000 of sponsored funding. The demand for this research is expected to increase and improvements to the Test Basin and its facilities will enhance industry participation. The experiments include the use of variety of in situ and remote sensing equipment that will be supplied by the sponsors. The Test Basin must provide facilities for experiment preparation, data collection, data analysis, cleaning, preparation, and hazmat handling. Experiment hardware booms and manipulators will be required. Researchers need a heated location to record and manage data as experiments will be conducted year-round with many being ice related. The current Basin depth is 3' which means water will freeze all the way to the bottom. There is a need to increase the depth of the Test Basin to allow experiments and observations below the ice.

The PFRR is a Federal Aviation Administration test range which allows for unmanned aerial systems operations. This is an important feature as it allows researchers to observe and collect data in a variety of ways. In the previous successful Basin Tests, ACUASI played a vital role for operations and observations. The remote location of the Test Basin at PFRR, 35 miles from the UAF campus, will allow for in situ burning.

**Collaboration**
The 2015 research was conducted with a collaboration between the Geophysical Institute and the Institute of Northern Engineering. Future projects are anticipated to continue this collaboration with expansion to include other UA campuses and disciplines. Much of the engineering infrastructure needed at the Test Basin could be designed, built and operated by UAF engineering students as part of their Capstone Project.

**UAF Alaska Roadmap for Nuclear Reactor Applications**
FY23-24 (GF: $700.0, potential NGF: $1,900.0, Total: $2,600.0)
FY25-26 (GF: $300.0, potential NGF: $0.0, Total: $300.0)
**Purpose**
This Capital funding request is designed to enable the Alaska Center for Energy and Power (ACEP) at the University of Alaska Fairbanks to engage with Alaskan stakeholders in the exploration of safe, affordable and impactful pathways for potential implementation of advanced nuclear reactors.

The advanced nuclear reactor industry is focused on developing systems that are sized to provide combined heat and power services on a scale well-aligned with the heat and power needs of multiple defense, industry, utility, and community sectors in Alaska. A roadmap is required to appropriately prioritize and sequence the related opportunities, identify needed risk mitigation activities specific to Alaska applications, and characterize key integration and implementation requirements. Near-term actions taken in alignment with the roadmap's guidance can gather critical information, mitigate key risks, and ensure maximum synergy with existing conventional energy systems.

The Alaska Center for Energy and Power has the technical acumen, Alaska stakeholder awareness, and industry access required to develop and launch implementation of the needed roadmap. The effort will incorporate insights from 2019/2020 Department of Energy and Department of Defense grants to the University of Alaska for preliminary analyses related to nuclear microreactor integration, and build on the foundation provided by the *Small Scale Modular Nuclear Power: An Option for Alaska?* study published in 2011 at the request of the Alaska legislature. In addition, future federal fiscal resources will be leveraged at up to a 4:1 ratio through availability of the state funding investment.

**Scope**
An integrated five-year effort is planned. The effort will be performed by ACEP researchers (faculty, undergraduate/graduate students, post-doc) with complementary (no state-of-Alaska funding) inputs from industry and the Department of Energy. Status briefings with supporting documentation will be made available to Alaska legislative

personnel on a quarterly basis.

Year 1. Roadmap Development ($300K) – ACEP will develop and publish materials complementary to those in the 2011 *Small Scale Modular Nuclear Power: An Option for Alaska?* study, focused on evolving trends that include the following topics:

- **Technology** – micro-reactors / small modular reactors, fuels, civilian and defense programs
- **Regulatory** – US, Canada
- **Siting** – regulatory evolution, exclusion zones, internet / communications, workforce, security, energy transmission / distribution infrastructure, etc.
- **Integration Technology Assessment** – technical and cost attributes for critical elements of integrated energy systems (energy storage, transmission/distribution, heating circuits, load management, etc)
- **Finance and ownership models** – private versus utility owned / operated

**Case studies** – Analysis of specific Alaska use case studies including a review of energy requirements (power, heat), existing / evolving infrastructure, and transportation logistics.

