

ATTACHMENT #4



MEMORANDUM

TO: Patty Wahto, Airport Manager
FROM: Mike Greene, JNU Airport Project Manager
DATE: October 5, 2022
RE: Projects Office Monthly Report

Project specific summaries of project status and activity are presented below.

Terminal Reconstruction: In September, Dawson Construction continued to work on the project punch-list items completing more of the work items required by the original construction contract, and completing more of the work items that have been introduced into the contract by Requests for Proposal (RFP) and Change Orders.

Look Ahead to Upcoming Activity. The Contractor's schedule for October calls for the continued effort to complete all outstanding project work items. This work will include repairs to the existing terminal heat pumps, modifications to the control of the existing air-handler in the Air Traffic Control Tower, replacement of the acoustic ceiling tiles throughout the terminal, modifications to the Lumicor panels at the main stair, the installation of the stainless steel handrails at the second floor ramp, the installation of the glass guardrail assembly around the second floor light-well, the installation of the replacement light fixtures throughout the terminal, and the installation of the new 135 ramp lighting.

The re-inspection of the new terminal roof assembly occurred on Friday, September 30. The manufacturer's representative asked that additional walk-off mats be installed, and indicated that once these mats were in place, Carlisle would approve / accept the installation. Dawson Construction has not yet furnished JNU with the manufacturer's 30 year roof warranty.

JNU continues to coordinate with Dawson Construction on scheduling the Owner training sessions for the new mechanical systems, the new electrical systems, and the access control systems.

Terminal Fire Alarm Upgrade: Johnson Controls and their electrical subcontractor Alaska Electric continue to work on testing the new fire alarm detection, annunciating devices and public address systems.

JNU has issued RFP 05 to Johnson Controls to relocate the existing ceiling mounted fire alarm devices and speakers in the areas where Dawson Construction will be replacing the acoustic ceiling tiles. The work will include the removal of the ceiling mounted devices from the old ceiling tiles, and mount them in the new ceiling tiles.

JNU has issued RFP 06 to Johnson Controls to investigate and correct the numerous fire alarm trouble signals that have appeared within the terminal fire alarm panel following two years of construction within the terminal. These trouble conditions were the result of above-ceiling work that was performed by multiple contractors, by multiple trades and by selective demolition work that was performed by the Owner.

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Look Ahead: The Contractor's schedule for October calls for the completion of the work associated with RFP 05 and RFP 06, and the completion of all system start-up and testing.

JNU has issued Change Order 03 to Johnson Controls which incorporated RFP 05 and RFP 06 into the BE21-159 contract. This Change Order also extended the Substantial Completion date from April 1, 2022 to October 28, 2022.

Haight & Associates (Electrical Engineer & Designer of Record) remains under contract and is providing construction administration services for this project.

Main Ramp (Part 121/135) Rehabilitation & Remain Overnight (RON) Jet Parking Design. DOWL continues to work on the initial information gathering phase for the ramp project. DOWL's design team conducted a site visit on October 7 during which they toured the airfield to review existing conditions (asphalt paving, storm drain collection systems, lighting systems, etc.). While in Juneau, the DOWL team met with JNU Administration staff, JNU Airfield Maintenance and the Station Managers from Alaska Airlines and Delta Air Lines.

DOWL's surveyors continue to gather topographic / elevations within the proposed RON area, and within the 121 ramp and 135 ramp areas. DOWL also continues to coordinate with the Jensen Yorba Wall (JYW) design team that is working on the Gate 5 Passenger Boarding Bridge (PBB) replacement project and the new Alaska Seaplanes facility.

The first project stakeholder meeting was conducted on September 7, 2022. This meeting served to announce the project to those in attendance and to provide an initial project overview. The second stakeholder meeting has not yet been scheduled, and is pending the development of the ramp work phasing plan as it will relate to the Gate 5 PBB replacement project. DOWL is currently working on setting up a project web page that will provide project information and updates – www.jnuramps.com.

DOWL continues to work on the development of the project Construction Safety Phasing Plan (CSPP), which is also dependent on the development of the Gate 5 PBB project schedule.

The project schedule is still calling for bidding the construction of this project in the spring of 2023.

Sand/Chemical Building – Roof Warranty: A representative from Carlisle SynTec Systems performed a follow-up inspection of the Sand/Chemical roof installation on September 30, 2022. The representative did not accept the installation and advised Dawson Construction that the heat-welded membrane seams within the two large roof valleys required additional attention. Dawson Construction currently plans on addressing the additional seaming work as soon as possible, weather permitting.

