

General Services Public Building Fund Buildings Deferred Maintenance **FY2018 Request: \$4,500,000**
Reference No: 49602

AP/AL: Appropriation **Project Type:** Deferred Maintenance
Category: General Government
Location: Statewide **House District:** Statewide (HD 1-40)
Impact House District: Statewide (HD 1-40) **Contact:** Cheryl Lowenstein
Estimated Project Dates: 07/01/2017 - 06/30/2022 **Contact Phone:** (907)465-5655

Brief Summary and Statement of Need:

This project continues addressing deferred maintenance needs in the State Office Building, the Dimond Courthouse, the Atwood Building, the Fairbanks Regional Office Building, the Linny Pacillo Parking Garage and Office, the Palmer State Office Building, and the Alaska Geologic Materials Building.

Funding:	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	Total
1147 PublicBldg	\$4,500,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$24,500,000
Total:	\$4,500,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$24,500,000

<input type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input checked="" type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

Operating & Maintenance Costs:

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	0
Totals:	0	0

Prior Funding History / Additional Information:

Sec1 Ch2 SLA2016 P2 L10 SB138 \$4,000,000
 Sec1 Ch38 SLA2015 P2 L10 SB26 \$3,000,000
 Sec1 Ch18 SLA2014 P2 L18 SB119 \$4,000,000
 Sec1 Ch16 SLA2013 P3 L12 SB18 \$6,250,000
 Sec1 Ch17 SLA2012 P3 L23 SB160 \$6,250,000
 Sec1 Ch5 SLA2011 P3 L22 SB46 \$4,515,000
 Sec4 Ch43 SLA2010 P9 L17 SB230 \$5,800,000
 Sec1 Ch2 SLA2009 P2 L15 SB75 \$2,800,000
 Sec10 Ch29 SLA2008 P32 L28 SB221 \$2,500,000

Project Description/Justification:

Priority	Project Title	Projected Cost	Location	HD
1	State Office Building - Mechanical Phase 2 of 2	1,000,000	Juneau	33-34
2	State Office Building - Electrical Phase 2 of 2	2,000,000	Juneau	33-34
3	Central and Northern Region - Automated Access Control System Update	500,000	Anchorage	16-28

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4	Atwood Building - Building Fan Replacement	845,000	Anchorage	16-28
5	Dimond Courthouse Building - Lighting Energy Efficiency Upgrades	155,000	Juneau	33-34
	Total	4,500,000		

State Office Building – Mechanical Phase 2 of 2 - \$1,000,000

Replace existing return and supply air fans with fan walls (7th floor east), remove and replace the main fan room damper for AHU's, and strengthen and replace unstable fan room walls on all floors.

The State Office Building was constructed forty two years ago. The building's mechanical system was designed with four independent fan rooms, each supplying air to separate quadrants of the building. The original design provided a single fan in each room allowing for a single point catastrophic failure.

Without an operable fan system, the building will not meet the requirements as specified in ANSI/ASHREA 62.1 & 62.2 Standard for Ventilation and Indoor Air Quality. This standard provides the minimum ventilation rates and other measures for new and existing buildings that are intended to provide indoor air quality that is acceptable to human occupants and that minimizes adverse health effects. The quality of indoor air impacts productivity, personal comfort, building maintenance costs, and health and safety either positively or negatively depending on how air quality is managed.

In FY2016, the department completed phase 1, the replacement and modernization of three fan rooms. The scope of work included the replacement of return and supply fans, heating and cooling coils, duct work fire detection system, temperature sensors, and abatement of hazardous materials, asbestos and lead. The project provides improved energy consumption (decrease in utility expenses) and upgrades to the energy management system.

Phase 2 of 2 for FY2018 completes the project in its entirety. The final fan room located on the 7th floor east side provides conditioned air to floors 8, 9, 10, and 11 for the east side of the building.