A composite roadmap will be prepared that incorporates key readiness metrics, critical action steps, decision gates, etc. based on consideration of a minimum of five specific case studies (military base, remote industrial site, hub town, northern port, remote community). Input gathered from Alaska stakeholders via a combination of outreach workshops and surveys will be used to identify attributes of a preferred case study for detailed study in subsequent phases of the effort.

Year 2. Roadmap Implementation Guidance ($250K) – ACEP will develop and analyze an energy system architecture for the selected case study, characterizing both its technical and fiscal performance attributes. The system conceptual design will be refined based on review by cognizant Alaska utility, microgrid developers, Alaska Energy Authority, and Department of Energy personnel. A detailed computer model of the proposed system will be developed for use in conjunction with "digital twin" efforts by industry and DOE researchers, enabling integrated analysis of evolving technology developments.

Year 3-5. Continued Support for Roadmap Implementation ($150K/year) – ACEP will continue to support roadmap implementation for Alaska. In addition, ACEP will track industry developments at the national and international level reports submitted to the legislature annually.

**Timeline**
This project will occur between July 1, 2021 and June 30, 2026.

Equipment

**UAA Classroom Technology Enhancements**
FY23-FY24 (GF: $3,000.0, NGF: $0.0, Total: $3,000.0)
FY25-FY26 (GF: $2,000.0, NGF: $0.0, Total: $2,000.0)
FY27-FY31 (GF: $5,000.0, NGF: $0.0, Total: $5,000.0)
Technology updates in classrooms require recurring funding for replacements and repair to remain current and relevant for student access and success. Due to several years of declining budgets, there is increased reliance on individual equipment replacements and repair to maintain business continuity. Technology enhancements increase space utilization, improve our capacity to provide distance education, and promote equity by improving accessibility to our entire student population, for example, by including updated speakers that amplify the instructors voice supporting the hearing impaired.

**UAF Inclusive Technology Infrastructure: eCampus Recording Capabilities, ADA Accessibility & Instructional Classroom Technology**

FY23-FY24 (GF: $4,000.0, NGF: $0.0, Total: $4,000.0)

For today's students, the digital world is ubiquitous, immersive and is their habitat. Investing in current technologies is necessary to engage students and provide a present-day media-rich learning experience and drive student success. An engaging digital experience for students and instructors throughout multiple learning environments reduces barriers, increases accessibility and boosts student participation, enrollment and retention. The following investment requests each present opportunities to transform the UAF learning experience.

1. eCampus HyFlex Classrooms, Recording Capability, Video "One-Button" Studio & Accessibility Stations: $2,000.0
   - HyFlex - Learning Glass Enabled Classrooms (15): $1,500.0
     Instructional technologies include Learning Glass technology and dual stream recording capability to support the streaming and capture of instruction for synchronous and asynchronous modalities. Additional improvements include lighting upgrades and audio upgrades for instructor and student participation, and retractable green screens. Technology improvements include standard digital classroom improvements (presentation, video conferencing, lecture capture, streaming and mobile technologies). These technology upgrades fully facilitate the HyFlex modality, supporting combinations of synchronous, asynchronous, and face-to-face learning experiences eliminating space and time based barriers to learning.

   - eCampus Media Studio Upgrades (2): $100.0
     Provides for enhanced media production from our two campus based studios. Improvements would include upgraded recording equipment (video and audio) as well as improved post-production equipment, supporting increased demand and capacity requirements.

   - Sound Isolation Booths (2): $50.0
     Provides a sound proof space for students and instructors to produce quality audio recordings for asynchronous course elements as well as host online synchronous learning sessions.

