

Terminal Flight Data Manager (TFDM)

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Conference

By: FAA Collaborative Site Implementation Team

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**Federal Aviation
Administration**

Terminal Flight Data Manager (TFDM)

Electronic Flight Strips & Surface Metering in the FAA Air Traffic Control Tower

The screenshot shows the TFDM interface with three flight strip panels. The top panel is labeled '1-1/1 Default' and contains one strip for SEGLH (28 KBW). The middle panel is labeled '1-6/6 Arrival 33L' and contains six strips: SEXZM (EAGL 33L LC), SEJLU (A550 28), N9PK (SU29 33R), SEJBM (A550 33L LC), SEIJU (A550 33R), and SEGLH (P2BA 33L LC). The bottom panel is labeled '1-7/8 Arrival 33R' and contains seven strips: SEGLH (P2BA 33L), SEXZM (EAGL 33L), N9PK (SU29 33R LC), SEJLU (A550 28), SEJBM (A550 33L LC), SEIJU (A550 33R LC), and SEGLH (P2BA 33L). A central panel for 'Runway 33R' shows a grid of flight strips, with the SEJBM (A550 33R) strip highlighted in green. At the bottom, there is a detailed data table with columns for various flight parameters.

WM1	WM1	WM2	WM2	WM2	Field11	Field13	Field13	RW	RW	RW	Gate	Gate	Gate	Gate	WM3	WM3	WM3	WM4		
UZ	DZ	KI	LK	PADD	B-PARK	EDCT	P	33L	33R	28	B11	C1	CRGO	ABI	IR	JK	33LK			
WM4	HD	HD	HD	HD	HD	I-AR	I-AR	I-AR	I-AR	FREQ	FREQ	FREQ	FREQ	Function	Function	Function	Function			
ODO	040	150	300	320	ERASE	20	25	30	35	124.55	128.7	119.7	132.775	Abort	Hold	Disable	NSD	OCH	VFR	PTT

The screenshot shows the Surface Manager interface for Baltimore/Washington Intl Thurgood Marshall. It features a 'Watch List Viewer' on the left with a table of flight data, a 'Map Display' on the right showing a runway layout with flight paths, and an 'Operations Timeline' at the bottom. The flight data table includes columns for Flight ID, AC Type, Direction, Orig, and Dest. The map display shows various runways and flight paths, with a red line indicating a specific path. The operations timeline shows 'Actual Off Block Time Arrivals on All Runways' and 'Actual Off Block Time Departures on All Runways'.

Flight ID	AC Type	Direction	Orig	Dest
GGN7853	CRJ9	Outbound	SWW	SWW
GGN7858	E145	Outbound	SWW	SWW
SWA4483	E175	Outbound	SWW	SWW
FDY284	E145	Outbound	SWW	SWW
FDY553	C288	Outbound	SWW	SWW
FDY513	C288	Inbound	SWW	SWW
SWA485	B738	Inbound	SWW	SWW
LAL595	B738	Outbound	SWW	SWW
SWA1203	B737	Inbound	SWW	SWW
SWA188	B737	Outbound	SWW	SWW
SWA1518	B737	Outbound	SWW	SWW
BTQ54	P212	Outbound	SWW	SWW
SWA288	CRJ9	Inbound	SWW	SWW
SWA1168	B737	Outbound	SWW	SWW
SWA198	B737	Outbound	SWW	SWW
SWA151	B737	Outbound	SWW	SWW
SWA124	B737	Outbound	SWW	SWW
GGN783	CRJ9	Outbound	SWW	SWW
SWA199	B738	Inbound	SWW	SWW
FDY28	C288	Outbound	SWW	SWW

TFDM Stakeholder Benefits

Flight Operators

- Improved schedule predictability/crew utilization
- Less taxi time/fuel burn (**313 million gallons**)
- Increased reliability of connections
- Aircraft may be held at gate or in the non-movement area instead of in a long departure line on the taxiway

Air Traffic Control

- Automatically updated flight plans and electronic flight strips
- Easier rescheduling
- Fewer aircraft in the movement area and departure queue
- Improved surface situational awareness at the TRACON, ARTCC, and Command Center
- Improved safety—less heads down time