State Office Building – Electrical Phase 2 of 2 - \$2,000,000

Replace oil-filled electrical transformers with water-cooled, and relocate outside of the building if possible. At main distribution panels, retrofit switches, replace all MCC's. Survey panel loads and redistribute in T&E rooms. Item is a potential hazard to the building and could cause a massive explosion. AEL&P has committed to funding the new transformers. The building's primary transformers are located inside on the 7th floor. Transformers are a fundamental component of the electrical distribution system. The State Office Building original construction included the use of oil-filled transformers, which contain approximately one thousand gallons of oil.

An oil sample analysis indicated the transformer winding insulation is under stress, which means they are nearing their useful life and possible failure. A devastating failure of the transformers could occur when subjected to high load. There is also no blast wall between the transformer room and the 7th floor corridor, and no fire suppression or sprinkler equipment. Failure could result in a massive explosion which would not be contained within the room where the transformers are located; thereby, injury or death could occur and severe collateral damage to the building. The remaining structure would have no electricity, no network, no phones and no datacenter.

The other electrical components include a 480 volt switchboard which is also original to the building. The circuit breakers are no longer manufactured. Currently, maintenance and replacement of the circuit breakers cannot occur without eliminating power to the entire building. The system does not meet current electrical codes.

In FY2016, the department completed phase 1, full design specifications and drawings for competitive solicitation.

Phase 2 of 2 for FY2018 completes the project in its entirety. The new transformers will be located outside of the building and will rely on air for cooling rather than oil. Replacement of the power factor correction equipment will provide reduced energy consumption and efficiency.

Central and Northern Region – Automated Access Control System Update - \$500,000

In FY2006, the department migrated to an automatic access control system. This technology provides improved building safety and security, tracking and managing access, elimination and accountability of a traditional key system, and immediate removal of access to terminated employees or lost cards. The current platform is outdated and upgrading is mandatory to ensure the system remains operational.

The FY2018 project provides a software upgrade to a system that is ten years old. The new software provides improved features and functionality, and in-turn provides the State with the continued ability to properly manage the safety and care of our physical assets and employees.

The automated system is currently deployed in the following buildings: Robert B. Atwood, Linny Pacillo Parking Garage, Palmer State Office Building, Geologic Materials Center Building and a portion of the Fairbanks Regional Office Building.

Atwood Building – Building Fan Replacement - \$845,000

Replace four existing building fans and related energy management system controls. The Atwood Building has two air handling units and four supply fans. The original fans were installed in 1982. The fans and blade pitch assemblies have been rebuilt several times. The last major maintenance was completed in 2007 at a cost of \$170,000. Due to the type and age of the fan assemblies, replacement parts and labor to install them is extremely expensive.

Major maintenance for the fans is overdue. In their existing condition, all four supply fans are at risk of failure at any time. Supply fan F-4 experienced motor tripping failures in January 2016. Two of the other three fans exhibit similar symptoms, placing the building central ventilation system reliability in jeopardy. The fans are currently operated 24 hours a day, seven days a week, because if they are turned off, they do not reliably restart. In the event the fans fail, the building will not meet the requirements of ANSI/ASHREA 62.1 & 62.2 Standard for Ventilation and Indoor Air Quality and the building will not be tenantable.

The existing automated control system for the air handling units is a mix of original pneumatic controls and newer digital control. Replacement of the controls with new streamlined direct digital controls is in alignment with the State's continued effort for energy efficiency.

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FY2018 funding will provide the building with a reliable ventilation system for the next 30 years and will greatly reduce background noise and vibration levels experienced on the 19th floor occupied offices areas and provide decreased energy consumption.

Dimond Courthouse Building – Lighting Energy Efficiency Upgrades - \$155,000

This project replaces lamp light fixtures within the Dimond Courthouse Building with new T8 tubes. The project also includes lamp disposal. The Dimond Courthouse Building is a 77,000 square-foot office building occupied by the Alaska Court System, the Department of Law, and the Department of Public Safety. The past five year annual average electrical expense is \$110,300.

Re-lamping the entire facility at one time with improved energy efficient bulbs is one of the quickest return on investments (ROI) completed by commercial building owners. Building operational savings will be achieved by reducing energy consumption, reducing maintenance labor, and responsible lamp disposal in bulk.

Priorities and cost estimates shown above may need to be changed to accommodate emergency maintenance projects not listed, actual project costs, and other considerations.