   - One Button Studios (5): $250.0
     These self-service studios provide high quality video media production equipment.
     Students and instructors are able to walk-in, click a button, and walk-out with their own video media project. The one-button concept eliminates the production wait time for a finished product and significantly reduces staff support required for video production services. This greatly enhances media production capacity to better support our distance based courses and online programs.

   - Center for Accessible Technology: $100.0
     This center would accommodate users of assistive technologies and serve to educate the campus community regarding accessibility, equal access and universal design concepts. The center would be equipped with assistive technologies such as Braille readers and keyboards, screen reader workstations, document conversion software, magnification tools, enlarged displays, tactile printers, keyboard/mouse alternatives, eye tracking hardware, and sip and puff devices. In addition to the equipment listed above, the Center would include an empathy lab equipped with a variety of simulations, which would help users understand barriers to universal access. These tools and simulations would be available for faculty and course designers to develop and test courses and services. The entire campus community would benefit from such a space through the opportunities for education. Institutional compliance issues would also be addressed through the easy access to this technology.

2. Deferred Instructional Classroom Technology Upgrades: $2,000.0
   This request will upgrade the instructional technology in 82 learning spaces and classrooms throughout the UAF campuses that have not been upgraded since 2014. Instructional technologies include presentation, video conferencing, lecture capture, streaming and mobile technologies. These technology upgrades will modernize both distance and face-to-face learning experiences by making classrooms Zoom web conferencing compatible. Additional funds would be used to update rooms circa 2015-present, to be Zoom web conferencing compatible.

**UAS Smart Classrooms Juneau Campus**

FY23-FY24 (GF: $100.0, NGF: $0.0, Total: $100.0)

Smart/Flex classrooms have shown to improve student learning, foster collaboration among students, increase grades and student graduation rates. Movable desks, chairs, smart boards and displays allows the professor to arrange the classroom to best compliment the subject matter. Professors can set up a traditional front facing presentation classroom or they can reconfigure their classroom several times in a single class period to create different learning experiences. It allows professors and students to collaborate on a more engaging level that helps students learn and remember.

Video conferencing, lecture capture, linked-in monitors, streaming and mobile technologies enable to bring distance learning students into the classroom. Not only can they see and hear the professor and class, they can ask questions, see and collaborate with other classmates.

Classrooms no longer need to subject specific, with Smart/Flex classrooms the room can be set up for any subject. This increases the usability of the building space and allows for the reduction in overall building space and associated costs.

This project will convert one existing classroom into a Smart/Flex classroom.

