

FY21 Deferred Maintenance Priorities

University of Alaska

University of Alaska
FY2021 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	2,000.0
Regulatory Compliance, Safety Improvements, & Code Upgrades	2,000.0
Campus Building Interior & Systems Renewal	6,350.0
Campus Building Envelope & Roof Systems Renewal	2,350.0
Campus Exterior Infrastructure & Signage Renewal	500.0
UAA Main Campus Subtotal	13,200.0
UAA Community Campuses	
Price William Sound College Campus Renewal	377.7
Kodiak College Campus Renewal	611.7
Matanuska-Susitna College Campus Renewal	943.6
Kenai Peninsula College Campus Renewal	1,108.0
Kenai Peninsula College - Kachemak Bay Campus Renewal	59.0
UAA Community Campuses Subtotal	3,100.0
UAA Priority DM and R&R Total	16,300.0
Main Campus Additional DM/R&R Projects	470,081.9
Community Campuses Additional DM/R&R Projects	25,599.1
UAA DM and R&R Total	511,981.0
UAF Main Campus*	
Fairbanks Campus Building Interior & Systems Renewal	13,425.0
Building Envelope & Roof Systems Renewal	3,795.0
Safety & Regulatory Compliance	6,040.0
Campus Infrastructure & Exterior Renewal	5,040.0
UAF Main Campus FY2020 Subtotal	28,300.0
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	30,500.0
Main Campus Additional DM/R&R Projects	677,279.0
Community Campuses Additional DM/R&R Projects	25,283.5
UAF DM and R&R Total	733,062.5

*\$300 thousand was transferred from the UAF CTC calculated capital request to Fairbanks Campus due to prior year over-funding of CTC projects.

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FY2021 Priority Deferred Maintenance (DM) and Renewal and Repurposing (R&R) Projects
State Appropriations *(in thousands of \$)*

Project Name	DM & R&R
UAS Main & Community Campuses	
Novatney Roof Replacement	300.0
Ziegler Plaza Concrete Replacement	20.0
Sitka Replace Lighting Switches in Health Sciences Facilities	35.0
Pedestrian Guardrail Replacement - Phase 2	325.0
Sitka Study to Replace Hot Water Tank	8.0
Mourant HVAC System Upgrade	360.0
Paul Deck Mansards Replacement	100.0
Housing Lodge Fuel Tank Replacement	105.0
Technical Education Center Welding Lab Fire Alarm Replacement	75.0
Sitka Tech Lab Canopy Over Exit	75.0
Technical Education Center Replace Shop Compressor and Control Panel	65.0
Campus Housing Sidewalks Repair	100.0
Recreation Center Security Cameras	75.0
Paul Elevator Replacement	200.0
Mourant Sound System	120.0
Technical Education Center Security Upgrades, Cameras, Doors, Procedures	100.0
Recreation Center Exterior Lighting for Parking & Building	135.0
Hendrickson Annex Exterior Painting	40.0
Sitka Install Additional Exterior Security Cameras	30.0
Hendrickson Lower Level Entry Vestibule & Roof Installation	125.0
Technical Education Center Welding Lab HVAC System Upgrades	234.0
Recreation Center Concrete Repairs	10.0
Sitka Remove Dry Sprinkler Exhauster	8.0
Facilities Services Re-Configure Office Spaces	20.0
Campus Housing Drainage Improvements	100.0
Soboleff Annex Site Reclamation	40.0
Fine Arts Courtyard	1.0
Replace Shower Pans in Apartment Units	50.0
Recreation Center Replace Sliding Cantilever Gates with Vertical Swing Gates	44.0
UAS Campuses Priority DM and R&R Total	2,900.0
Campuses Additional DM/R&R Projects	19,146.8
UAS DM and R&R Total	22,046.8
Statewide	
Butrovich Lighting Upgrades	300.0
Statewide Priority DM and R&R Total	300.0
Additional DM/R&R Projects	5,773.2
Statewide DM and R&R Total	6,073.2
UA Priority DM and R&R Total	50,000.0
UA DM and R&R Total	1,273,163.5

FY21 Deferred Maintenance Priorities

UAA

UAA Anchorage Campus Security and Safety

Benefits & Impacts:

This projects improve campus safety and increase the security of all spaces on the Anchorage campus. UAA has an obligation to keep all students, staff, faculty, and the public safe while on campus. An essential component of this obligation is achieved by providing doors that have code compliant, lockable hardware within the context of a modern electronic access system. Secure buildings reduce property loss and vandalism, preserving the asset for mission delivery. Replacing broken egress components reduces maintenance cost. There is a significant risk of security and safety to our campus community because of out-dated systems, unsupported access control software, and trial systems on some buildings. Safety and security is further compromised because there is currently limited key control and the keyways are open access and not patented. There is a significant risk for failure of the existing access control system because it is outdated and unsupported. A failure of the system would compromise safety and access to these buildings. This project is developed to fully assess the level of effort, design a plan of execution, and implement the first increment of 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. Additional benefits include UPDs ability to monitor and control from dispatch this will aid in isolating perpetrators or suspects and allowing for safe pathways for students and campus users. This centralized control will assist UPD in response time to concerns, allowing them better ability to focus on the highest priorities and to streamline their operations.

