



MEMORANDUM

TO: Patty Wahto, Airport Manager

FROM: Mike Greene, JNU Airport Project Manager

DATE: January 3, 2025

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: JNU Building Maintenance continues to observe contaminates/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 contaminates/sediment keeps replenishing itself. In a meeting conducted on December 12, with JNU staff, JNU Airport Maintenance and engineers from RESPEC present, it was decided that the samples of these contaminates are to be tested to determine what this material is.

As previously reported: 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.*

JNU Building Maintenance continues to adhere 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.

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 continues to look at repair options, but has indicated that this equipment will be able to run during the upcoming TAB work.

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. The number of inoperable units is now low enough to allow the TAB work to proceed. JNU Building Maintenance and JNU staff are continuing to look at funding options for a phased replacement of these older heat pumps.

Terminal Air Balancing (TAB): Following a review of the current operational status of the air-handlers and heat pumps, it was decided that the TAB work could now proceed. JNU has instructed Dawson Construction to proceed with the final balancing of the terminal's new and old mechanical HVAC air-handling systems.

Lighting Control Replacement: JNU has not yet received a schedule from Dawson Construction, so at this time the work start date and completion date for RFP 183 – Lighting Control Replacement remain unknown. 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.

Rehabilitate Part 121/135 Apron and Remain Overnight (RON) Parking Apron. No change since last report. 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.

Culvert Condition Survey – Jordan Creek @ Runway 8-26: As previously reported, 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. In their report, proHNS 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 three (3) repair-in-place options, recommending them for further study 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-in-place 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: 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 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 has requested a fee proposal from proHNS Engineering to complete the necessary design phase services and to provide bid-ready construction documents (technical specifications and drawings) based upon one of their three repair-in-place recommendations. The RFP has requested 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 also requested that the design consultant prepare detailed construction cost estimates throughout the design process.

Safety Area Grading at Runway Shoulder and Navigational Aids (NAVAIDS): HDR Engineering continues to develop the 30% design submittal for this project. As reported earlier, they have completed the site survey field work and continue to 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.

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.

Airport Construction Document Archiving: JNU Staff continues to work on sorting / culling the old archived construction documents, as-built documents and misc. reports.

End of Report