| University of Alaska FY22 Budget Request | | Facility Inventory 2019 | | | | | Calculated Index (2) | | Facilities Maintenance Budget | | | | Capital Request |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Location | # of Bldgs | Avg. Age (years) | Gross Area (sq. feet) | Adjusted Value (AV) (thousands) | DM/R&R Backlog (thousands) | Index | Dist. % | Budget Goal | % of AV | FY21 Base Budget | Budget Shortfall (Base-Goal) | $50M |
| **Anchorage Campus** | *Anc.* | 65 | 28.1 | 3,165,066 | 1,391,732.3 | 483,281.9 | 29.0 | 26.6% | 15,900.0 | 1.1% | 8,100.0 | -7,800.0 | 13,300.0 |
| **UAA Community Campuses** | | 31 | 20.3 | 452,414 | 263,176.5 | 28,699.1 | 6.6 | 6.1% | 3,700.0 | 1.4% | 1,700.0 | -2,000.0 | 3,000.0 |
| *Kenai Peninsula College* | *Soldotna* | *8* | *29.8* | *160,626* | *94,277.9* | *6,243.0* | | | | | | | |
| *Kachemak Bay* | *Homer* | *3* | *20.0* | *26,041* | *13,806.2* | *751.0* | | | | | | | |
| *Kodiak College* | *Kodiak* | *5* | *42.8* | *45,049* | *26,426.0* | *4,783.2* | | | | | | | |
| *Matanuska-Susitna College* | *Palmer* | *9* | *27.8* | *153,371* | *91,076.4* | *9,322.2* | | | | | | | |
| *Prince Wm. Sound College* | *Valdez* | *6* | *10.5* | *67,327* | *37,589.9* | *7,599.7* | | | | | | | |
| | UAA Total | 96 | 27.6 | 3,617,480 | 1,654,908.8 | 511,981.0 | 35.7 | 32.6% | 19,600.0 | 1.2% | 9,800.0 | -9,800.0 | 16,300.0 |
| **Fairbanks Campus** | *Fbks.* | 238 | 42.2 | 3,587,662 | 2,418,846.5 | 705,579.0 | 61.0 | 55.8% | 33,500.0 | 1.4% | 13,100.0 | -20,400.0 | 27,900.0 |
| **Community & Technical College** | *Fbks.* | 4 | 41.5 | 226,304 | 44,256.6 | 7,440.0 | 0.7 | 0.6% | 300.0 | 0.7% | 200.0 | -100.0 | 300.0 |
| **UAF Community Campuses (CRCD)** | | 27 | 32.3 | 155,942 | 143,888.2 | 20,043.5 | 4.7 | 4.3% | 2,600.0 | 1.8% | 500.0 | -2,100.0 | 2,200.0 |
| *Bristol Bay Campus* | *Dillingham* | *3* | *18.0* | *20,217* | *15,418.1* | *303.0* | | | | | | | |
| *Chukchi Campus* | *Kotzebue* | *1* | *43.0* | *10,362* | *10,173.1* | *2,705.0* | | | | | | | |
| *Interior Alaska Campus* | *Various* | *5* | *31.2* | *29,111* | *23,977.5* | *1,191.0* | | | | | | | |
| *Kuskokwim Campus* | *Bethel* | *7* | *35.3* | *51,774* | *51,851.0* | *14,933.0* | | | | | | | |
| *Northwest Campus* | *Nome* | *10* | *31.3* | *21,570* | *26,209.6* | *411.5* | | | | | | | |
| *College of Rural & Community Dev.* | *Fbks.* | *1* | *16.0* | *22,908* | *16,258.8* | *500.0* | | | | | | | |
| | UAF Total | 269 | 38.1 | 3,969,908 | 2,606,991.2 | 733,062.5 | 66.3 | 60.7% | 36,400.0 | 1.4% | 13,800.0 | -22,600.0 | 30,400.0 |
| **Southeast Campus** | *Juneau* | 29 | 28.4 | 381,932 | 232,062.8 | 17,639.3 | | | | | | | |
| **UAS Community Campuses** | | 4 | 23.0 | 117,546 | 63,292.7 | 4,407.5 | | | | | | | |
| *Ketchikan Campus* | *Ketchikan* | *3* | *28.3* | *49,488* | *37,066.4* | *2,990.0* | | | | | | | |
| *Sitka Campus* | *Sitka* | *1* | *7.0* | *68,058* | *26,226.3* | *1,417.5* | | | | | | | |
| | UAS Total | 33 | 27.8 | 499,478 | 295,355.4 | 22,046.8 | 6.7 | 6.2% | 3,700.0 | 1.3% | 1,700.0 | -2,000.0 | 3,100.0 |
| **Statewide (1)** | *Various* | 9 | 39.7 | 241,973 | 104,474.2 | 6,073.2 | 0.5 | 0.5% | 300.0 | 0.3% | 300.0 | | 200.0 |
| | SW Total | 9 | 39.7 | 241,973 | 104,474.2 | 6,073.2 | 0.5 | 0.5% | 300.0 | 0.3% | 300.0 | | 200.0 |
| | UA Total | 407 | 34.8 | 8,328,839 | 4,661,729.6 | 1,273,163.5 | 109.2 | 100.0% | 60,000.0 | 1.3% | 25,600.0 | -34,400.0 | 50,000.0 |

1. Statewide facility values include Land Management properties; distribution % reduced at SW to allow a larger portion of the funding to be distributed to campuses.
2. The index (distribution) is based on the individual building age times the adjusted value by campus divided by a billion.