The proposed project would mitigate substantial risks, which have been noted at other universities:

- United Educators Insurance addresses inadequate access control systems as a risk.
 - National Fire Protection Act (NFPA) 72 (2010) for alarm monitoring (fire/panic/burglary).
 - Unaffiliated persons / homeless persons without authorization accessing campus facilities via outdated or broken equipment. Increase potential for thefts, burglaries, or assaults.
 - Lost keys or inadequate key systems
 - o Lost keys / old credentialing systems create potential panic and expensive rekeying requirements. At UAF an employee had a set of keys stolen along with personal property. This forced the university to replace external and internal keys and lock systems for facilities. Initial cost of over \$81,000 additional expenses were later incurred.
 - o U.S. Department of Education, Office of Civil Rights (Clery enforcement division) cited lack of key control in the Final Program Review Determination as a factor to the over two million dollar fine against Penn State University.
- Statewide Office of Audit & Consulting Services FY 2020 Annual Audit plan as presented to the Board of Regents Audit Committee on 9/6 includes an Information System Review of Building Entry Key Cards and the security of data.

Full implementation of the report recommendations cost estimates are well over \$12 million, which is not possible in the current budget environment. However, a step implementation in priority order, over time, is being prepared.

Relevant Priority Criteria: Health, Safety, Imminent Failure, and Timely Execution

Project Description:

Anchorage Campus Security and Modernization: This is phase 1 of a multi-phase project that has been unfunded on UAA's capital request for several years. With increasing awareness of safety and risk to our students and campus

community, coupled with recent significant increases in crime and homelessness in Anchorage, UAA commissioned efforts to develop a strategic plan for implementing the necessary upgrades consistent with requirements and recommendations from International Association of Campus Law Enforcement Administrators and United Educators: Prevention and Protection for Education.

UAA Anchorage will use these funds to accomplish the following: Consolidate existing access control systems from 5 different systems to one coordinated software and management with central control at University Police Department (UPD) for monitoring and controlling door access. Update physical keyway control system and keys to proprietary keyway. The existing physical keys at UAA are open sourced and can be easily duplicated. Update hardware, electric strikes for highest priority access points: UAA spine and connected buildings.

Request Amount: \$2,000,000

Other Funding Sources:

Previous work is funded from prior fiscal year capital and operating funding. At Anchorage, through a recent property sale, UAA is using the proceeds to fund the initial planning and design effort. The total cost of this project over multiple phases is planned at \$12.5M.

UAA Regulatory Compliance, Safety Improvements, and Code Upgrades

Benefits & Impacts

This project priority is related to updates to code required code compliance and safety improvements. This project addresses access, egress and safety measures for Anchorage Campus Buildings. Benefits include providing safe and minimally compliant occupancies for our campus users.

Relevant Priority Criteria

Health, Safety, Imminent Failure, Timely Execution, and Mission Continuity

Project Description

Replacement of Expired Exit Signs: This project replaces expired exit signs across campus.

ADA Accessibility Requirements: This project provides updates for ADA accessibility including replacement door hardware, ADA complaint resolution, restroom upgrades for accessibility and ADA signage.

ARC Flash Project: This project addresses OSHA NFPA 70E requirements for stand off 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 AKOSH compliance and it remedies critical electrical safety concerns.

Request Amount: \$2,000,000

Replacement of Expired Exit Signs: \$500,000

ADA Accessibility: \$500,000

ARC Flash Project: \$1,000,000

Other Funding Sources

Previous efforts on this item utilized a combination of operating and capital funds. Ongoing decreases in operating funds against rising costs in operations require increased reliance on capital funding for these critical needs.

UAA Building Interior and Systems Renewal



Hydronic Heating Pipe removed 2018 from the UAA Library

Benefits & Impacts:

UAA Main Campus has several past due and critical infrastructure requirements. This fact has produced an increase in failures across campus which places additional burden on our students and faculty related to business continuity and ability to meet mission critical academic goals. This project funds replacement of components that are in a critical state of anticipated failure. Recent examples of this include: Fall 2019 Admin building closure due to an electrical fire in the main distribution panel. Fall 2019 Rasmussen Hall 3rd floor classes relocated due to both elevators being down due to intermittent failures on an aging conveying system. Fall 2018 failure of 4 boilers in the library old core. These unplanned events are more costly than a planned replacement due to the mission related impacts and emergency response approach.

The **UAA/APU Consortium Library** houses archives and academic and research materials for the community and as a consortium supports academic research for UAA and APU. Based on the existing condition of the heating piping and the difficulty in maintaining outdated boilers, this system is on the verge of failure which would compromise the collections and compromise community access to the library.

Eugene Short Hall (ESH) 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 UPD operations.

Professional Studies Building and Wendy Williamson Auditorium infrastructure replacements. New boilers, new HVAC components, elevator upgrades. These facilities totalling 120,204 GSF are connected and rely on the same infrastructure to support its functions. Critical programs at these buildings include: College of Health programs: PT/OT, pharmacy doctoral program, speech pathology, WWA events, and about 20 classrooms.

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: Social Sciences Building (SSB) 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, code and safety requirements.