Airport Operators

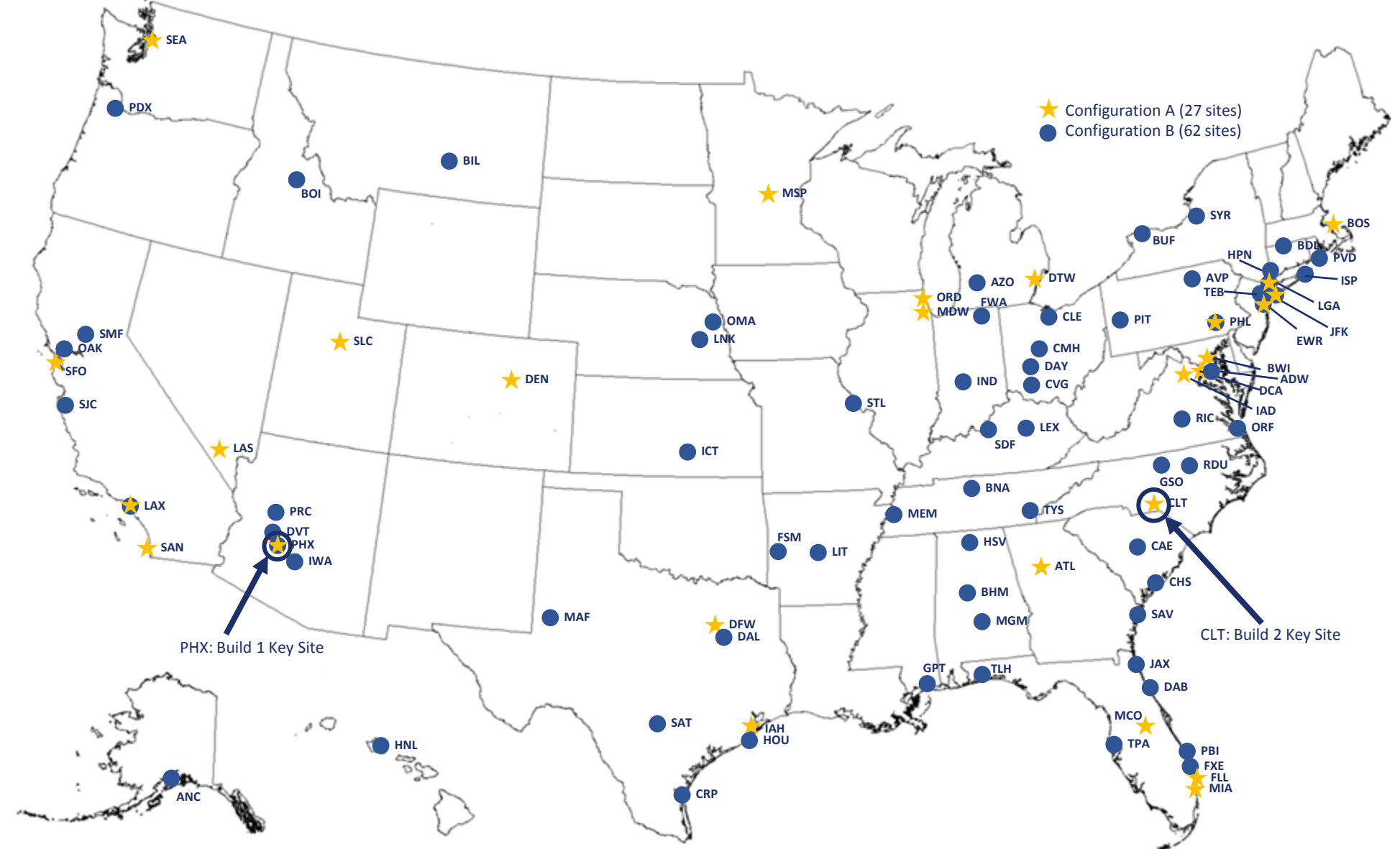
- Reduced CO2 footprint (**3 million metric tons**)
- Reduce engine noise
- Improved predictability
- More balanced use of airport resources

Flying Public

- Improved predictability
- Fewer delays
- More reliable flight schedules
- Improved passenger satisfaction



TFDM Deployment Sites



PHX: Build 1 Key Site

CLT: Build 2 Key Site

TTP and Pre-Scheduling Departure Releases

Terminal TFDM Publication (TTP)

- Flight Data
- Flight Delay
- Airport Information
- Traffic Management Restrictions
- Operational Metrics
- Surface Metering Program