Carlisle / Dawson Construction has not yet furnished JNU with the manufacturer's roof warranty or this new installation.

Sand/Chemical Building - Commissioning: No change since last report. JNU has directed PDC Engineers to suspend work on the commissioning effort on the Snow Removal Equipment Building (SREB) and Sand/Chemical building mechanical systems until GSHP-1 has been repaired, and until SREB pumps P-1A and P-1B have been replaced.

Rehabilitate Access Road (Float Pond Improvements – Phase 2): The City & Borough of Juneau (CBJ) Engineering - Contracts issued the Notice of Award, Notice to Proceed for this project to SECON on October 4, 2022. The award was in the amount of \$2,272,463 which represents the project base bid plus additive alternates A and B. JNU is currently working with SECON to start the administrative submittal (contractor schedule, submittal schedule, schedule of values, key personnel list, quality control plan, safety plan compliance document etc.) review and acceptance process.

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The scope of work for the project will include raising a portion of the existing roadbed, the introduction of a drainage ditch, armoring a portion of the southern pond bank with rock and reconstructing / re-positioning 14 of the existing concrete float plane dock headwalls that are located along the south side of the pond. The order of the work is critical, with the in-water pond embankment work needing to be done prior to the road work.

Current Project Schedule:

- Float Pond Closure: December 1, 2022
- Float Pond Re-Open: March 31, 2023
- Substantial Completion: June 15, 2023

Limited Construction Administration and Inspection services will be provided by PND Engineers, who are the engineers of record for this project.

Runway Safety Area (RSA) Expansion Phase IIC: No change since last report. The project has been determined to be Substantially Complete, and both JNU and DOWL continue to work with the Contractor (SECON) on finalizing the project close-out documentation. Final payment has not yet been made to SECON. DOWL continues to finalize the project as-built record documents and the final engineer's report based on JNU review comments.

Taxiway (TWY) A Rehabilitation, Taxiway D-1 Relocation and Taxiway E Realignment: The project has been determined to be substantially complete, and JNU continues to work with DOWL to wrap up the remaining punch-list work items. JNU also continues to work on finalizing the work associated with the retainage of the existing Airfield Lighting Regulator Vault (ALRV). The existing ALRV was to have been removed from service as part of the TWY project, but it was subsequently decided during construction to retain the ALRV as a 100% redundant lighting control system. JNU continues to work with DOWL and Morris Engineering to develop and complete the dual-ALRV system.

JNU has issued RFP 029 Additional ALRV Work to address the following:

1. CROSS CONNECT CABINET: Need to add a cross connect cabinet to the old ALRV. In order to have two operational ALRVs; one primary and the second backup, a cross connect cabinet is needed at each ALRV. The cross connect cabinet allows the electrician to verify that all regulators are disconnected from the field circuits at the ALRV not being used and all the field wires are properly connected to regulators at the ALRV being used. Without this safety feature explosions could occur since airfield lighting has no protective devices on the load side of a regulator. It is critical that each and every regulator cable and every field cable be present in each cabinet and properly labeled the same so the safety checks can be made prior to energizing the regulators.
2. RUNWAY GUARD LIGHT REGULATOR: Existing installation only has one runway guard lighting regulator. It is in the old ALRV. Need to add one to the new ALRV so lighting control can be switched between ALRVs without recommissioning the Airfield Lighting Controls & Monitoring System (ALCMS) each time a regulator is un-installed from one ALRV and moved to the other and reinstalled. The runway guard light regulators are much smaller than the other regulators.
3. ACE 3 MONITORING MODULE: Need to monitor status of the generator that provides power to the ALRV during a utility outage. The ALRVs do not share a generator. Currently only have one monitor at the old ALRV. Need one at the new ALRV.
4. CABLE LABELING IN THE FIELD: Need to add labels to identify existing cabling that is not in use but is being retained so the airfield circuits can be kept operational by the old ALRV during future construction projects on TWY A or an intersection that would otherwise require temporary wiring. Keeping the old ALRV allows the airfield to power the lighting when the circuits from the new ALRV would be disconnected during construction.

A proposal for RFP 029 has not yet been received from SECON – Ever Electric.

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Outstanding issues:

- Maintenance contract with NC Machinery / CAT for the new generator.
- Maintenance contract with Johnson Controls to provide bi-annual code required inspections of the clean agent system.

Construction Administration & Inspection services continue to be provided by DOWL who is serving as the Project Engineer. Field inspection work is being provided by Morris Engineering Group under contract to DOWL.