Relevant Priority Criteria: Health, Safety, Imminent Failure, Timely Execution, and Mission Continuity

Project Description:

Anchorage 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. UAA recently completed the renovation of 2 of the 4 boiler rooms and associated hydronic piping, completing a just in time renovation that survived the November 30th earthquake keeping the facility heated while the boilers in the other two cores, which are planned for replacement, failed. Total Project Cost Remaining: \$13.5M

Eugene Short Hall (ESH): This project would conduct mechanical and electrical upgrades, replacing air handling units, boilers, outdated controls, electrical distribution, and other critical components of the facility. Total Project Cost: \$3M

Professional Studies Building and Wendy Williamson Auditorium: This project would leverage a recent re-commissioning report with potential support of an ESCO in order to update building mechanical and electrical systems that are beyond their useful life and optimize the building systems that will remain. Total Project Cost: \$3M

Rasmussen Hall infrastructure upgrades: This project will prioritize elevator repair and upgrades in order to mitigate the future risk of failure in support of the student, faculty, and staff who occupy this facility. Additionally, a review of the building systems will be conducted in order to support future project prioritization. Total Project Cost: \$1M

Social Sciences Building: This project will look at making mechanical upgrades in order to improve occupant comfort, and extend the useful life of existing building systems. These funds would be best leveraged in support of an ESCO. Total project cost: \$3M

Interior System Renewal: Funds in order to support relevant project planning, design, and construction, and leverage in support of capturing unknowns such as furnace failures, electrical failures, or other critical system needs. Could be reallocated to specific project previously identified as designs are refined.

FY21 Request Amount: \$5.85M

Library Old Core Hydronic Heating replacement: \$2.5M

Eugene Short Hall Emergency and Boiler Upgrades: \$1M

Professional Studies Building and Wendy Williamson Auditorium: \$1M

Rasmussen Hall Infrastructure Improvements: \$0.5M

Social Sciences Building: \$0.85M

Other Funding Sources:

Library Old Core: Design work has been completed utilizing prior fiscal year capital and operating funds. The total project cost is \$16.3M, recent investments to date to these upgrades total: \$2.8M, leaving \$13.5M to be funded to complete the project. This year's request includes the next increment of work which is the most critical and on the verge of failure.

UAA is simultaneously contracting with an energy performance contractor to assist with financed funding model for a portion of the needed improvements at the following facilities: SSB, WWA, PSB, Admin, ESH. However, this will not provide sufficient funding for all required improvements. This capital deferred maintenance request is not the total project cost. This request is a small portion of the need that cannot be funded through an ESCO funding model. *

*See UAA ESCO Supplemental Attachment

UAA Building Envelope and Roof Replacement

Benefits & Impacts

Gordon Hartlieb Hall Roof Replacement: This building is 49 years old and requires replacement. Roofs on campus of this vintage are at risk of imminent failure. The GHH building provides academic support services for CTC Welding, CAS Ceramic Shop, as well as critical support Facilities functions.

Spine Roof and Window Improvements: The UAA spine connects the east campus core buildings with the west campus core buildings. The original spine was built in the 70s and was added on to over the years. It starts at Rasmussen Hall and extends through the Seawolf Sports Complex, Student Union, over UAA drive to the Central Parking Garage and the Social Science Building. The spine serves as a student support zone with numerous seating areas for study. The spine experiences numerous leaks during rain events causing additional damage to existing finishes.

Relevant Priority Criteria: Imminent Failure, Asset Preservation, Program Mission Continuity, and Timely Execution

Project Description:

GHH 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.

Spine Roof and Window Improvements: 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. Furthermore, this project will look to replace and upgrade the windows to increase R-Values and promote energy efficiency.

Request Amount: \$2,350,000

GHH Roof Replacement: \$1,600,000

UAA Spine Roof and Window Upgrades: \$750,000

Other Funding Sources:

It is anticipated that preliminary design work will leverage FY19-20 funds.

UAA Exterior Infrastructure Replacements



Failed storm drain removed from Anchorage East Campus

Benefits & Impacts:

The campus subsurface infrastructure is critical to upgrade and repair. There have been several sinkholes failures as well as damaged and failed drain lines which impacts access to campus and causes unplanned and unanticipated closures to buildings. These failures include water supply main disruptions, storm sewer collapses, and failures at fire hydrants which causes immediate closure of water mains and impacts to building occupancies.

The campus storm drain infrastructure request includes high priority drain line replacements which are critical to maintaining access to campus facilities. These projects will address infrastructure that is at risk of imminent failure and in urgent need of replacement in order to safely support the UAA campus facilities.

Water supply upgrades and isolation valve installation. 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.

Relevant Priority Criteria: Safety, Imminent Failure, and Timely Execution

Project Description:

Anchorage Campus Drain Line Repair and Replacement: 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 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 drainline failure and collapse as well as offsets leading to increased erosion and drain line failure. A collapse of any of the lines under roads ways 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 plastic drain line.

Request Amount: \$500,000

Campus Storm Sewer Draining: \$500,000

Other Funding Sources: Preliminary design work has been completed utilizing prior fiscal year capital and operating funds. For Anchorage, we have accomplished earlier phases of this project using state appropriated deferred maintenance funding.

UAA Community Campus Deferred Maintenance

Prince William Sound College (PWSC)

The growden-harrison building was originally built shortly after the 1964 earthquake as an elementary school and was added onto in a piecemeal fashion in the following years. This has resulted in aging mechanical, electrical, HVAC systems that are currently undersized for the facility and have included the use of asbestos containing materials. The piecemeal additions have resulted in draining and weathering problems that adversely impact the building envelope. Student Housing ReRoof is the highest priority. The three student housing units were originally constructed in 1966 and completely renewed between 2008-2010. Roofing was not completed on two of three student housing units and these facilities are showing damage from ice damming and resultant leakage. The third building roof was replaced, has a different orientation, and is not showing signs of damage or leakage. In 2014, a professional assessment was complete offering a number of options rectify the problem. Most of the problem is attributed to the low slope (2:12), lack of correct ventilation, and lack of adequate insulation in the existing building roofs. The most appropriate and permanent solution, but most costly, is to build a 6:12 roof truss system over top of the existing roof and add insulation or potentially replace the roof from the wall top plate up, to include new trusses, decking, insulation and metal roofing appropriate for the heavy snow loads and long winters of Valdez. The third housing unit that was reroofed will likely need similar treatment to increase its roof pitch at the end of its useful life in 2030 unless it shows signs of damage earlier. Total Project Cost: \$1.45M.

