



## MEMORANDUM

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TO: Patty Wahto, Airport Manager

FROM: Mike Greene, JNU Airport Project Manager

DATE: December 4, 2024

RE: Projects Office Monthly Report

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

**Terminal Reconstruction:** JNU continues to work on finalizing the following outstanding work items:

**Ground Source Loop Field System Modifications:** Dawson Construction / Harri Plumbing have completed work on the modifications to the terminal's loop field system per Request for Proposal (RFP) 190R3. This work consisted of:

- **Task 3:** The introduction of Fernox heating, ventilating and air conditioning (HVAC) Protector F1 inhibitor to the 6,700-gallon 15% methanol, 85% water solution at a concentration of 0.5% of the fluid volume or approximately 90 gallons.
- **Task 4:** The introduction of methanol as necessary to bring the total building solution to the desired 15% methanol, 85% water by volume mixture.

JNU Building Maintenance has reported that they are still observing contaminants / sediment within the loop field medium (methanol), even after the above work tasks have been completed, and with the equipment strainers, pump strainers, by-pass filter and dirt separators in place. The concern has been raised that the system is not getting any cleaner over time, and that somehow the contaminants / sediment keeps replenishing itself.

Per RESPEC's mechanical engineers: *Sources of the sediment could include corrosion in the steel piping from previously untreated fluids or from contamination during construction. It is also possible that this higher flow rate through the system, post north terminal project construction, dislodged material in the piping system that is now slowly being removed from the piping system. Piping in the branch lines to the terminal heat pump units would be harder to remove than through the mains and will take longer to become clear as that sediment has to be removed at the smaller HP inlet strainers. If the system is not getting any cleaner over time, then additional work may be required to clean the system. Below are some thoughts -*

*Options*

1. *Keep blowing out the main pump strainers and the air separator strainer in the piping mains and cleaning branch piping heat pump strainers and backwashing the HP coils as currently being done. It is possible that the sediment that is in the piping system is being removed, especially in the mains (bypass filter, dirt separator, pump strainers), but more slowly at the terminal heat pump strainers removing what was already in the smaller branch piping. This will take time. Are the main system pump strainers getting cleaner over time when maintenance is being done, or are they continually full of sediment? Same with the dirt/air separator on the main system return piping. When a blowdown is being done, is it somewhat clear or is there a lot of sediment. The dirt*

*separator and large pump strainers are designed to catch most of the sediment in the system. A possible metric to determine if the overall system is getting cleaner over time, is to compare sediment discharge from the dirt separator blowout regularly over time.*

2. *Replace the entire ground source fluid system. Options would be methanol as currently used or changing to propylene glycol.*
3. *Contact a hydronic system fluid treatment specialist to examine the fluid chemistry, analyze the sediment, and inspect some of the piping in order to recommend or implement a treatment, cleaning, or fluid replacement plan for the distributed ground source piping system.*

At the present time, JNU Building Maintenance is adhering to Option 1 as outlined above. Option 2 was investigated prior to the finalization of RFP 190R3 and was determined to be unaffordable. The change from methanol to propylene glycol was determined to not be in JNU's best interest because the glycol's heat exchange rate was less than that associated with methanol and would prevent any new terminal addition from being able to benefit from the use of the existing loop field. Option 3 is still on the table and JNU Building Maintenance has been asked to provide samples of the sediment for analysis.