Pre-Scheduling Departure Releases

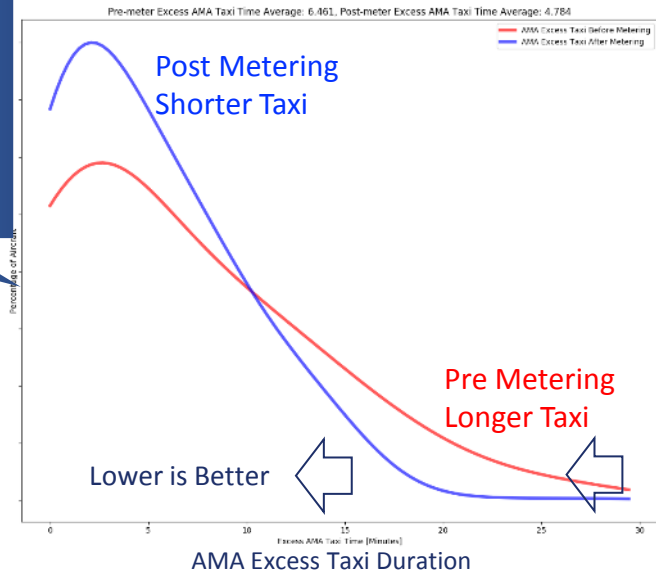
- Based on accurate data exchange
- Ability to schedule departure releases prior to pushback



ATD-2 Surface Metering Benefits

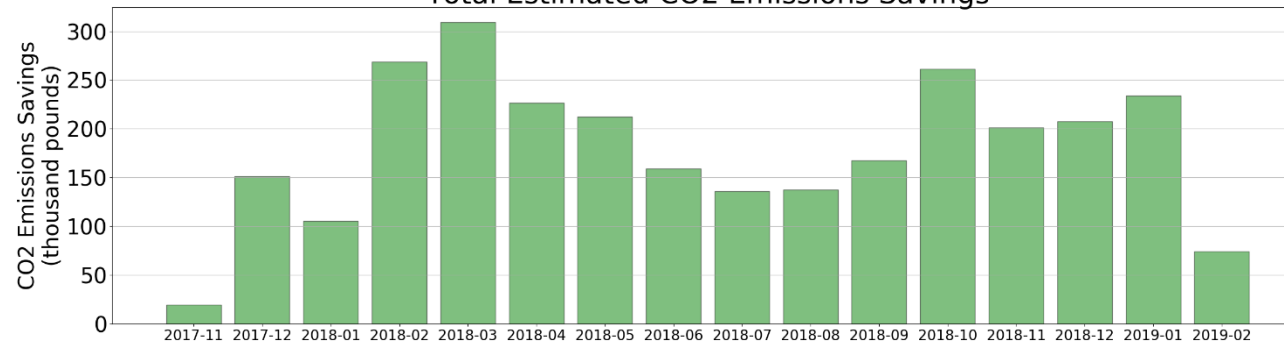
Initial benefits observed from S-CDM surface metering at CLT

Reduced AMA taxi out times during its use via small holds at gate



Saved approximately 932,175 lbs of fuel by holding 13.9% of departures with average gate hold of 5.8 minutes. Benefit mechanism (1).

Total Estimated CO2 Emissions Savings



Saved approximately 2,871,101 lbs of CO2, equivalent to planting 33,392 urban trees



Federal Aviation Administration

Airports' Role in TFDM

- Each airport's role will depend on how their airport operates, interacts with carriers, and whether they operate ramps
- Airports will be stakeholders in surface metering and will be part of the collaborative process for when surface metering will occur
- For airports that operate ramps, they will have an even more critical roles in surface metering
 - May need to provide data (e.g., EOBTs) to TFDM
- Airports may want to subscribe to TTP to have more data and better situational awareness
 - This includes data beyond just surface metering such as other TMIs, airport configuration changes, etc.



Collaborative Site Implementation Team (CSIT)

CSIT performs three basic functions for TFDM

- Liaison to non-FAA stakeholders
- Data collection for program
- Guide local stakeholders in establishing local collaboration

Activities include:

- Visits the 27 airports that will deploy surface metering capabilities
 - CSIT airport visits will occur between 2020 to 2024

Contact: CSIT@faa.gov



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