Kodiak College (Kodiak)

The buildings on the Kodiak Campus were constructed in the early to mid-1970's. The original windows suffer from worn seals that cause air infiltration. The mechanical and electrical systems are in need of renewal to meet the increased student demand and increased use of new technology. Roofing repairs are required, specifically for the campus center. Parking lot lighting repair and upgrades are required. Improvements to layout and design will increase space efficiency and allow for replacement of worn and outdated fixed equipment. Total Project Cost: \$5.253M.

Mat-Su College (MSC)

This project will address campus-wide deferred maintenance issues and renewal and renovation requirements for the Mat-Su campus. The buildings on the Mat-Su campus are 15-40 years old and their roofs need to be replaced. With several of MSC's buildings reaching 35-40 years of age, it is prudent to plan for the replacement of building components during the next few years. Boilers systems in this region are an essential component. The boilers not already updated this summer range in age from 1979 to 1994. The boiler upgrades (with the oldest first) would allow for greater cost savings through energy efficiency as 80% efficiency boilers would be replaced with 95% efficiency boilers. the original doors and hardware are still in use across the campus with some units being over 40 years old and heavily used. As these units wear, energy leaks are created within the buildings which increases the cost of operation and wear on other systems, resulting in an unbalanced

environment within the buildings. Additionally, the failure of the hardware increases safety and security risks for the university that can result in substantial liability. Technology advancements increase the energy efficiency and security of these units, which will reduce expenses for the university. Total Project Cost: \$10.633M

Kenai Peninsula College (KPC)

The Kenai River Campus includes four buildings built between 1971 and 1983. Each building is of different quality having been constructed using different construction methods and materials, and energy efficiencies. The campus is spending too much money on utility costs due to the inefficiencies of the old buildings. With rapidly increasing utility costs, the energy savings realized by this renewal would be significant. The McLane (KP101) additions were all constructed between 1972 and 1976 and the original air handling units are in place. The air handling equipment and associated duct work in these buildings cannot supply the quantities of air required by current mechanical standards. The university needs to replace the heat plant and air handling equipment for these facilities prior to a catastrophic failure results in an emergency replacement. The campus safety improvements on exterior walkways are required to maintain compliance with the Americans with Disabilities Act (ADA). This project addresses outdated security controls and monitoring systems. Total Project Cost: \$9.367M

Kachemak Bay Campus (KPC-KBC)

A significant portion of the pioneer hall campus building (kb-101, 7,200 SQFT.) was originally built in 1988 as a post office. Critical needs include energy improvement LED upgrades, ADA access and safety improvements and security upgrades. These priorities improve student safety and regulatory compliance and lower energy usage. Additional needs include mechanical and electrical upgrades to shop classrooms to improve shop safety and code updates for HVAC requirements.

Total Project Cost: \$1.608M

FY21 Request Amount: \$3,100,000

PWSC: \$377,700

Kodiak: \$611,700

MSC: \$943,600

KPC: \$1,108,000

KPC-KBC: \$59,000

Energy Savings Performance Contract (ESPC)

Up to this point, UAA has been able to self-fund and self-perform energy savings projects which has resulted in lowering overall energy usage. These savings are credited to our efforts on implementing major recommendations from AHFC White Paper on Energy Use in Alaska's Public Facilities, November 7, 2012. The impact of these efforts over time are shown in Figure 2 (p2).

The state's fiscal constraints and sharp reduction in capital funding requires owners to more creatively address infrastructure and asset reinvestment to avoid a catastrophic system failure. Additionally, technological advances, such as internet of things (IoT), is allowing for advances in occupancy sensors that go beyond traditional lighting controls and can assist with air control. Air control based on occupancy sensors allows for direct, real-time cooling or heating to individual offices and rooms. These sensors have proven payback at other universities where the usage hours are inconsistent and vary significantly for faculty, staff, and students.

What is an energy savings performance contract?

A financial solution to procure and implement infrastructure improvements, utilizing energy and operational savings from existing and projected budgets to fund fixed payments over time, with guaranteed results.

