

**CITY COUNCIL COMMUNICATION 98-052
FEBRUARY 16, 1998 AGENDA**

SUBJECT:

**STATUS ON RECOVERY OF AIRCRAFT
DEICING FLUID OPERATIONS AT THE
AIRPORT**

SUBMITTED BY:

**WILLIAM FLANNERY
AVIATION DIRECTOR**

SYNOPSIS –

Discharge of aircraft deicing fluids through the storm water system from the aircraft parking ramps into area waterways has led to discoloration of the water and odors in Yeader Creek. Residents along Yeader Creek have found the discoloration of the water and the odors to be offensive and have reported their concerns to the Iowa Department of Natural Resources (IDNR). IDNR has advised the City that these discharges violate the State's water quality standards. The City conducted a Storm Water Pollution Abatement Study, developed a Storm Water Pollution Prevention Program, and is working with IDNR on the issuance of a National Pollution Discharge Elimination System (NPDES) Storm Water Permit which will establish water quality standards and allow the design and construction of facilities and programs to abate storm water pollution from the Des Moines International Airport. In December 1997, the Airport Board approved a contract with Inland Technologies to provide services to recover spent aircraft deicing fluid before it enters the Airport storm water system. Services under this contract were initiated by Inland Technologies on January 16, 1998. This recovery operation is a pilot project intended to examine the viability of using glycol recovery vehicles as a part of the storm water pollution abatement program. The recovery program is also expected to provide some mitigation of the Yeader Creek pollution problem this winter season. Planned long-term solutions include the construction of a storm water detention facility that will be used to contain contaminated storm water and release it into the sanitary sewer system for treatment by the Wastewater Treatment Facility.

FISCAL IMPACT –

The existing glycol recovery contract with Inland Technologies is for an amount not to exceed \$386,000. There will be some additional cost for disposal of fluids into the Wastewater Treatment Facility. These costs will be funded from the Aviation Department's Operating Budget.

Construction of the storm water detention facilities which will contain the glycol runoff is scheduled for construction beginning this 1998 season. Phase I of the project will be the construction of the detention facility and will primarily service the terminal aircraft parking ramp. Phase II will service the south air cargo aircraft parking ramp. Estimated cost of the detention facilities is \$4,000,000 and will be funded with Airport revenue bonds.

RECOMMENDATION –

To receive and file the report.

BACKGROUND –

Commercial airlines operating in ice and snow conditions are required by Federal Aviation Administration (FAA) regulations to ensure their aircraft are properly deiced prior to flight. To date, the only economically produced aircraft deicing fluids that will meet FAA specifications contain glycol. Although the glycol used in the aircraft deicing fluid is biodegradable, this process consumes oxygen and creates an odor which may be offensive at high concentrations. Aircraft deicing fluid also contains a dye to enhance its visibility during application and to provide a ready means to identify the product. The dye is known to cause a discoloration of storm water when mixed in sufficient quantities.

The Aviation and Engineering Departments have for quite some time been exploring long- and short-term solutions to resolve the water quality issues expressed by IDNR and area residents who live along Yeader Creek. The contract with Inland Technologies is a pilot project that will evaluate the viability of using glycol recovery as a part of our storm water pollution program and will provide additional data that can be used to develop the Airport's storm water pollution prevention program. Although the recovery program is somewhat costly, it is anticipated it will significantly reduce the amount of aircraft deicing fluid entering Yeader Creek and will mitigate the glycol pollution of the creek. The long-term solution currently being discussed with IDNR is the construction of an on-airport detention facility which would detain the glycol contaminated storm water until it can be released into the sanitary sewer system and disposed of at the Wastewater Treatment Facility. Before the facility can be constructed it will be necessary for the City and IDNR to reach an agreement on the acceptable water quality standards that will be included in the NPDES Storm Water Permit, which must be issued by IDNR for the operation of the Airport's storm water system. The water quality standards currently proposed by IDNR would require 100 percent capture of all deicing fluids from the Airport. The City Engineer has indicated the proposed standards far exceed what is considered acceptable in the industry and, if adopted, would require the City to construct very costly improvements. Aviation and Engineering Department staff and consultants are currently working with IDNR staff to develop the NPDES permit, including the water quality standards that can be met.

In the interim, it is anticipated the contract with Inland Technologies will apply a proven method to reduce the environmental impact from aircraft deicing fluid. Inland Technologies has

mobilized and installed all required equipment associated with the deicing fluid recovery project. Four 20,000 gallon bulk storage tanks are located on the Airport to store the recovered deicing fluid. These tanks are used to store the recovered fluids until disposal and/or transport for recycling.

Deicing fluid in concentrations less than approximately 10-15 percent cannot be economically recycled. For this reason, the City obtained a permit from the Metro Waste Reclamation Authority (MWRA) which will allow disposal of no more than 1,000 gallons of deicing fluid per day that is mixed with storm water before recovery. The remaining fluid mixture, in concentrations where it is economical to recycle, will be transported to Minneapolis-St. Paul International Airport (MSP) for recycling at Inland's concentrator facilities. This process will produce a product that will be used for other industrial processes.

Since the beginning of the glycol recovery operations (January 16, 1998 through February 7, 1998), the air carriers have reported that 11,800 gallons of glycol have been used for deicing, and we have recovered approximately 3,675 gallons or 31.1 percent.