Gate K (Crest Street) Culvert at Jordan Creek: JNU, working with CBJ Engineering - Contracts, has contracted with proHNS to provide design services to prepare bidding and construction documents for the replacement of the culvert. proHNS started their field survey work during the week of October 3-7 and the goal remains to release this project for competitive bid as soon as possible. The current project schedule calls for construction to begin in the early spring of 2023.

As mentioned in the last report, engineers from proHNS completed their initial site inspection on August 26 and, while on site, confirmed that the culvert exhibits deformation, and that the location of the deformed area corresponds to the depression in the asphalt paving above. Following this inspection, it was the opinion of the engineers that the culvert was not in danger of imminent collapse, but did need to be replaced as soon as practical.

Fuel Station Access Control/Fuel Monitoring/Tracking: In July 2022 JNU, working through CBJ Engineering - Contracts, released an RFP for design services under CBJ's term contract for design consultant services to develop design and construction documents for the introduction of an access control system for the airfield fuel station. The RFP had identified a scope of work that included the introduction of an access control / fuel theft-prevention system, fuel monitoring and usage tracking, and the introduction of a back-up generator to provide emergency stand-by power for the fuel station.

On September 1, 2022, CBJ Engineering - Contracts advised JNU that no responses to the RFP had been received. This indicated that, at that time, there was no interest (or availability) within the design community to work on this project. JNU is currently soliciting interest from local electrical engineers to provide a fee proposal for this project. This funding was approved for CARES funding by the Board earlier this year.

Upgraded Power to the Northwest Development Area (NWDA): Alaska Electric Light & Power (AEL&P) has suspended work on extending a new 12.5 KW 3-phase electrical service into the NWDA. This work is intended to provide upgraded power service to the nine (9) new hangar lease lots that are located in the NWDA. This power will also be used to provide upgraded site lighting within the NWDA. AEL&P will resume work as soon as they receive the necessary cables/conductors needed to complete the installation.

JNU is working with RESPEC (Ben Haight) to review the power and data/communication distribution plan for this project.

Daikin Maintenance Agreement (from agenda): On September 26, 2022, JNU received a fee proposal from DAIKIN (2022 Daikin Applied OMNIA Public - JIA Airport Campus Maintenance) to provide quarterly inspection, routine maintenance (RM) and preventative maintenance (PM) of the heat pump equipment and air-handling equipment within the Terminal, SREB and Sand-Chemical buildings.

This proposal had been requested by JNU because current Airport staffing is unable to provide the routine inspection and preventative/routine maintenance needed to keep the airport campus HVAC, refrigeration and electronic systems running at peak efficiency. The timely inspections outlined within the DAIKIN proposal will minimize or prevent unscheduled down-time by detecting deficiencies early and completing needed repairs as they are found.

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The three-year DAIKIN proposal represents an expansion of the existing maintenance contract with Daikin, which previously addressed only the three large heat pump units within the SREB and Sand-Chem buildings.

Per this proposal, the associated annual costs are as follows:

YEAR 1: \$83,594.00 YEAR 2: \$86,110.00 YEAR 3: \$88,700.00*

* prices reflect a fixed percentage of 3% escalation for inflation.

The inspection, routine and preventative maintenance work tasks that are to be performed by DAIKIN's technicians will be as follows:

Scroll Chillers – Air and Water Cooled (Daikin TGZ060B)

Annual Inspection:

- Check-in with facility maintenance manager to discuss any known operating issues or deficiencies.
- Check units for proper operation, interlocks, controls, and excessive noise or vibration.
- Tighten all starter, motor and control wiring connections.
- Visually inspect condition of starter contacts and overloads for wear, pitting and any signs of overheating.
- Megohmmeter (Meg) compressor motors and record readings.
- Check operation of crankcase heater.
- Check evaporator shell heaters and controls for freeze protection.
- Check condition, operation and proper liquid/air levels in expansion tanks.
- Inspect condition of motor, fan wheel for bent blades, debris, proper rotation and airflow.
- Check and lubricate motor and fan bearings, screws and motor mounts.
- Visually inspect coils for damage, obstructions and cleanliness.
- Check relief valves for leakage.
- Check operation of refrigerant cycle, pump-down cycle, controls, refrigerant charge and oil levels.
- Test differential oil pressure switch for proper setting.
- Check operation of air compressors.
- Inspect water piping and valves for leakage, check condition of unit and pipe insulation.
- Visually inspect units, piping and accessories for any signs of oil or refrigerant leakage.
- Check operating and safety controls.
- Review all microprocessor, thermostats and/or diagnostic control codes.
- Check flow switch devices and external pump interlocks for proper operation.
- Check condition of thermometers and gauges. Compare with operating controls.
- Check sight glasses for flashing/moisture and/or the presence of oil.
- Check evaporator and condenser flow rates, temperatures, interlocks and safeties.
- Complete operating log of temperatures, pressures, amperages, voltages and review all readings.
- Log chiller start and run times.
- Review services performed and report any uncorrected deficiencies to facility maintenance manager.