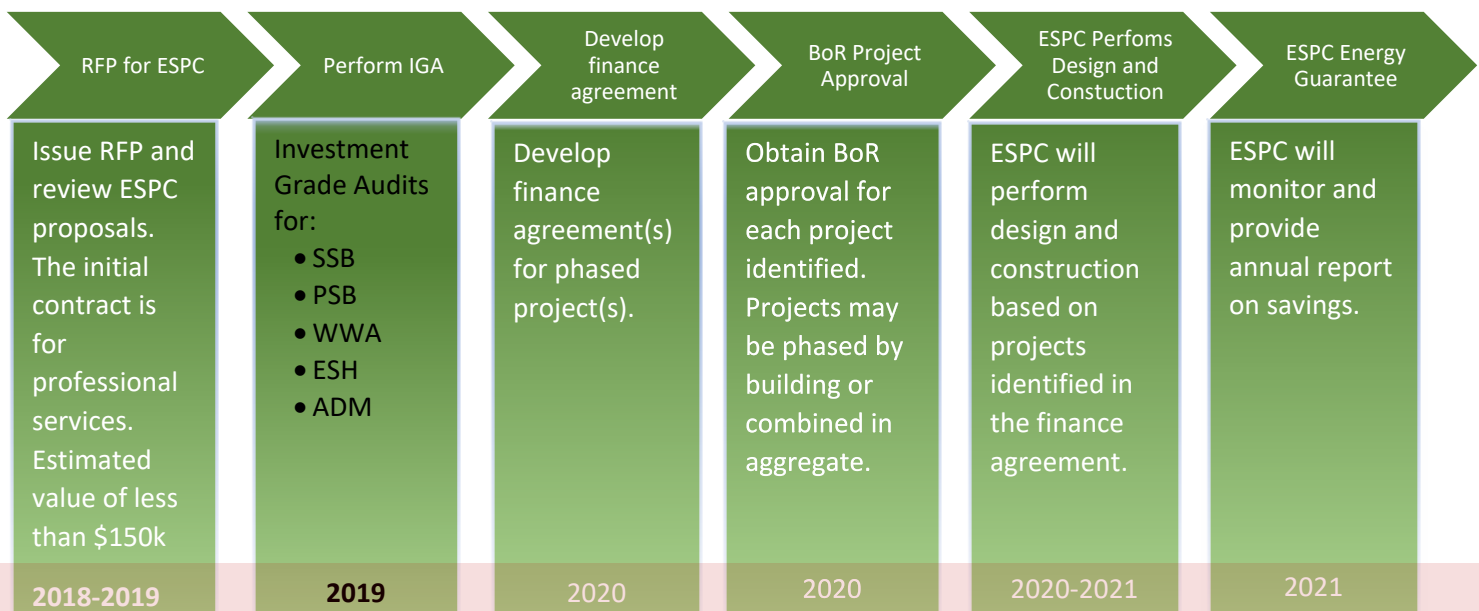
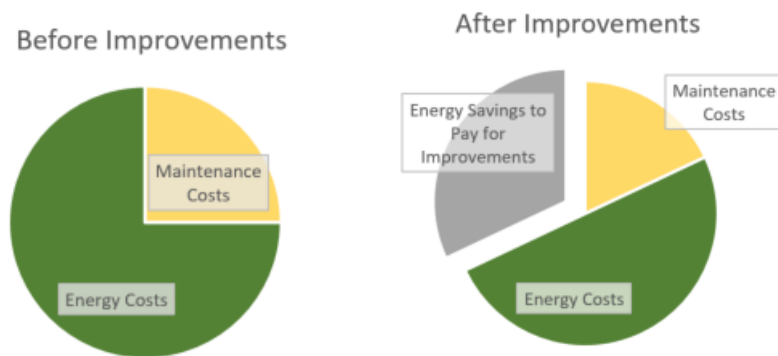


Figure 1:UAA ESPC Progress and Process Map

The following facilities are included in this project:

1. Social Sciences Building (SSB)
2. Professional Studies Building (PSB)
3. Administration and Humanities Building (ADM)
4. Eugene Short Hall (ESH)
5. Wendy Williamson Auditorium (WWA)

