

ATD-2 to TFDM — NASA's Machine-Learning Airport Scheduler Saves Over a Million Gallons of Jet Fuel

AI in the Public Sector · Good practice · United States of America

Quality score: 93/100

Evidence strength: Observational / pre–post

Summary

NASA's ATD-2 project used ML taxi-time and surface-trajectory prediction to schedule gate pushbacks at Charlotte Douglas Airport, saving 1M+ gallons of jet fuel and 933 passenger-delay hours over four years before transfer to the FAA for rollout to 27 US hub airports.

Key dimensions

Dimension	Score
Evidence of impact / measured public value	3/3
Transparency, fairness & accountability	3/3
Transferability / demonstrated replication	3/3
Scalability beyond pilot	2/3
Governance, capability & sustainability	3/3

Evaluated by C-NAPSE

Data sources

C-NAPSE web research — accessed 2026-08-19

NASA Ames Research Center, with the Federal Aviation Administration (FAA) — accessed 2026-08-19

NASA — Aviation tech rollout to airports — accessed 2026-08-19

NASA — Machine Learning Airport Surface Model (NTRS technical paper) — accessed 2026-08-19

Airport Industry Review — Inside the FAA's new IADS software — accessed 2026-08-19

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