University of Alaska
Capital Budget Request vs. State Appropriation
FY12-FY21
(in thousands of $)

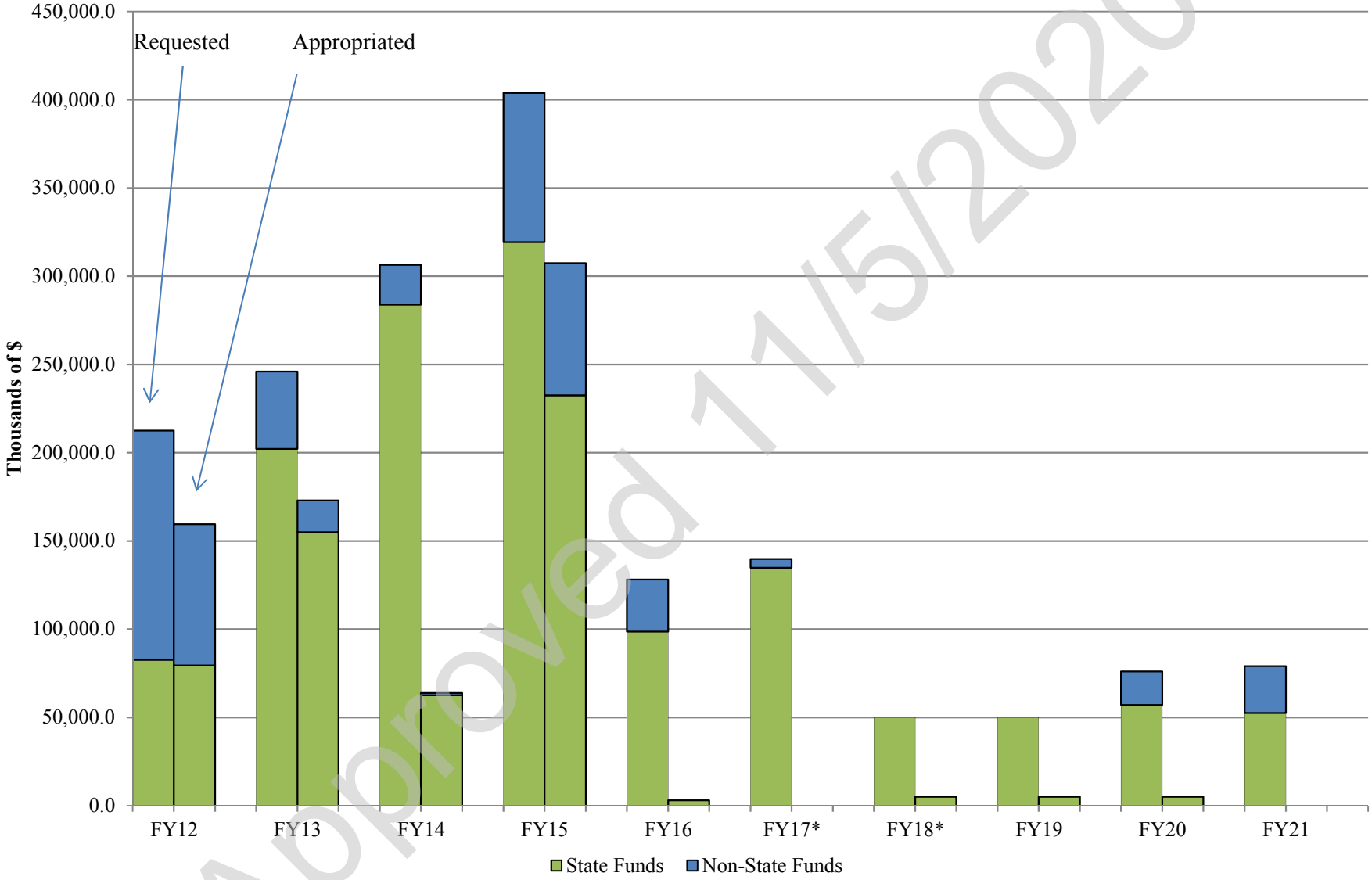
| Request | Renewal and Repurposing | Add/Expand | New Facilities | Equipment | Other[1] | Total |
|---|---|---|---|---|---|---|
| FY12 | 70,433.0 | | | | 12,092.5 | 82,525.5 |
| FY13 | 187,500.0 | | | | 14,700.0 | 202,200.0 |
| FY14 | 162,500.0 | | 108,900.0 | | 12,500.0 | 283,900.0 |
| FY15 | 37,500.0 | | 273,900.0 | | 7,900.0 | 319,300.0 |
| FY16 | 50,000.0 | | 35,550.0 | | 13,000.0 | 98,550.0 |
| FY17 | 100,000.0 | | 34,800.0 | | | 134,800.0 |
| FY18 | 50,000.0 | | | | | 50,000.0 |
| FY19 | 50,000.0 | | | | | 50,000.0 |
| FY20 | 50,000.0 | | | | 7,000.0 | 57,000.0 |
| FY21 | 50,000.0 | | | | 2,500.0 | 52,500.0 |
| **Total** | 807,933.0 | | 453,150.0 | | 69,692.5 | 1,330,775.5 |
| **10 yr. Avg.** | 80,793.3 | | 45,315.0 | | 6,969.3 | 133,077.6 |