Operational Inspection:

- Check-in with facility maintenance manager to discuss any known operating issues or deficiencies.
- Check units for proper operation, interlocks, controls, and excessive noise or vibration.
- Visually inspect condition of starter contacts and overloads for wear, pitting and any signs of overheating.
- Inspect condition of motor, fan wheel for bent blades, debris, proper rotation and airflow.
- Check operation of lubrications system and crankcase heater.
- Visually inspect units, piping and accessories for any signs of oil or refrigerant leakage.
- Visually inspect coils for damage, obstructions and cleanliness.
- Check evaporator and condenser flow rates.
- Check operating and safety controls.
- Review all microprocessor diagnostic codes.
- Check condition of thermometers and gauges. Compare with operating controls.
- Check sight glasses for flashing/moisture and/or the presence of oil.
- Complete operating log of temperatures, pressures, amperages, voltages and review all readings.
- Log chiller starts and run times.
- Review services performed and report any uncorrected deficiencies to facility maintenance manager.

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Rooftop Packaged Systems (Unitary Equipment, Heating and Cooling) Desert Aire Q50H, Climate Master TOHW20B

Operational Inspection:

- Check-in with facility maintenance manager to discuss any known operating issues or deficiencies.
- Check units for proper operation, interlocks, controls, and excessive noise or vibration.
- Visually inspect condition of starter contacts and overloads for wear, pitting and any signs of overheating.
- Inspect air filters and/or media. Replace or clean.
- Inspect evaporator drain pan and condensate trap for cleanliness.
- Check condensate pump operation.
- Inspect condition of motor, fan wheel, blowers and blower pulleys (bent blades, debris, proper rotation and airflow).
- Check belts for condition, proper tension and alignment. Adjust tension if required. Replace as needed.
- Inspect, clean and/or lubricate all mechanical moving components, bearings and couplings as needed.
- Inspect chilled water piping and valves for leakage, check condition of unit and pipe insulation.
- Visually inspect coils for damage, obstructions and cleanliness.
- Check compressor operation. Check oil level in compressor.
- Check operation of lubrications system and crankcase heater.
- Check operation of low ambient control devices.
- Review all microprocessor diagnostic codes.
- Start unit and check operating and safety controls.
- Check superheat and sub-cooling and adjust.
- Check sight glasses for flashing/moisture and/or the presence of oil.
- Complete operating log of temperatures, pressures, amperages, voltages and review all readings.
- Review services performed and report any uncorrected deficiencies to facility maintenance manager.

Pre-Cooling (Spring) – Seasonal Inspection:

- Check-in with facility maintenance manager to discuss any known operating issues or deficiencies.
- Check units for proper operation, interlocks, controls, and excessive noise or vibration.
- Tighten all starter, motor and control wiring connections.
- Visually inspect condition of starter contacts and overloads for wear, pitting and any signs of overheating.
- Meg compressor motors and record readings.
- Inspect air filters and/or media. Replace or clean.
- Visually inspect coils for damage, obstructions and cleanliness.
- Inspect water piping and valves for leakage, check condition of unit and pipe insulation.
- Clean evaporator drain pan and condensate trap.
- Check condensate pump operation.
- Check ductwork for condensation and air leaks at the unit.
- Check belts for condition, proper tension and alignment. Adjust tension if required. Replace as needed.
- Inspect condition of motor, fan wheel, blowers and blower pulleys. (bent blades, debris, proper rotation and airflow)
- Check and lubricate motor and fan bearings, screws and motor mounts.
- Check vibration isolation pads and springs.
- Check unit controls, thermostats, economizers, valves, dampers, louvers, linkages and shutters. Lubricate all pivot points.
- Check inlet guide vanes and discharge dampers for proper set-up and operation. Lubricate per manufacturer's recommendations.
- Check operation of refrigeration cycle, reversing valve, pump-down cycle, controls, refrigerant charge and oil level.
- Complete operating log of temperatures, pressures, amperages, voltages and review all readings.
- Check motor operating voltages and amperages.
- Check compressor operation.
- Check operation of crankcase heater.
- Check operation of low ambient control devices.
- Check operation of unit control module.
- Review all microprocessor diagnostic codes.
- Start unit and check operating and safety controls.
- Check superheat and sub-cooling and adjust.