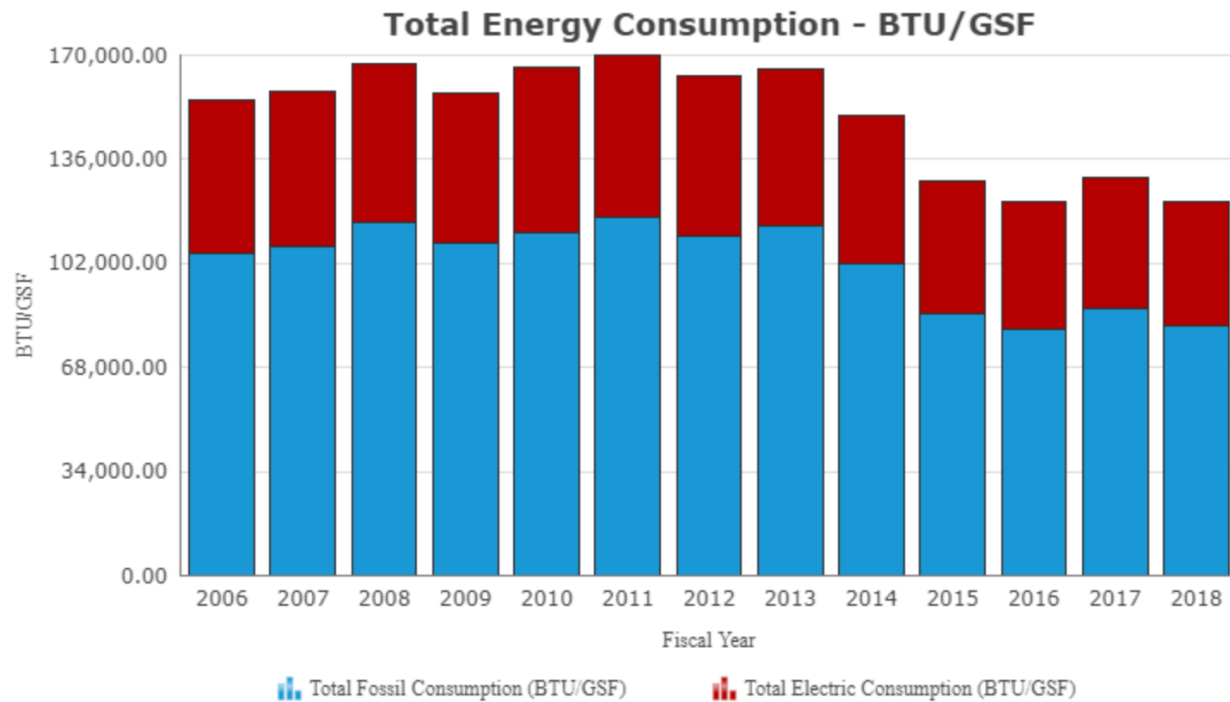


Figure 2: UAA Historical Energy Consumption

FY21 Deferred Maintenance Priorities

UAF

UAF Safety and Regulatory Compliance



Patty Center Pool (maintenance worker repairing drain)



Non-compliant Fire Alarm Panel in a residence hall

Benefits & Impacts:

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.

Relevant Priority Criteria: Health, Safety, Imminent Failure, and Timely Execution

Project Description:

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.

Campus Wide Fire Alarm Replacement for End of Life: Approx. 30 fire alarm panels on the Fairbanks Campus 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 Gruening, Duckering, Rasmuson, and Bunnell.

Patty Pool Code Compliance: The Patty Pool is used year-round by the UAF and greater Fairbanks community, as well as UAF's NCAA Swim Team. During a recent code review, UAF determined the pool needed two critical code upgrades and additional major renewal to remain in service. In the first phase of work, code issues will be addressed including adding a secondary fire exit and increasing the amount of fresh air supply into the natatorium. In a later phase, renewal of the pool's plumbing and finishes will be completed.

Total FY21 Request Amount: \$6,040,000 (based on targeted annual renewal investment)

Patty Pool Code Compliance Repair and renew the finishes, mechanical, electrical, and structural systems in the pool vessel, deck, and balcony seating. Work will include repairing structural and non-structural cracks in the pool vessel and deck, replacing the room and pool vessel lighting, upgrading the ventilation, replacing all pool water related plumbing, providing a new fire sprinkler system, installing corrosion resistant finishes and providing a second means of egress off the deck. Phase 1 (\$2,000,000) 1) Replace the pool deck ventilation system and bring up to current required number of air exchanges 2) install a second means of egress from the pool deck. Phase 2 (\$6,000,000) Complete the finishes, plumbing and structural repairs.
Wood Center Handrails: Install code compliance handrails and guardrails on original stairwells of Wood Center.
Campus Wide Fire Alarm Replacement for End of Life: Approx. 30 fire alarm panels on Fairbanks Campus have reached their end of life and the manufacturer is no longer supporting them. The next facilities to replace are Gruening, Duckering, Rasmuson, and Bunnell
Hess Commons Asbestos Abatement: Removal of asbestos containing fireproofing above the ceiling of Hess Commons. ACM is a regulated material and all systems located above the ceiling cannot be maintained.
Lab Ventilation Air Controller Replacement: Lab ventilation is required to maintain a specific amount of exhaust air to protect lab users from hazardous chemicals. Many of the lab controllers built by Phoenix Controls have reached the end of their useful life and must be replaced to keep the labs code compliant
MBS Exterior Lighting: Replace inadequate exterior lighting around the MBS complex. Many areas are dark, including the main south stairways.
Gruening Egress Corrections: Install code compliant guardrails and handrails on stairwell and infill openings.
Cutler Apartment Complex ADA: The existing sidewalks along Block 400-600 are failing, dimly lit, and do not meet ADA requirements.
Seward Marine Center: To remain in compliance with Alaska DEC regulations, remove and replace the underground storage tanks serving the KM Rae building and the apartments. May require minor soil remediation.

UAF Building Interior and Systems Renewal



Failed sanitary sewer line piping removed from Bartlett Hall



Roof leak into Elvey Electrical Room

Benefits & Impacts:

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.

Project Description:

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.

Relevant Priority Criteria: Health, Safety, Imminent Failure, Timely Execution, and Mission Continuity

Fairbanks Campus Bartlett Hall Plumbing Replacement: Bartlett Hall is the second largest dormitory, housing 320 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 hall with no notice should it fail. Over the last 4 years, plumbing supporting the restrooms has failed, leaving portions of the building without sanitation facilities. The pipe has degraded over the life of the 50-year old building, leaving large holes in branch and main lines. The damage has led to leaks of raw sewage into the occupied building. The project will also address major code citations, provide ADA compliant facilities, and reduce maintenance and custodial 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.

Elvey Deferred Maintenance Phase I-C Annex: As part of the first phases of the West Ridge Deferred Renewal Plan, the Elvey Building will be completely renovated. The Elvey Building is home to the Alaska Satellite Facility, Alaska Earthquake Center, and Alaska Volcano Observatory, and multiple academic programs related to geophysics and atmospheric sciences. In the first phases of the renewal work, a small annex of the main building will be renovated. The area has accumulated a significant backlog of maintenance with the original finishes and equipment. Work will demolish all walls and ceilings, back to structure, upgrade the building for current seismic codes, and rebuild the space to current use. A large electrical room will be relocated to a better location, free from roof leaks. New work will provide updated finishes, code compliance, new restrooms, increased ventilation, and better lighting and electrical distribution. The project will also increase the thermal performance of the exterior wall and roof, improving the energy efficiency and reducing operating cost.

