

Lehigh Valley International Airport 14 CFR Part 150 Noise Compatibility Study Update

Technical Advisory Committee Meeting #1

LNAA Boardroom
Allentown, PA



Presented by:
Wyle Laboratories, Inc.

January 23, 2015

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Agenda

- Staff and Committee Introductions
- Part 150 Study Overview/Purpose
- Study Process and Timeline
- Baseline Flight Operations
- Forecast Flight Operations
- NEM Status
- Flight Track Development
- Supplemental Noise Measurements

Wyle Introduction



Lehigh Northampton Airport Authority
Lehigh Valley International Airport



Joe Czech
Project Manager



Joanna Norris
Co-PM; Public Outreach



Chris Hobbs
Noise Measurements & Radar Processing



Eric Smith
GIS



Ben Manning
Modeling



Vanessa Thompkins
Production Manager



Ferdows Fazeli
Public Outreach

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TAC Introduction

- John Diacogiannis, Chairman, Board of Supervisors, Hanover-Northampton
- John Herber, Tower Operations, FAA
- Ed Hozza, Jr. Mayor, Township of Whitehall
- John Nieman, Delta Airlines
- Barbara Schlegel, Mayor, Borough of Catasauqua
- Ryan Snyder, Pilot, East Coast Jets
- Mike Wakely, Ramp Operations Manager, FedEx
- Randall Wood, Chief Pilot, New World Aviation
- Joan Zandarski, Operational Duty Manager, LVAS

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Part 150 Study Overview

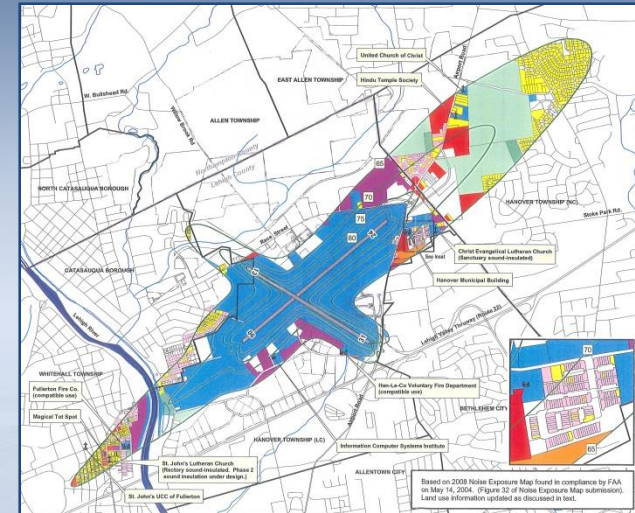
A 14 CFR Part 150 Aircraft Noise Compatibility Study identifies incompatible land use around airports and recommends measures to (a) mitigate existing problems and (b) prevent future ones.

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Project Purpose

To update LVIA's Noise Compatibility Program, we are developing:

- ❑ Noise Exposure Map (NEM)
 - To show where aircraft noise exposure occurs today and a five year forecast
- ❑ Noise Compatibility Program (NCP)
 - Measures/recommendations proposed to reduce noise exposure in the community



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Advisory Committees Public Participation

Technical Advisory Committee

- ✓ LVIA staff
- ✓ FAA Reps
- ✓ PennDOT Reps
- ✓ Community Reps
- ✓ Airport tenants