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- Check sight glasses for flashing / moisture and/or the presence of oil.
- Review services performed and report any uncorrected deficiencies to facility maintenance manager.

Pre-Heating (Fall) – Seasonal Inspection:

- Check-in with facility maintenance manager to discuss any known operating issues or deficiencies.
- Check units for proper operation, interlocks, controls, and excessive noise or vibration.
- Tighten all starter, motor and control wiring connections.
- Visually inspect condition of starter contacts and overloads for wear, pitting and any signs of overheating.
- Inspect air filters and/or media. Replace or clean.
- Visually inspect coils for damage, obstructions and cleanliness.
- Inspect evaporator drain pan and condensate trap for cleanliness.
- Check condensate pump operation.
- Inspect, clean and/or lubricate all mechanical moving components, bearings and couplings as needed.
- Check operation of freeze protection devices.
- Check belts for condition, proper tension and alignment. Adjust tension if required. Replace as needed.
- Inspect condition of motor, fan wheel, blowers and blower pulleys. (bent blades, debris, proper rotation and airflow)
- Check and lubricate motor and fan bearings, screws and motor mounts.
- Check vibration isolation pads and springs.
- Complete operating log of temperatures, pressures, amperages, voltages and review all readings.
- Check motor operating voltages and amperages.
- Visually inspect units, piping and accessories for any signs of oil or refrigerant leakage.
- Check operation of refrigeration cycle, reversing valve, pump-down cycle, controls, refrigerant charge and oil level.
- Check compressor operation.
- Check operation of crankcase heater.
- Check operation of low ambient control devices.
- Check operation of unit control module.
- Review all microprocessor diagnostic codes.
- Start unit and check operating and safety controls.
- Check superheat and sub-cooling and adjust.
- Check sight glasses for flashing / moisture and/or the presence of oil.
- Review services performed and report any uncorrected deficiencies to facility maintenance manager.

Coils Services:

- Clean condenser coils.

Filters:

- Replace customer provided airfilters / wash filters.

Water Source Heat Pump (WSHP) Climate Master TSH, TMW, TSV & McQuay WGHW420

Operational Inspection:

- Inspect evaporator drain pan and condensate trap for cleanliness.
- Check condensate pump operation.
- Inspect condition of motor, fan wheel, blowers and blower pulleys. (bent blades, debris, proper rotation and airflow)
- Check belts for condition, proper tension and alignment. Adjust tension if required. Replace as needed.
- Inspect, clean and/or lubricate all mechanical moving components, bearings and couplings as needed.
- Inspect chilled water piping and valves for leakage, check condition of unit and pipe insulation.
- Visually inspect coils for damage, obstructions and cleanliness.
- Check compressor operation. Check oil level in compressor.
- Check operation of crankcase heater.
- Check operation of low ambient control devices.
- Review all microprocessor diagnostic codes.
- Start unit and check operating and safety controls.
- Check superheat and sub-cooling and adjust.
- Check sight glasses for flashing / moisture and/or the presence of oil.
- Complete operating log of temperatures, pressures, amperages, voltages and review all readings.

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- Check-in with facility maintenance manager to discuss any known operating issues or deficiencies.
- Check units for proper operation, interlocks, controls, and excessive noise or vibration.
- Inspect air filters and/or media. Replace or clean.
- Visually inspect condition of starter contacts and overloads for wear, pitting and any signs of overheating.

Pre-Cooling (Spring) – Seasonal Inspection:

- Check-in with facility maintenance manager to discuss any known operating issues or deficiencies.
- Check units for proper operation, interlocks, controls, and excessive noise or vibration.
- Tighten all starter, motor and control wiring connections.
- Visually inspect condition of starter contacts and overloads for wear, pitting and any signs of overheating.
- Meg compressor motors and record readings.
- Inspect air filters and/or media. Replace or clean.
- Visually inspect coils for damage, obstructions and cleanliness.
- Inspect water piping and valves for leakage, check condition of unit and pipe insulation.
- Clean evaporator drain pan and condensate trap.
- Check condensate pump operation.
- Check ductwork for condensation and air leaks at the unit.
- Check belts for condition, proper tension and alignment. Adjust tension if required. Replace as needed.
- Inspect condition of motor, fan wheel, blowers and blower pulleys. (bent blades, debris, proper rotation and airflow)
- Check and lubricate motor and fan bearings, screws and motor mounts.
- Check vibration isolation pads and springs.
- Check unit controls, thermostats, economizers, valves, dampers, louvers, linkages and shutters. Lubricate all pivot points.
- Check inlet guide vanes and discharge dampers for proper set-up and operation. Lubricate per manufacturer's recommendations.
- Check operation of refrigeration cycle, reversing valve, pump-down cycle, controls, refrigerant charge and oil level.
- Complete operating log of temperatures, pressures, amperages, voltages and review all readings.
- Check motor operating voltages and amperages.
- Check compressor operation.
- Check operation of crankcase heater.
- Check operation of low ambient control devices.
- Check operation of unit control module.
- Review all microprocessor diagnostic codes.
- Start unit and check operating and safety controls.
- Check superheat and sub-cooling and adjust.
- Check sight glasses for flashing / moisture and/or the presence of oil.
- Review services performed and report any uncorrected deficiencies to facility maintenance manager.

Pre-Heating (Fall) – Seasonal Inspection:

- Check-in with facility maintenance manager to discuss any known operating issues or deficiencies.
- Check units for proper operation, interlocks, controls, and excessive noise or vibration.
- Tighten all starter, motor and control wiring connections.
- Visually inspect condition of starter contacts and overloads for wear, pitting and any signs of overheating.
- Inspect air filters and/or media. Replace or clean.
- Visually inspect coils for damage, obstructions and cleanliness.
- Inspect evaporator drain pan and condensate trap for cleanliness.
- Check condensate pump operation.
- Inspect, clean and/or lubricate all mechanical moving components, bearings and couplings as needed.
- Check operation of freeze protection devices.
- Check belts for condition, proper tension and alignment. Adjust tension if required. Replace as needed.
- Inspect condition of motor, fan wheel, blowers and blower pulleys. (bent blades, debris, proper rotation and airflow)
- Check and lubricate motor and fan bearings, screws and motor mounts.
- Check vibration isolation pads and springs.
- Complete operating log of temperatures, pressures, amperages, voltages and review all readings.
- Check motor operating voltages and amperages.

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- Visually inspect units, piping and accessories for any signs of oil or refrigerant leakage.
- Check operation of refrigeration cycle, reversing valve, pump-down cycle, controls, refrigerant charge and oil level.
- Check compressor operation.
- Check operation of crankcase heater.
- Check operation of low ambient control devices.
- Check operation of unit control module.
- Review all microprocessor diagnostic codes.
- Start unit and check operating and safety controls.
- Check superheat and sub-cooling and adjust.
- Check sight glasses for flashing / moisture and/or the presence of oil.
- Review services performed and report any uncorrected deficiencies to facility maintenance manager.

Filters:

- Replace customer provided air filters / wash filters.

VRV – Variable Refrigerant Volume Units – Daikin FXZQ

Annual Inspection:

- Tighten all starter, motor and control wiring connections.
- Visually inspect condition of starter contacts and overloads for wear, pitting and any signs of overheating.
- Check units for proper operation, interlocks, controls, and excessive noise or vibration.
- Check insulation condition for compressors, fan motors and solenoid valve coils by 500V megger tester.
- Verify operation of the air side.
- Measure voltages and amperages and check voltage imbalance.
- Check operating temperatures, superheat & refrigerant pressure of unit by VRV service checker after 20 min from compressor operation started.
- Check actuators (EEV's, solenoid valves, crankcase heaters and inverter frequency) operation by VRV service checker after 20 min from compressor operation started.
- Brush clean outdoor unit heat exchanger coil.
- Clean external interlocks for proper operation.
- Review services performed and report any uncorrected deficiencies to facility maintenance manager.

Operational Inspection:

- Visually inspect condition for wear and pitting.
- Inspect air filters and/or media. Replace or clean.
- Verify operation of the air side.
- Verify unit thermostat controller operates properly.
- Verify all fans operate properly in response to controllers.
- Check operating temperatures and superheat for each indoor unit by VRV service checker.
- Check actuators (EEV, thermistors) operation by VRV service checker.
- Install anti-microbial tablets(s) in condensate pan.
- Review services performed and report any uncorrected deficiencies to facility maintenance manager.

Filters:

- Replace customer provided air filters / wash filters.

STANDARD INCLUSIONS:

Per the DAIKIN proposal, the executed agreement will include travel to and from Juneau, preventative maintenance materials, and any trips to supply houses to procure materials. The customer will receive a written report for the inspection and/or services provided.