| Approp. | Renewal and Repurposing[2] | Add/Expand | New Facilities | Equipment | Other[1] | Total |
|---|---|---|---|---|---|---|
| FY12 | 39,500.0 | 2,000.0 | 35,800.0 | | 2,204.0 | 79,504.0 |
| FY13 | 37,950.0 | | 108,900.0 | | 8,040.0 | 154,890.0 |
| FY14 | 30,000.0 | | 30,000.0 | | 2,588.7 | 62,588.7 |
| FY15 | 19,273.0 | | 212,600.0 | 120.0 | 450.0 | 232,443.0 |
| FY16 | 3,000.0 | | | | | 3,000.0 |
| FY17 | | | | | | |
| FY18 | 5,000.0 | | | | | 5,000.0 |
| FY19 | 5,000.0 | | | | | 5,000.0 |
| FY20 | 5,000.0 | | | | | 5,000.0 |
| FY21 | | | | | | |
| **Total** | 144,723.0 | 2,000.0 | 387,300.0 | 120.0 | 13,282.7 | 547,425.7 |
| **10 yr. Avg.** | 14,472.3 | 200.0 | 38,730.0 | 12.0 | 1,328.3 | 54,742.6 |

1. Includes research, small business development center and other capital funding requests or appropriations.

2. Funds reallocated from the state appropriated portion of the operating budget for: Strategic Investments (SI): FY17 - $10.0 million; FY18 - $5.0 million, and non-state; Natural Resource Funds (NRF): FY17 - $269.3 thousand; FY18 - $300.4 thousand.

**University of Alaska**
**Capital Request and Appropriation Summary**
**FY12-FY21**




*Funds reallocated from the state appropriated portion of the operating budget for Strategic Investments (SI): FY17 - $10.0 million; FY18 - $5.0 million, and non-state Natural Resource Funds (NRF): FY17 - $269.3 thousand; FY18 - $300.4 thousand.