Community Advisory Committee

- ✓ Residents who live in impacted communities near the airport



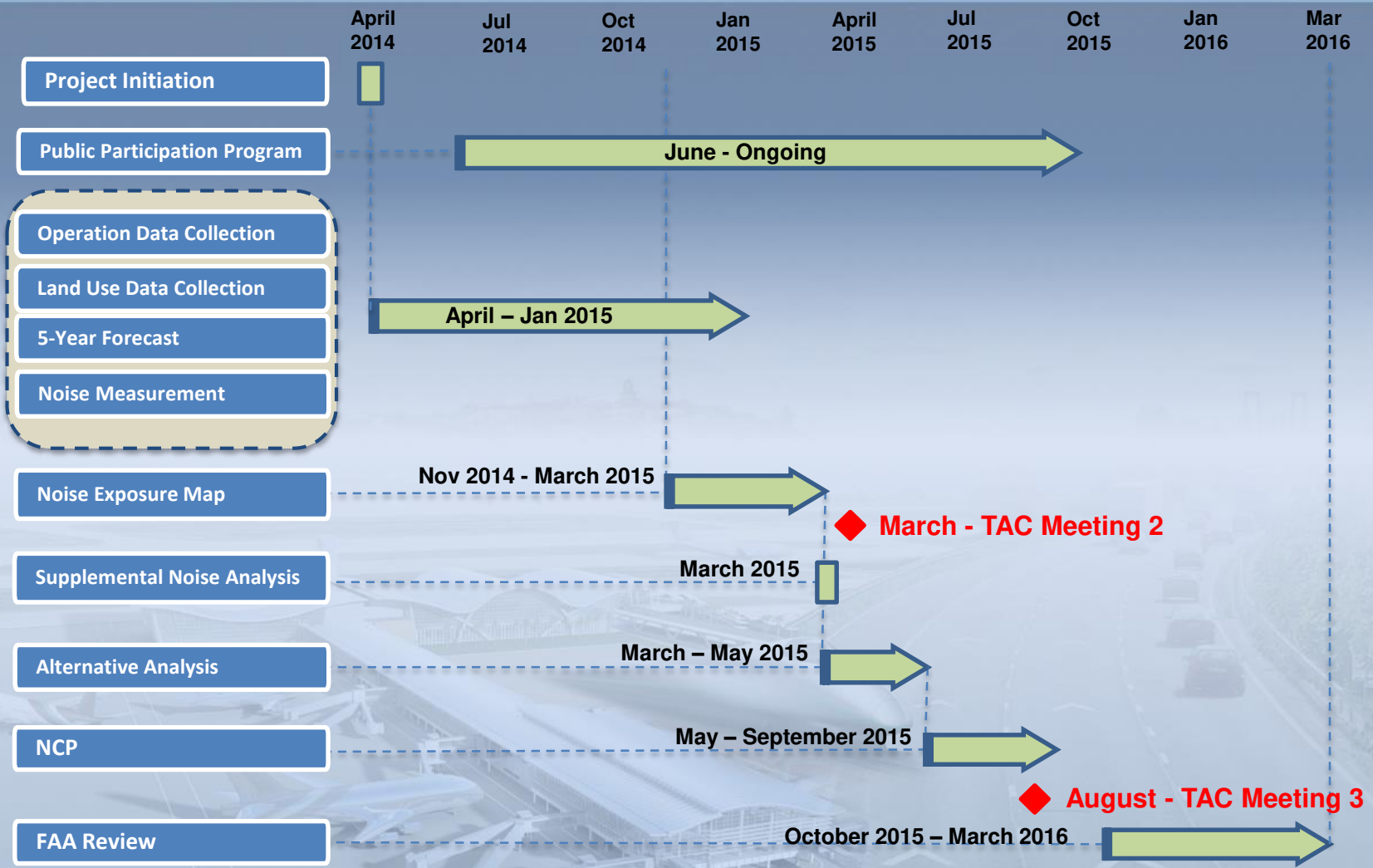
Community

- ✓ Public Workshops
- ✓ Public Hearing
- ✓ Project website
- ✓ Mailing list
- ✓ Social media
- ✓ Project staff

Media

- ✓ Project Website: www.flylvia.com
- ✓ Social Media <http://facebook.com/flylvia>
- <http://twitter.com/flylvia>
- ✓ Project staff jinorris@lvia.org

Part 150 Process and Timeline - draft



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Flight Operations Development

- FAA Air Traffic Activity and Display System (ATADS)
 - Tower counts
 - Primarily 2014 data
- FAA Terminal Area Forecast (TAF)
 - Bridge to 2015 and 2020 Ops
- Bureau of Transportation Statistics (BTS) T-100 (CY13)
 - Cargo, Air Carrier and Air Taxi fleet mix
- Landing Fee Reports
 - GA fleet mix
 - Day/night mix (all categories but Military)
- Air Traffic Control Tower (ATCT) input
 - Military aircraft mix and day/night split

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2015 Flight Operations - draft