FY21 Request Amount: \$13,425,000

Bartlett Hall Plumbing Replacement: Restroom/Shower reconfiguration/Renovation/Plumbing Replacement. Lateral drains in the bathrooms have failed, causing multiple restroom closures in one of the busiest residence halls on campus. Complete renovation of the restrooms is required to maintain building occupancy. Design in progress Fall 2019
Campus Wide Restroom Renovations: Renovate outdated restrooms Campus wide to include new fixtures, finishes, partitions, lighting, etc. This does include major plumbing corrections or converting to ADA. The goal is to renovate a minimum of two restroom suites per year. The TPC is an average cost per multi-stall restroom. Buildings include Duckering, Elvey, Rasmuson, Bunnell, and Gruening
Moore Hall Plumbing Replacement: Restroom/Shower reconfiguration/Renovation/Plumbing Replacement. Lateral drains in the bathrooms have failed, causing multiple restroom closures in one of the busiest residence halls on campus. (\$500k in planning, \$8.0M in construction)
O'Neill Elevator Modernization: O'Neill West Passenger Elevator: Manufactured by US Elevator Installed: 1971. This elevator has never been modernized and US Elevator is no longer in business. Existing equipment is a motor/generator supplying DC power to a motor driven machine with an antiquated relay logic controller. Modernization and Upgrades will include: New machine and 3-phase AC motor, new digital VFD controller, new door operators for car & lobbies, new governor, new ropes, car finishes, lights and control panel.
Bunnell ground level refresh: Perform complete refresh of dated and worn finishes in the main corridor. Replace corridor doors, ceilings/lights, upgrade electric and IT as needed. Remove Asbestos and bring corridor walls into code compliance. Renovate exit pathways of the two north stair towers to lead directly to outside; currently the stairs exit to a non-compliant corridor. Scope of work will include cutting holes on Level 2 landings and installing exit only doors.

Campus Wide Footprint Reduction and Modernization: To reduce UAF's facility inventory and on-going maintenance and operations cost, this project will provide for DM&R of existing facilities to accommodate repurposing and new uses. As spaces are repurposed, renewal work will modernize the facility for increased student success.

Deferred Maintenance and Renewal Small Projects: Contingency funding for small projects, matching to UAF operating funds/grants/gifts, and start-up funds .

UAF Building Envelope and Roof Replacement



Fairbanks Campus Constitution Hall



Howard Cutler Apartments Roof

Benefits & Impacts:

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.

Project Description:

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.

Relevant Priority Criteria: Imminent Failure, Program Mission Continuity, and aligned with all 5 UAF Strategic Goals

Highest Priority Projects:

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.

Fairbanks 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.

FY21 DM&R Capital Request: \$3,795,000

Fairbanks Campus Wide Doors and Security Renewal - Replacement of exterior doors to increase campus building security, reducing maintenance on existing doors. Work includes new electronic locksets and ADA compliance for entries. Project is partially funded in FY19/20.

Constitution Hall Window Replacement: Replace 130 exterior windows at \$6,500 each. Work with Alaska Office of Historic Preservation (OHP) on window style.
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Wood Center Roofs B and C: Replace the last two IRMA roof sections of the Wood Center with built-up roofs and increased insulation.
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Howard Cutler Apt. Roofing: Replace roof and increase insulation value. Project also includes demo of clerestories over bathrooms to mitigate mold and mildew issues in each building due to lack of vapor barrier. Cutler 100, 200, and 400 block are the remaining 3 phases.

UAF Campus Wide Infrastructure and Exterior Renewal



Failed Wood Stave Sewer Pipe



Forty-year old electrical chillers on West Ridge

Benefits & Impacts:

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.

Project Description:

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.

Relevant Priority Criteria: Health, Safety, Imminent Failure, and Timely Execution

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. To eliminate this exorbitant quantity of electrical use and reduce campus operating cost significantly, 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. Initial funding will complete the design with construction funding requested in FY22

FY21 Request Amount: \$5,040,000

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 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: Reduce energy usage in UA Statewide Data Center, Arctic Health Research Center and three other buildings on West Ridge by connecting to the West Ridge District Chilled Water loop. The centralized utility provide low-cost chilled water for conditioning space and equipment rooms from an existing absorption chiller at the Murie Life Sciences Center.
Campus Wide Domestic Water: Repair and Stabilize Water Line Couplings: Approximately 200 locations with dresser couplings are at risk of Failure similar to event at Library in 2017. Repair and stabilize couplings around campus except at Library to North Chandalar where pipe will be replaced.
Core Campus District Cooling/Heating Loop Pipe Repair: Replace the 12-inch supply and returns mains. The existing piping is thin wall steel that is corroding and cannot support the needed system flow or pressure. The system provides centralized, energy efficient cooling and heating to nine buildings in core campus.
Campus Wide Pedestrian Pathways: Replace broken, non-compliant stairs, sidewalks, and curbs/gutters to reduce slips and trips and improve pedestrian mobility. Work includes small areas around campus including North AHRB, Wood Center Bus Stop Stairs (South and East), Bunnell Northwest Entry, Museum Drop-Off, Irving 1 ADA Entrance.
Wood Center East Entry: Regrade the alleyway between Wood Center and Constitution Hall to ensure proper drainage. The area is prone to flooding and ice flows in the winter. Project will also address and correct improper ADA ramp and non-code compliant pub egress stoop. Project will replace stairs up to Constitution
Parking Lot Repairs: Perform as-needed parking lot repairs due to shifting permafrost. Scope includes filling voids, minor patching and drainage.
Eielson North Entry Repairs: Replace the exterior concrete at the North entrance of the Eielson Building. North entry requires grade changes for proper drainage.
O'Neill Exterior Stair Replacement: Replace the failing concrete stairs between O'Neill and WRRB. Install new galvanized metal stair system similar to Sustainable Village or Physical Plant to Duckering. Includes exterior lighting.