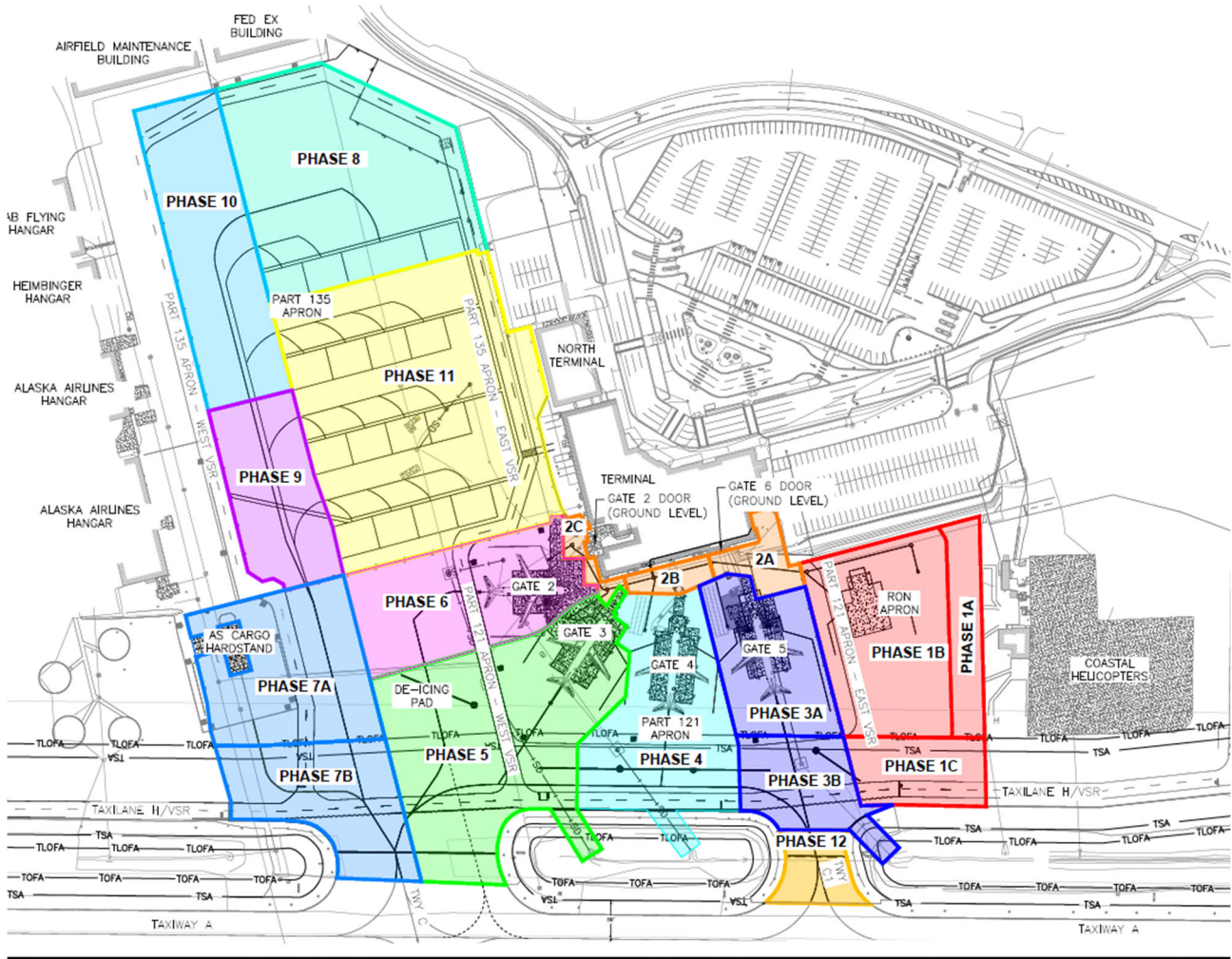
JNU Building Maintenance also continues to work on the replacement of the new flexible hoses for thirty (30) of the older heat pumps.

**Lighting Control Replacement:** JNU has asked Dawson Construction to provide a proposed start date and completion date for RFP 183 – Lighting Control Replacement. This RFP will replace the failing lighting control equipment within the older portion of the terminal. This control equipment is no longer being supported by the manufacturer and the control of much of the interior and exterior lighting in this portion of the terminal is either being done manually or is being left on 24/7. Dawson Construction has not yet furnished a schedule for this work.

**Terminal Air Balancing (TAB):** The final balancing of the terminal's new and old mechanical HVAC systems has still not been completed because of continuing problems with some of the older system components. JNU staff continues to work with RESPEC's mechanical engineers to determine whether the TAB work may proceed in light of the continuing issues with these older components.

- DOAS-1 (Dedicated Outside Air System) unit: This air-handler, originally installed in 2009, brings in outside air to the older portion of the terminal. Repairs to DOAS-1 were completed as part of the terminal reconstruction project, but additional repairs are now needed. Recent voltage spikes have damaged some of the air-handler components, including the VFD (Variable Frequency Drive) for the DOAS-1 exhaust fan. JNU Building Maintenance is currently looking at repair / replacement options and the impact that the current condition will have on the necessary TAB work. Part of this effort will be to look into power conditioning to protect this equipment from power spikes.
- Heat Pumps: The approximately thirty (30) water-air heat pumps within the older portion of the terminal were installed in 2009. Many of these heat pumps have already reached the end of their serviceable life and the rest are nearing the end of their serviceable life. This has resulted in there being a number of these heat pumps that are non-operational at any given time while waiting for replacement parts to arrive and for repairs to be completed. This high failure rate is contributing to the delay in completing the TAB effort. JNU Building Maintenance and JNU staff are looking into a replacement plan for these older heat pumps.