Category or Group	Departure			Arrival			Closed Pattern ⁽¹⁾			Total		
	Day (7 am- 10 pm)	Night (10 pm- 7 am)	Total	Day (7 am- 10 pm)	Night (10 pm- 7 am)	Total	Day (7 am- 10 pm)	Night (10 pm- 7 am)	Total	Day (7 am- 10 pm)	Night (10 pm- 7 am)	Total
Subtotal by ATAR Category												
Air Carrier	1,007	19	1,026	1,016	10	1,026	-	-	-	2,023	29	2,052
Cargo	395	643	1,038	78	960	1,038	-	-	-	473	1,603	2,076
Air Taxi	5,047	1,122	6,169	4,894	1,275	6,169	-	-	-	9,941	2,397	12,338
GA	34,624	3,216	37,840	34,993	2,848	37,841	8,663	398	9,061	78,280	6,462	84,742
Military	294	-	294	294	-	294	-	-	-	588	-	588
Subtotal by Group												
Heavy Jet	29	396	425	25	400	425	-	-	-	54	796	850
Large Jet	1,207	247	1,454	1,066	389	1,455	-	-	-	2,273	636	2,909
Regional Jet	4,539	975	5,514	4,458	1,056	5,514	-	-	-	8,997	2,031	11,028
Business Jet	18,469	2,243	20,712	18,703	2,009	20,712	1,057	180	1,237	38,229	4,432	42,661
Turboprop	6,996	803	7,799	7,151	649	7,800	-	-	-	14,147	1,452	15,599
Piston Prop	9,859	312	10,171	9,594	577	10,171	7,606	218	7,824	27,059	1,107	28,166
Helicopter	268	24	292	278	13	291	-	-	-	546	37	583
TOTAL	41,367	5,000	46,367	41,275	5,093	46,368	8,663	398	9,061	91,305	10,491	101,796

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Forecast Development

- TAF

Modeled Scenario	Attribute	Air Carrier	Air Taxi	General Aviation	Military	Total
2015	n/a	4,126	12,337	84,736	588	101,787
n/a	Percent Increase from TAF	19.0%	4.9%	5.0%	0.0%	5.5%
2020	n/a	4,908	12,944	88,990	588	107,430

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2020 Forecast Flight Operations - draft

Category or Group	Departure			Arrival			Closed Pattern ⁽¹⁾			Total		
	Day (7 am- 10 pm)	Night (10 pm- 7 am)	Total	Day (7 am- 10 pm)	Night (10 pm- 7 am)	Total	Day (7 am- 10 pm)	Night (10 pm- 7 am)	Total	Day (7 am- 10 pm)	Night (10 pm- 7 am)	Total
Subtotal by ATAR Category												
Air Carrier	1,198	23	1,221	1,209	12	1,221	-	-	-	2,407	35	2,442
Cargo	469	764	1,233	94	1,139	1,233	-	-	-	563	1,903	2,466
Air Taxi	5,293	1,178	6,471	5,133	1,338	6,471	-	-	-	10,426	2,516	12,942
GA	36,364	3,376	39,740	36,752	2,987	39,739	9,098	418	9,516	82,214	6,781	88,995
Military	294	-	294	294	-	294	-	-	-	588	-	588
Subtotal by Group												
Heavy Jet	35	471	506	31	475	506	-	-	-	66	946	1,012
Large Jet	1,429	294	1,723	1,265	458	1,723	-	-	-	2,694	752	3,446
Regional Jet	4,761	1,024	5,785	4,677	1,108	5,785	-	-	-	9,438	2,132	11,570
Business Jet	19,397	2,355	21,752	19,643	2,109	21,752	1,110	189	1,299	40,150	4,653	44,803
Turboprop	7,334	844	8,178	7,497	681	8,178	-	-	-	14,831	1,525	16,356
Piston Prop	10,382	329	10,711	10,080	631	10,711	7,988	229	8,217	28,450	1,189	29,639
Helicopter	280	24	304	289	14	303	-	-	-	569	38	607
TOTAL	43,618	5,341	48,959	43,482	5,476	48,958	9,098	418	9,516	96,198	11,235	107,433