MacLean Inupiat House Ramp Repairs: This project will repair the ramps and handrails adjacent to the MacLean Inupiat House. Ramps and Handrails shall be made ADA compliant where required.

Convert feeders from 4KV to 12KV: Replace the remaining 4KV feeders with 12KV feeders. These serve the MBS Complex, Whitaker Building, and various parking lots. Includes redesign work needed at the listed buildings. This is the completion of the UTER project. Some re-design is needed to simplify the remaining work. This work could be phased into \$200K to \$600K sub-projects completed over several years.

UAF Rural and Community Campus Renewal



Non-compliant fuel tank at the Northwest Campus



Outdate fire alarm panel at the Kuskokwim Campus

Benefits & Impacts:

UAF's College of Rural and Community Development campus sites span 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 corrections work is still required to maintain the critically important campuses.

Project Description:

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.

Relevant Priority Criteria: Health, Safety, Imminent Failure, Timely Execution, and Mission Continuity

FY21 Request Amount: \$2,200,000 (based on targeted annual renewal investment)

Bristol Bay Campus M. Wood Building Fire Alarm: Relocate and upgrade fire alarm control panel, wiring and devices.
Kuskowkim Campus Sackett Hall Fire Alarm: Replace 20 year old fire alarm system which is near the end of expected service life.
CRCD Campus Wide Fuel Tank Compliance Fix code deficiencies associated with the fuel tanks and piping for CRCD Facilities
Kuskowkim Campus Vocational Education Center Electrical Code Compliance: Replace MDP in Voc-Tech Center to remove code issue
Bristol Bay Applied Sciences Building Exterior Renovations: The building does not have a code compliant ADA entrance to the building. In addition, the building crawlspace occasionally floods due to subsurface water. This project will install code compliant sidewalks, ramps and handrails leading to the building entrance. It will also improve the drainage around the building and install wet wells to reduce the frequency of the crawlspace flooding.
Kuskowkim Campus Yup'ik Museum, Library, and Cultural Center Fire Alarm: Replace 20 year old fire alarm system which is near the end of expected service life.

FY21 Deferred Maintenance Priorities

UAS

UAS Mourant Building Kitchen Exhaust Fan Replacement



Exhaust Louver, non-code compliant discharge onto roof



Grease accumulation due to HRU failure



Bare HRU grease duct

Benefits & Impacts:

Mourant building Kitchen exhaust fan and Heat Recovery Unit (HRU) has become a significant maintenance concern with regular failures of the HRU that results in excessive maintenance attention in order to keep the HRU operational. For much of the past year, the HRU has been in bypass mode, allowing accumulation of grease in the bypass ducting that has also required additional maintenance attention. A condition assessment and options analysis completed on the system and found the fry grill exhaust fan HRU is not working properly, does not meet required code, and needs to be replaced.

Project Description:

The current project will provide for the replacement of the grill exhaust fan and heat recovery system, upgrading the ducting and integrating the updated system with the current building automation system. Specific tasks associated with the project include the following:

1. Remove HRU and install rooftop up-blast exhaust fan and dedicated grease duct with fire rated enclosure.
2. Upgrade washdown filters in hoods to heat-recovery type.
3. Install makeup air fan with coil and pump to accept heat-recovery energy.
4. Integrate fans and heat recovery into building automation system.

Relevant Priority Criteria: This project supports UAS Program Mission Continuity, and is aligned with UAS Strategic Planning Goals for protection of campus infrastructure and avoiding imminent failure.

Project Funding: UAS estimates that the total cost for this project will be approximately \$375,000 (this amount includes the cost of problem assessment). UAS has commenced initial design work in order to get the project as close to bid ready as possible in anticipation of construction funding availability. The remaining funding required to complete the project is estimated at \$360,000.

FY21 DM&R Capital Request: \$360,000

UAS Novatney Building Roof Replacement



Existing roof damage



Existing substandard roof penetration



Existing roof panorama

Benefits & Impacts:

The Novatney building roofing system has reached the end of its useful life and is scheduled for replacement. UAS strives to address critical infrastructure before the end of its useful life in order to minimize disruption of programs and activities. The Novatney Building currently houses Admissions, the Registrar, the Financial Aid office, Student Accounts, and the Vice Chancellor of Enrollment Management and Student Affairs. All of these programs would be negatively impacted, and the building would be subject to significant damage if the roofing system fails. Replacing the roof before failure will allow the work to be completed with minimal disruption the programs and activities in the building. Design for this project is complete and the project can be bid and constructed as soon as funding becomes available.

Project Description:

This project will replace the existing roofing system with a new EPDM roof system with an expected 40-year life.

Relevant Priority Criteria: This project supports UAS Program Mission Continuity and is aligned with UAS Strategic Planning Goals for protection of campus infrastructure.

Project Funding: Total project cost is estimated at approximately \$500,000. UAS has already identified \$200,000 from the FY20 Deferred Maintenance capital appropriation. An additional \$300,000 will be required to bid the project.

FY21 DM&R Capital Request: \$300,000