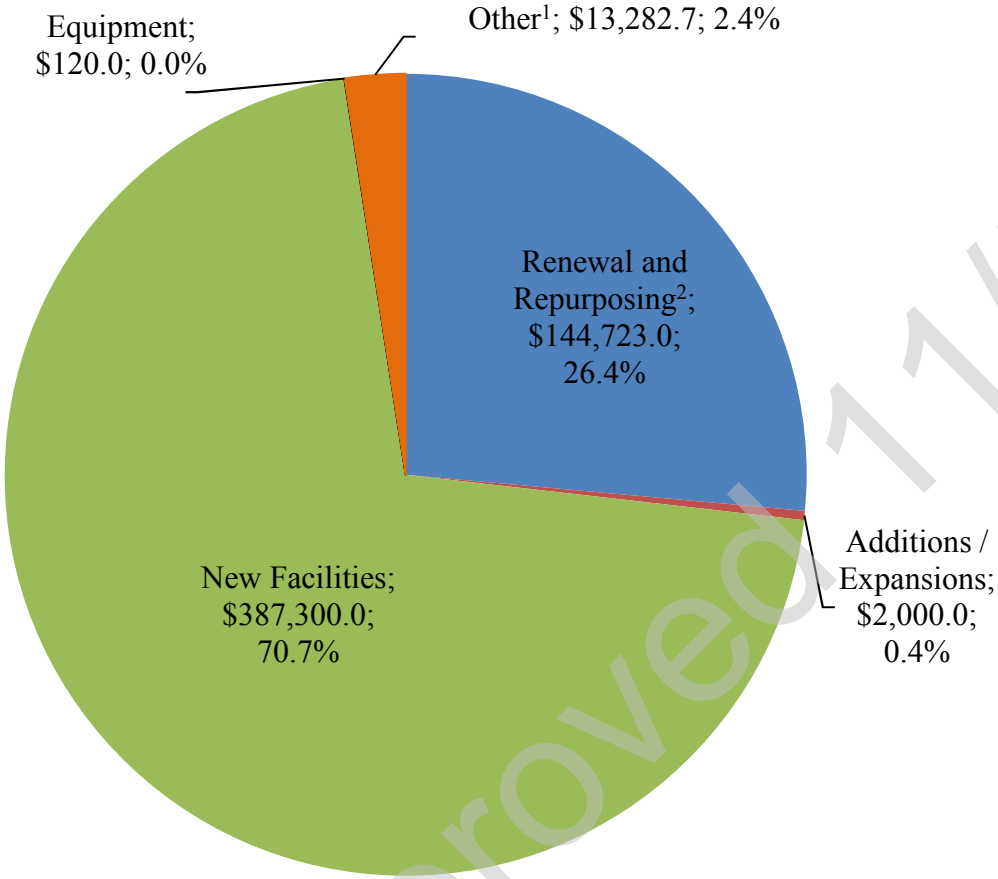
University of Alaska
State Appropriation Summary by Category
FY12-FY21
(in thousands of $)

