



## TRUCKEE TAHOE AIRPORT DISTRICT BOARD OF DIRECTOR STAFF REPORT

**AGENDA TITLE:** 2025 Budget – Capital Project - Fuel Farm Skid Replacement & Additional 12,000 Gallon Jet A/SAF Fuel Tank

**MEETING DATE:** October 23, 2024

**PREPARED BY:** Robb Etnyre, General Manager

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**RECOMMENDED ACTION:** Approve including Fuel Farm Skid Replacement & 12,000-gallon tank (\$750,000) in the 2025 budget as a carryover project from 2024 to continue to maintain our strategic plan objective 4.E.1. *Prioritize the transition to 100% Sustainable Aviation Fuel (SAF) Jet A by 2024.*

**Background:**

**KTRK Fuel Tank Capacity:** KTRK has a Jet A/Sustainable Aviation Fuel (SAF) tank capacity of 36,000 gallons (3 x 12,000-gallon tanks), plus two 5,000 gallon refueling trucks. This is total capacity; operating capacity of the tanks is approximately 90% of total capacity due to expansion and proper functioning of tanks. The coefficient of thermal expansion for jet fuel is 0.00099 per degree Celsius (°C), which means that one gallon of jet fuel will expand 4% for every 40°C increase in temperature. The coefficient of thermal expansion measures how quickly a liquid's volume increases as its temperature increases. The relationship is reversible, so as jet fuel cools in tanks, it will take up less volume than it did at warmer temperatures.



**Aviation Fuel Delivery:** Jet A/SAF fuel is delivered under our aviation fuel supply agreement via a third-party tank hauling company. Per contract, KTRK’s Jet A/SAF aviation jet fuel is supplied from either Crocket, CA or Vopak, CA. The fuel is delivered by a 9,000-gallon fuel truck with approximately 7,500-8,000 gallons per delivery due to transportation weight limitations. Lead times for delivery vary (2-5 days) based on source location from supplier. The tank haul company uses dedicated SAF trucks to facilitate quicker turnaround times for delivery. Deliveries from more distant locations incur increased transportation cost.

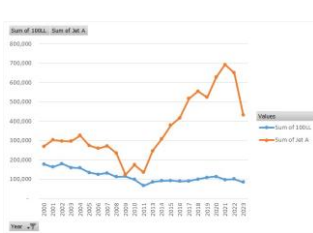
Crocket, CA to KTRK	164 miles
Vopak, CA to KTRK	513 miles



**Existing Fuel Farm Pump Capacity:** The current KTRK fuel farm pump flow rate is 165 gal/min, which translates to a fuel delivery truck off-load time of approximately 50 minutes, and a KTRK fuel truck fill time of approximately 30 minutes.

**Proposed Fuel Farm Pump Capacity Upgrade:** The proposed designed new fuel farm pump capacity is 235 gal/min, which translates to a fuel delivery truck off-load time of approximately 35 minutes, and a KTRK fuel truck fill time of approximately 21 minutes.

**Historic Jet A/SAF Fuel Sales at KTRK:** The below chart represents the recent peak in Jet Fuel Sales at KTRK at ~700,000 gallons in 2021. We are budgeting 500,000 gallons in 2025. While in recent years fuel sales have been significantly impacted by weather, wildfire smoke, and jet traffic decreases, we expect the demand to return to previous levels. Given the significant source of net revenue from jet fuel sales, along with maintaining our greenhouse gas reduction goals by only selling sustainable aviation fuel, addressing capacity provides a significant opportunity to protect our key revenue source.



YTD							
Fuel Sales	Year	Gal Sold	Rev	COGS	Net Rev	COGS %	
100LL	2024	80,313.86	470,544.90	391,198.15	\$ 79,346.75	83%	
Jet A/SAF	2024	421,715.00	2,937,556.08	2,126,944.33	\$ 810,611.75	72%	
100LL	2023	66,846.15	453,329.53	368,119.85	\$ 85,209.68	81%	
Jet A/SAF	2023	371,091.00	2,908,604.83	1,707,785.13	\$ 1,200,819.70	59%	
100 LL change year to year		13,467.71	\$ 17,215.37	\$ 23,078.30	\$ (5,862.93)	2%	
% Change		20.1%	3.8%	6.3%	-6.9%	2.4%	
Jet A/SAF change year to year		50,624.00	\$ 28,951.25	\$ 419,159.20	\$ (390,207.95)	14%	
% Change		13.6%	1.0%	24.5%	-32.5%	23.3%	

**Peak Period Jet Fuel Capacity:** The most significant capacity limitation with the existing fuel farm is peak period demand. During the peak month of July 2024, we were selling approximately 3,455 gallons of Jet A/SAF daily with fuel being ordered every 2-3 days. In July 2023, the daily Jet A/SAF sales averaged 2,709 gallons. Not fully reflected in these numbers is the erratic fluctuation of wildfire rotary aircraft fuel purchases based on incident. This summer, with four fire fighting helicopters operating from KTRK fighting several fires, we saw several spikes in daily demand.

#### Fuel Farm Skid Replace & 12,000 Gallon Tank Cost:

Plan Design - Underway	\$36,000
Engineering	\$78,000
12,000 Gallon Fuel Tank	\$70,000
Tank Liner & Painting	\$75,000
Construction - Installation	\$200,000
Catwalk Over All Tanks	\$75,000
<b>Total</b>	<b>\$534,000</b>
Proposed Project Budget	\$750,000 (\$450k + \$300k)
Electrical Upgrade – 3 Phase Power – Complete 2024	(\$152,000)

**Discussion:** Increasing fuel pump capacity in the fuel farm to minimize time spent off-loading and loading fuel from and two trucks and the storage tanks is an improvement for our existing infrastructure and addresses desired operational efficiencies. While undertaking these improvements to the existing pump capacity of the fuel farm, the cost of disruption and temporary jet fuel refuelers on hand to allow for the pump upgrade, it makes sense to combine projects and add the additional jet fuel tank at the same time – which the fuel farm was designed to accommodate. The added capacity will not only address today’s requirement for daily/weekly jet fuel deliveries but will also bring on-hand capacity closer to the peak demand already experienced in 2021. Additionally, being able to hold more jet fuel capacity provides KTRK more flexibility in ordering fuel to its advantage in weekly fluctuating market conditions and provides insulation against unforeseen supply line interruptions thus protecting our key revenue source.