



# Traffic Flow Management Wrap-up

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# Key Findings from 2010

- San Francisco Stratus research
  - Objective was to simultaneously consider weather modeling, traffic flow modeling, and operational practices
  - NASA developed vision, problem statement, and selected NRA
- Analysis complete: shows promise to save \$4.8M/year (\$9.6M with line of flight consideration) and 19% reduction in delayed flights (1092 hours/year)
- Stand alone, web-based decision aid was created and can be accessed through NWS website (provided to NWS and FAA)
- Operational shadow assessment being planned with the FAA for the 2011 stratus season

**CONSENSUS FORECAST**

16z Model Run Approach Clear At **19:02** GMT  
Quality Good

Probability of Clearing By:			
17Z	18Z	19Z	20Z
5%	10%	50%	<b>90%</b>

**COMPONENT FORECASTS**

Run	Model	Fcst	Wgt
16:00	COBEL	19:01	0.24
16:00	Local	17:17	0.28
16:00	Regional	18:43	0.14
16:00	Satellite	20:35	0.34

Hourly Forecast Summary  
Model Forecast Details ▾

**15Z GDP RECOMMENDATIONS**

15Z Consensus Forecast > Clear at 17:25 GMT [G000]

Traffic Data		15:18 GMT			
		Current	Alt-1	Primary	Alt-2
Start Time		15:30	15:30	<b>15:30</b>	15:30
End Time		18:59	18:14	<b>18:29</b>	18:44
Scope		12West	12West	<b>12West</b>	12West
AAR	45@	18:00	16:45	<b>17:30</b>	17:45
	60@	19:00	17:45	<b>18:30</b>	18:45
Risk Exceed Max Queue		1%	9%	<b>6%</b>	2%
Benefit Delay Reduction		<b>\$\$</b> 24%	\$ 17%	<b>\$\$</b> 20%	\$\$ 27%

Expanded statistics



## *Key Findings from 2010*

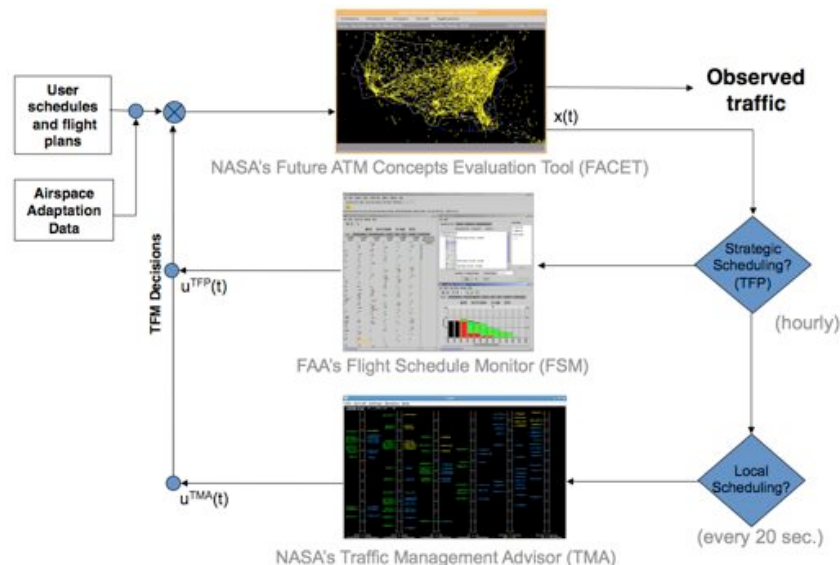
- Optimization-based scheduling models can reduce NAS delays by over 40% compared to current operations
- Weather information must be translated, not simply displayed, to achieve maximum benefits
- Failure to consider the integrated impact of traffic management initiatives can lead to over 50% of flights being “double delayed”, as commonly occurs in current day operations (DFW and ATL Case Studies)



# Integration Opportunities

What are the most important TFM integration opportunities to pursue?

- Weather Integration
  - Integration with existing FAA Decision Support Tools
  - Integration with NASA simulation systems (e.g., FACET)
- TFM + Arrival Scheduling
- TFM + DAC
- Others?





## High Technical Readiness Level Activities:

- Are there HITLs that we should consider running?
- Are there opportunities for operational engineering or shadow assessments?

## Low Technical Readiness Level Activities:

- Weather translation models
- Environmental impact modeling
- Scheduling and routing
- Flight prioritization techniques