| Campus | Location | Renewal and Repurposing[2] | | Additions / Expansions | | New Facilities | | Equipment | | Other[1] | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Anchorage Campus | Anchorage | 40,226.3 | 27.8% | | | 153,200.0 | 39.6% | | | 2,400.0 | 18.1% | 195,826.3 | 35.8% |
| Kenai Peninsula College | Soldotna | 2,736.1 | | | | 1,800.0 | | | | | | 4,536.1 | |
| Kachemak Bay | Homer | 674.2 | | | | | | | | 100.0 | | 774.2 | |
| Kodiak College | Kodiak | 1,512.0 | 6.6% | | | | 0.5% | | | | 0.8% | 1,512.0 | 2.1% |
| Matanuska-Susitna College | Palmer | 2,918.0 | | | | | | | | | | 2,918.0 | |
| Prince Wm. Sound College | Valdez | 1,701.6 | | | | | | | | | | 1,701.6 | |
| | **UAA** | 49,768.3 | 34.4% | | | 155,000.0 | 40.0% | | | 2,500.0 | 18.8% | 207,268.3 | 37.9% |
| Fairbanks Campus | Fairbanks | 73,685.7 | | | | 228,300.0 | 58.9% | | | 10,300.0 | 77.5% | 312,285.7 | |
| Fairbanks Campus | Palmer | 300.0 | 51.1% | | | | | | | | | 300.0 | 57.1% |
| Community & Technical College | Fairbanks | 1,360.0 | | | | | | | | | | 1,360.0 | |
| Bristol Bay Campus | Dillingham | 128.0 | | | | | | | | | | 128.0 | |
| Chukchi Campus | Kotzebue | | | | | | | | | | | | |
| Interior Alaska Campus | Tok | | | | | | | | | | | | |
| Interior Alaska Campus | Fort Yukon | | 3.6% | | | | | | | | | | 0.7% |
| Interior Alaska Campus | Fairbanks | | | | | | | | | | | | |
| Kuskokwim Campus | Bethel | 2,871.0 | | | | | | | | | | 2,871.0 | |
| Northwest Campus | Nome | 100.0 | | | | | | | | | | 100.0 | |
| College of Rural & Comm. Dev. | Various | 686.0 | | | | | | | | | | 686.0 | |
| | **UAF** | 79,130.7 | 54.7% | | | 228,300.0 | 58.9% | | | 10,300.0 | 77.5% | 317,730.7 | 58.0% |
| Juneau Campus | Juneau | 12,449.0 | 8.6% | 2,000.0 | 100.0% | 4,000.0 | 1.0% | 120.0 | 100.0% | 482.7 | 3.6% | 19,051.7 | 3.5% |
| Ketchikan Campus | Ketchikan | 1,231.0 | 1.1% | | | | | | | | | 1,231.0 | 0.3% |
| Sitka Campus | Sitka | 298.0 | | | | | | | | | | 298.0 | |
| | **UAS** | 13,978.0 | 9.7% | 2,000.0 | 100.0% | 4,000.0 | 1.0% | 120.0 | 100.0% | 482.7 | 3.6% | 20,580.7 | 3.8% |
| Statewide | Fairbanks | 1,846.0 | 1.3% | | | | | | | | | 1,846.0 | 0.3% |
| | **SW** | 1,846.0 | 1.3% | | | | | | | | | 1,846.0 | 0.3% |
| | **UA Grand Total** | 144,723.0 | 100.0% | 2,000.0 | 100.0% | 387,300.0 | 100.0% | 120.0 | 100.0% | 13,282.7 | 100.0% | 547,425.7 | 100.0% |
| | % of Total | 26.4% | | 0.4% | | 70.7% | | 0.0% | | 2.4% | | 100.0% | |

1. Includes research and other capital appropriations.

2. Funds reallocated from the state appropriated portion of the operating budget for: Strategic Investments (SI): FY17 - $10.0 million; FY18 - $5.0 million, and non-state; Natural Resource Funds (NRF): FY17 - $269.3 thousand; FY18 - $300.4 thousand.

# State Appropriation Summary by Category FY12 - FY21
(in thousands of $)




New Facilities and Major Expansions[3]

**UAA**

Engineering Building (FY11-FY15) $123,200.0
Kenai Peninsula College Campus Student Housing (FY11 - FY12) $17,800.0
Alaska Airlines Center (FY11 - FY12) $94,000.0

**UAF**

Engineering Building (FY11 - FY15) $73,946.7
Heat & Power Plant Major Upgrade (FY15) $162,000.0

**UAS**

Pugh Hall Dormitory Addition (FY12 - FY13) $6,000.0

1. Includes research and other capital appropriations.
2. Funds reallocated from the state appropriated portion of the operating budget for: Strategic Investments (SI): FY17 - $10.0 million; FY18 - $5.0 million, and non-state; Natural Resource Funds (NRF): FY17 - $269.3 thousand; FY18 - $300.4 thousand.
3. Project total for state appropriations is listed even if a portion is outide the timeframe represented in the pie chart.