**Rehabilitate Part 121/135 Apron and Remain Overnight (RON) Parking Apron.** This project remains in winter shutdown. The project Contractor (SECON) has not demobilized and will resume work on the project in the spring of 2025. Their current plan is to start work "as early as possible." Work not yet completed includes the asphalt pavement rehabilitation in the Phase 7 (Alaska Airlines Air Cargo hardstand area), the runway asphalt repair work per RFP 008, the repair of the steel piling base for light pole LP-6 (damaged by, with repairs paid for by Alaska Airlines) and the installation of the new light poles within the 121 apron.



**Project RFP Summary:**

JNU/DOWL has issued RFP 01 Ramp Lighting Modifications to SECON. This RFP asked for a deductive proposal to reduce the height of the six (6) new ramp light poles from 60 feet to 57 feet and to remove the obstruction lights from the contract scope of work. The engineers’ estimate for this work was a deduct of \$15,325. JNU has subsequently received and accepted a revised proposal from SECON, which identifies a **credit** in the amount of \$12,677.00.

JNU/DOWL has issued RFP 02 Remove Low Strength Concrete to SECON. This RFP had asked for a deductive proposal to delete the contract requirement to slurry 67 feet of 24-inch culvert in the Phase 2A work area. This culvert was to have been filled with grout and abandoned in place but must remain in use following changes made to the adjacent Parking Lot Improvement project. The engineers’ estimate for this work was a **deduct** of \$6,200. This RFP has subsequently been rescinded.

JNU/DOWL has issued RFP 03 – Ramp Marking Reductions, which addressed the elimination of the project asphalt markings in the 135 Apron from the project scope of work because Additive Alternate 1 (mill and pave the 135 apron) had been awarded. The revised engineers estimate for this work was a deduct of \$158,400. JNU has subsequently received and accepted a proposal from SECON, which identifies a **credit** in the amount of \$158,400.

JNU/DOWL has issued RFP 04 – Additional Pipe Slurry to SECON. The scope changes include filling the existing storm drain culverts under the Gate 2 and Gate 3 hardstands with controlled low strength material.

This change eliminates the requirement to remove these culverts and to remove and replace portions of the existing hardstands at Gate 3 and Gate 4. The engineer's estimate for this work was a deduct of \$224,930. JNU has subsequently received and accepted a proposal from SECON, which identifies a **credit** of \$231,130.

JNU/DOWL has issued RFP 05 – Hardstand Reinforcing to SECON. The scope changes include the addition of rebar within the cast-in-place concrete hardstands to resist cracking. JNU has accepted SECON's proposal (**addition** of \$45,432) to complete this work. This work was determined to NOT be Airport Improvement Program (AIP) eligible because it represented an Owner initiated betterment to the contract documents.

JNU/DOWL has issued RFP 06 – UTS Milling in 135 Apron to SECON. This RFP changed the asphalt milling method in the 135 apron from uniform milling to UTS (profile) milling. This change will better address the reduction of the ponding within the asphalt surface. The engineer's estimate for this work was \$400,000. JNU has accepted SECON's proposal (**addition** of \$403,754.00) to complete this work. This work has been determined to be AIP eligible by the Federal Aviation Administration (FAA).

JNU/DOWL has issued RFP 07 – TWY C1 Culvert Replacement to SECON. This RFP asked for a proposal to remove 220 lineal feet of 24-inch culvert galvanized steel culvert ay TWY C-1 with 24-inch corrugated plastic culvert. The engineer's estimate for this work was \$65,917.50. JNU has subsequently received and accepted a revised proposal (addition of \$64,760) from SECON. This work has been determined to be AIP eligible by the FAA.

JNU/DOWL has issued a revised version of RFP 08 – Patch Asphalt to SECON. The original version of this RFP asked for a proposal to mill and re-pave four small areas (approximately 100 square feet each) of asphalt paving within the surface of Runway 8-26 and to machine groove the drainage grooves with multi-blade equipment. The initial engineer's estimate for this work is \$30,000.00. SECON's initial proposal for this work came in at \$183,905.00. This very high cost was due to the fact that SECON does not have the required multi-blade equipment, and had explained that purchasing this equipment, or having a subcontractor bring it into Juneau would cost over \$100,000. The revised version of this RFP eliminated the requirement to use multi-blade equipment and allowed the use of standard single-blade saw-cutting equipment with a reduced saw-cut spacing requirement. SECON's revised **proposal** for this work came in at \$28,535.00. JNU has accepted SECON's revised proposal for this work. The FAA has provided a determination that this work will NOT be AIP eligible because it is outside of the scope of the original grant.