CLARIFICATIONS and EXCLUSIONS:

- All work is to be performed during normal business hours.
- This proposal assumes that uninterrupted access will be provided to all equipment during the time of visits.
- Filters are to be provided by JIA for quarterly replacement by Daikin.
- Any repairs or recommendations will be quoted separately from the maintenance agreement.
- Travel costs are estimated and are subject to change with written notice by Daikin.

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- Temporary heating / cooling is not included.
- The Daikin proposal assumes that water is present and available for annual condenser cleaning.
- Chemical water treatment is not included.
- Emergency Coverage: Not included, available on a T&M basis.

The following represents an inventory of all of the HVAC, refrigeration, heat-pump and electrical equipment within the Terminal, the Snow Removal Equipment Building (SREB) and the Sand-Chemical building that will be covered by this expanded maintenance agreement:

Equipment Type	Floor	Area Served	Tag	Manufacturer	Model	Serial	Annual	Operational	Filter Change
WSHP	1	A	(R)HP-34	Climate Master	TSH042	TBD	1	3	4
WSHP	1	A	HP-1	Climate Master	TSH024	TBD	1	3	4
WSHP	1	A	HP-101	Climate Master	TSH009	TBD	1	3	4
WSHP	1	A	HP-102	Climate Master	TSH018	TBD	1	3	4
WSHP	1	A	HP-104	Climate Master	TSH036	TBD	1	3	4
WSHP	1	A	HP-105	Climate Master	TSH009	TBD	1	3	4
WSHP	1	A	HP-2	Climate Master	TSH036	TBD	1	3	4
WSHP	1	A	HP-27	Climate Master	TSH024	TBD	1	3	4
WSHP	1	A	HP-303	Climate Master	TMW340	TBD	1	3	4
WSHP	1	A	HP-304	Climate Master	TMW340	TBD	1	3	4
WSHP	1	A	HP-8	Climate Master	TSH048ECM	TBD	1	3	4
WSHP	1	B	HP-105	Climate Master	TSH009	TBD	1	3	4
WSHP	1	B	HP-106	Climate Master	TSH009	TBD	1	3	4
WSHP	1	B	HP-107	Climate Master	TSH018	TBD	1	3	4
WSHP	1	B	HP-108	Climate Master	TSH024	TBD	1	3	4
WSHP	1	D	HP-25	Climate Master	TSH036	TBD	1	3	4

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Equipment Type	Floor	Area Served	Tag	Manufacturer	Model	Serial	Annual	Operational	Filter Change
WSHP	1	E	HP-29	Climate Master	TSH018	TBD	1	3	4
WSHP	1	E	HP-3	Climate Master	TSH036	TBD	1	3	4
WSHP	1	E	HP-4	Climate Master	TSH048	TBD	1	3	4
WSHP	1	E	HP-6	Climate Master	TSH036	TBD	1	3	4
WSHP	1	E	HP-7	Climate Master	TSH048	TBD	1	3	4
WSHP	2	A	HP-10	Climate Master	TSH048	TBD	1	3	4
WSHP	2	A	HP-12	Climate Master	TSH070	TBD	1	3	4
WSHP	2	A	HP-13	Climate Master	TSH060	TBD	1	3	4
WSHP	2	A	HP-201	Climate Master	TSH012	TBD	1	3	4
WSHP	2	A	HP-203	Climate Master	TSH009	TBD	1	3	4
WSHP	2	A	HP-214	Climate Master	TSH009	TBD	1	3	4
WSHP	2	A	HP-24	Climate Master	TSH024	TBD	1	3	4
WSHP	2	A	HP-32	Climate Master	TSH060	TBD	1	3	4
WSHP	2	A	HP-9	Climate Master	TSH024	TBD	1	3	4
WSHP	2	D	HP-20	Climate Master	TSH018	TBD	1	3	4
WSHP	2	D	HP-22	Climate Master	TSH060	TBD	1	3	4
WSHP	2	E	HP-11	Climate Master	TSH036	TBD	1	3	4
WSHP	2	E	HP-14	Climate Master	TSH042	TBD	1	3	4
WSHP	2	E	HP-15	Climate Master	TSH018	TBD	1	3	4
WSHP	2	E	HP-16	Climate Master	TSH018	TBD	1	3	4
WSHP	2	E	HP-16	Climate Master	TSH018	TBD	1	3	4
WSHP	2	E	HP-17	Climate Master	TSH024	TBD	1	3	4
WSHP	2	E	HP-19	Climate Master	TSH060	TBD	1	3	4
WSHP	2	E	HP-35	Climate Master	TSH036	TBD	1	3	4
WSHP	2	E	HP-5	Climate Master	TSH036	TBD	1	3	4
VRV	3	FAA Twr	AHP-1	Daikin	REYQ96XAYDU	TBD	1	3	0
DOAS	3	PH	DOAS-2	Desert Aire	Q50H	TBD	1	3	4
WSHP	3	PH	HP-109	Climate Master	TSV060	TBD	1	3	4
WSHP	3	PH	HP-202	Climate Master	TSV018	TBD	1	3	4
WSHP	3	PH	HP-205	Climate Master	TSV-018	TBD	1	3	4

ATTACHMENT #4

Equipment Type	Floor	Area Served	Tag	Manufacturer	Model	Serial	Annual	Operational	Filter Change
WSHP	3	PH	HP-206	Climate Master	TSV012	TBD	1	3	4
WSHP	3	PH	HP-207	Climate Master	TSV012	TBD	1	3	4
WSHP	3	PH	HP-208	Climate Master	TSV006	TBD	1	3	4
WSHP	3	PH	HP-209	Climate Master	TSV009	TBD	1	3	4
WSHP	3	PH	HP-210	Climate Master	TSV018	TBD	1	3	4
WSHP	3	PH	HP-211	Climate Master	TSV012	TBD	1	3	4
WSHP	3	PH	HP-212	Climate Master	TSV009	TBD	1	3	4
WSHP	3	PH	HP-301	Climate Master	TMW060	TBD	1	3	4
WSHP	3	PH	HP-302	Climate Master	TMW340	TBD	1	3	4
VRV	4	FAA Twr	BS-2	Daikin	BSQ36TVJ	TBD	1	3	0
VRV	4	FAA Twr	IHP-5	Daikin	FXZQ15TAVJU	TBD	1	3	4
VRV	CAB	FAA CAB	BS-1	Daikin	BS4Q54TVJ	TBD	1	3	0
VRV	CAB	FAA CAB	IHP-1	Daikin	FXZQ18TAVJU	TBD	1	3	4
VRV	CAB	FAA CAB	IHP-2	Daikin	FXZQ18TAVJU	TBD	1	3	4
VRV	CAB	FAA CAB	IHP-3	Daikin	FXZQ18TAVJU	TBD	1	3	4
VRV	CAB	FAA CAB	IHP-4	Daikin	FXZQ18TAVJU	TBD	1	3	4
DOAS	FR	Fan Rm	DOAS-1	Climate Master	TOHW20BFMIBBAAS	TBD	1	3	4
WSHP	FR	Fan Rm	HP-26	McQuay	WGHW420	TBD	1	3	4
WSHP	FR	Fan Rm	HP-30	McQuay	WGHW420	TBD	1	3	4
WSHP	FR	Fan Rm	HP-31	McQuay	WGHW420	TBD	1	3	4
WSHP	SCAB	SCAB	GSHP-1	Daikin	WWHA1420	190605101001	1	3	4
Chiller	SREB	SREB	CH1A	Daikin	TGZ060B	STNU170900150	1	3	0
Chiller	SREB	SREB	CH1B	Daikin	TGZ060B	STNU170900166	1	3	0

Lavatory Waste Dump Site: No change since last report. JNU has updated the project construction cost estimate (\$94K), and the overall project budget (\$128K) based on a budgetary fee estimate (\$19K) provided by PDC Engineers to complete the design work and the associated bidding and construction documents. This project remains on hold pending the identification of a funding source for the design component.

Hangar M Site Survey & Topo: No change since last report. JNU received DOWL's topographic map of the site that surrounds the Block M hangars. This map confirms that the surrounding site is extremely flat. It also confirms that the recent work that introduced a trench drain along the south side of the hangar did introduce positive drainage / fall away from the south facing hangar doors. The map also shows that there are areas on the north side of the hangars where the asphalt surface slopes towards the hangar doors.

SREB Wash Bay Water Protection: No change since last report. JNU has issued an updated RFP package to Dawson Construction (the next available Contractor on CBJ Engineering's Term Contractor contract list) for this work. The RFP is asking for a proposal to patch and paint the water damaged gypsum wallboard; to prep, seal and re-paint the interior face of the exterior vertical lift door; and to furnish and install splash curtains and plastic panel ceiling splash protection. Dawson has not yet submitted this proposal.

End of Report