JNU/DOWL has issued RFP 09 – Light Pole Bollards to SECON. This RFP asked for a proposal to install four (4) owner furnished bollards around each of the six (6) new light poles that are being installed in the 121 Apron and five (5) bollards around the new electrical panels / disconnects at the Gate 5 PBB. The initial engineer's estimate for this work was \$44,660 and SECON's proposal came in at \$66,700. Further review by DOWL of the Contractor's incurred costs have validated the higher price. JNU has subsequently received and accepted a revised proposal (**addition** of \$66,700) from SECON. This work was determined to be AIP eligible by the FAA.

JNU/DOWL has issued RFP 10 – Conduit Removal in 135 Apron to SECON. This RFP asked for a proposal to remove one (1) abandoned 3-inch steel pipe conduit which was encountered in the 135 Apron. This pipe was found to have been placed directly under and within the asphalt paving, which was creating a large crack in the old asphalt surface. The initial engineer's estimate for this work is \$6,600. SECON's **proposal** came in at \$6,940.00. JNU has subsequently received and accepted SECON's proposal and this work has been determined to be AIP eligible by the FAA.

JNU/DOWL has issued RFP 11 – Conduit Repair to SECON. This RFP asked SECON for a proposal to install a patch to seal a crack that was found in an old existing cementitious conduit that was encountered within the Phase 5 work area. The initial engineer's estimate for this work is \$550. SECON's **proposal**

came in at \$620.00. JNU has subsequently received and accepted SECON's proposal and this work has been determined to be AIP eligible by the FAA.

JNU/DOWL has issued RFP 12 – Vault Drain Repair. This RFP asked SECON for a proposal to re-route an existing 6-inch vault drainpipe and extend it to daylight into the infield. The initial engineer's estimate for this work is \$3,720.00. SECON's **proposal** came in at \$1,540.00. JNU has subsequently received and accepted SECON's proposal and this work has been determined to be AIP eligible by the FAA.

JNU/DOWL has issued RFP 13 – Additional Tie-Down Removal. This RFP asked SECON for a proposal to remove additional tie-downs that have been found below the existing asphalt in the 135 Apron area. The initial engineer's estimate for this work was \$4,720.00 and SECON's **proposal** came in at \$27,870.00. Further review by DOWL of the Contractor's incurred costs have validated the higher price. JNU has subsequently received and accepted SECON's proposal and this work has been determined to be AIP eligible by the FAA.

JNU/DOWL has issued RFP 14 – RON Asphalt Repairs. This RFP asked SECON for a proposal to mill and replace the asphalt paving that had been damaged as a result of the Alaska Airlines baggage train collision with a new light pole base in the RON area. Alaska Airlines indicated that they would prefer to deal with SECON directly to cover the repair costs, so this RFP has been rescinded from the Apron project.

JNU/DOWL has issued RFP 15 – Additional Concrete Removal. This RFP asked SECON for a proposal to remove the previously unknown concrete structures that have been discovered in a portion of the Phase 11 work area within the 135 apron. Upon discovery of these structures, the project engineers determined that the structures could not remain because they represented a direct conflict with the mill and re-pave work. The initial engineer's estimate for this work was \$295,300. Upon receipt of this estimate, JNU immediately advised the FAA of this differing site condition and of the initial estimated cost. The FAA was also advised that this initial estimate represented a "best-case" scenario as it was anticipated that there would be more structures unearthed within the Phase 11 work area. SECON ultimately provided a **proposal** in the amount of \$432,215.00. This proposal accurately reflected the amount of structural concrete removed, the introduction of new structural subbase and the change from mill and pave to the introduction of new asphalt paving. JNU has subsequently received and accepted SECON's proposal and this work has been determined to be AIP eligible by the FAA.

JNU has issued RFP 016 – Additional Concrete Repairs. This RFP asked SECON for a proposal to remove and replace damaged portions of the concrete curbing within the new public and staff parking lot. This concrete was damaged last winter by snow-removal operations. JNU has not yet received a proposal from SECON for this RFP. This work will not be AIP eligible (outside of the scope of the original grant) and will need to be funded by JNU.

JNU has issued RFP 017 – Culvert Zinc Replacement. This RFP asked SECON for a proposal to install new sacrificial zinc anodes within the large diameter Jordan Creek culvert at TWY H and at TWY A. JNU has not yet received a proposal from SECON for this RFP. This work will not be AIP eligible (outside of the scope of the original grant) and will need to be funded by JNU.

**Culvert Condition Survey – Jordan Creek @ Runway 8-26:** JNU has received the condition survey as prepared by proHNS engineering for the large half-arch aluminum culvert assembly which allows Jordan Creek to pass beneath Taxiway A and Runway 8-26. The northern portion of this culvert assembly was installed in 2019-2020 as part of the Taxiway A Rehabilitation, Taxiway D-1 Relocation, and Taxiway E Realignment project (BE19-218, AIP 3-02-0133-080-2019) and the southern portion of this culvert was installed in 2014-2015 as part of the Runway 8-26 Rehabilitation project (E14-259 / AIP 3-02-0133-60-2014). The condition survey was deemed necessary based on reported damage by Contractors working in the



vicinity of the culvert and based upon the concern that stray electrical current from the airfield lighting system could be contributing to the damage of in-ground metal assemblies through electrolysis.



In their report, proHNS has stated the opinion that an immediate catastrophic failure of the culvert is unlikely. The report goes on to state that continued deterioration is likely, and that repair work is recommended, even if the source of deterioration is determined and eliminated. proHNS has identified two (2) culvert removal and replacement options, as well as three (3) repair options. proHNS has recommended further study of the three repairs options, primarily because they would not require open trenching, would not require a closure of Runway 8-26 and would not require extensive permitting.

The three recommended repair options are:

1. **HDPE (High Density Polyethylene) Slip Lining**

Pros:

- a. Corrosion resistant structure.
- b. Local contractors are familiar with construction installation methods.
- c. Cost effective due to shipping and construction costs.
- d. Would not require runway closure for construction.

Cons:

- a. Grouting annular space where lengths are over 100' can be challenging.
- b. 800' length push and pull resistance on pipe will be significant.
- c. Requires large area for insertion/jacking/welding pit.
- d. Potential to reduce flow capacity.

## 2. Carbon Fiber Lining

### Pros:

- a. Corrosion resistant structure.
- b. Could be done while maintaining streamflow in existing pipe.
- c. Wouldn't impact existing stream bed material, which should make for easier permitting process.
- d. Can be designed to be structurally independent and fully withstand runway loading.

### Cons:

Specialized equipment and trained personnel required, known installer (National Plant Services, Michels Trenchless), known Manufacturer (Structural Technologies).

## 3. GeoPolymer Lining

### Pros:

- a. Corrosion resistant structure.
  - b. Could be done while maintaining streamflow in existing pipe.
  - c. Wouldn't impact existing stream bed material, which should make for easier permitting process.
- Product has extensive research on chemical properties not affecting fish.

### Cons:

- a. Specialized equipment and trained personnel required, known installer (National Plant Services, Michels Trenchless), known Manufacturer (Structural Technologies, GeoTree)
- b. Questions on whether this product would be strong enough to fully withstand runway loading.

At this time, JNU does not have estimated construction costs for either of the two removal / replacement options, or for any of the three repair options. JNU has confirmed with the FAA that replacement / repair costs would not be AIP eligible because the culvert is within the 20-year useful life of grant 60-2014 and because the FAA considers this work to be a maintenance project.

JNU staff would like to recommend that an RFP be developed to obtain the services of a design consultant to complete a design for the in-place repair of the culvert assembly based upon one of the three options identified by proHNS. The RFP would request that the design consultant complete a structural analysis of the recommended repair option to verify that the repair would become a permanent load bearing replacement for the culvert in the eventuality that the old culvert fully deteriorated away. The RFP would also request that the design consultant prepare 100% construction documents (technical specifications and drawings) as well as detailed construction cost estimates throughout the design process.

**Safety Area Grading at Runway Shoulder and Navigational Aids (NAVAIDS):** HDR Engineering has completed the site survey field work and has started work on their grading analysis to determine the full extent of the grading work. JNU has confirmed with HDR that they will still be able to meet a deliverables schedule that reflects a bid-opening date of July 1, 2025. This revised bid opening date would have an anticipated construction contract award / notice-to-proceed date in late August 2025 or early September 2025. The construction contract will be written to allow the successful bidder the option to complete the project in 2025 or in the spring of 2026.

**Sand/Chemical Building – Roof Warranty:** Dawson Construction has reported that Carlisle SynTec Systems has released the manufacturer's warranty for this roof assembly. A copy of this warranty has been placed in the project files.

**Fuel Station Access Control/Fuel Monitoring/Tracking: No change since last report.** 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 previously approved for CARES funding by the Board.

End of Report