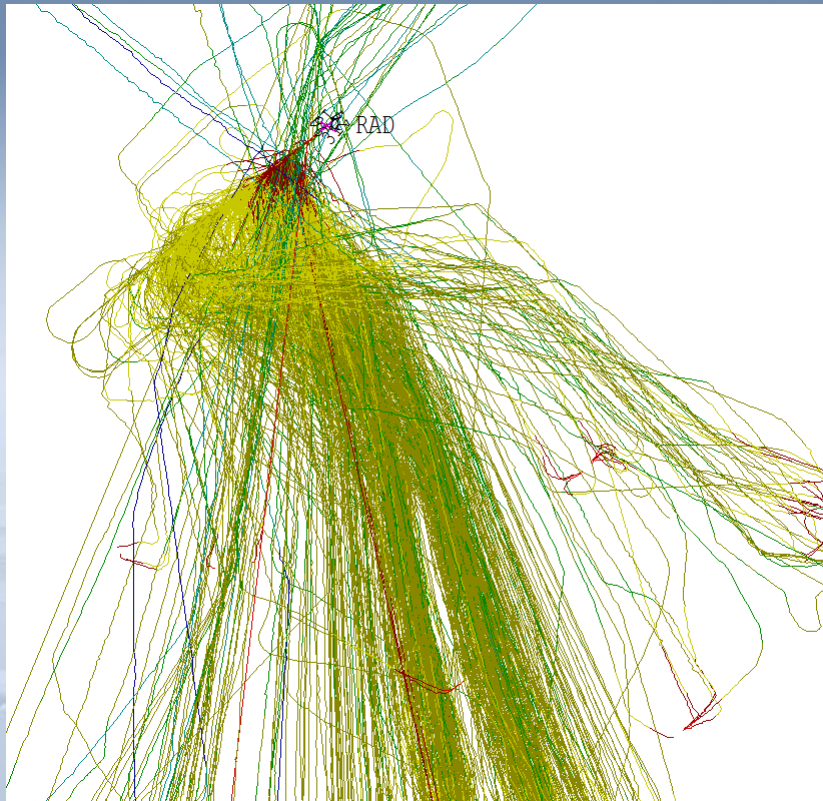
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Next Step - NEM Development

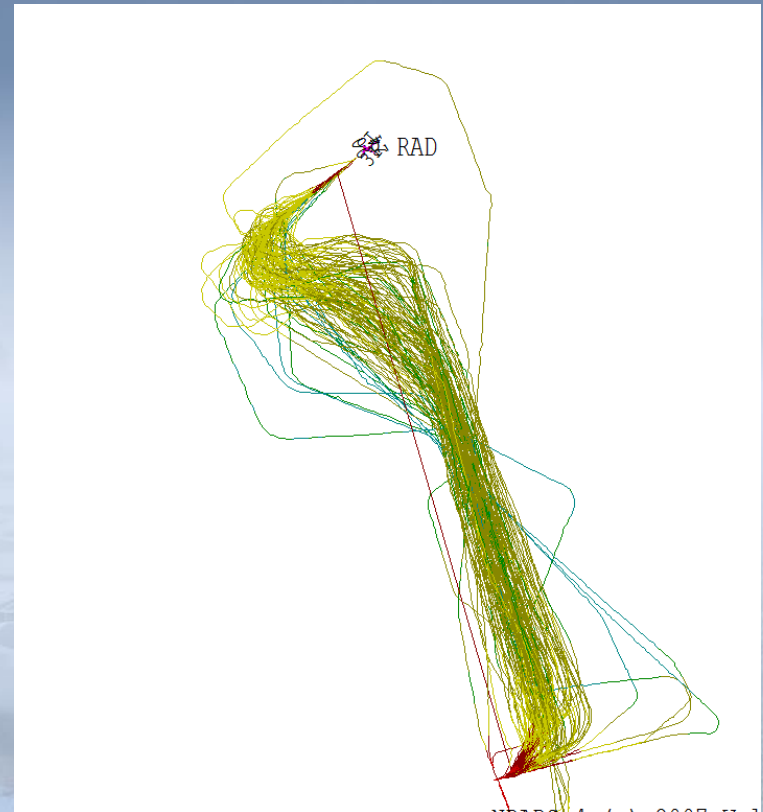
- Runway Utilization
 - ATCT input
- Flight Tracks
 - Radar analysis nearly complete
- Flight Track Utilization
 - From 2008 NEM
- Flight Profiles
 - Standard profiles anticipated
 - Stage Length distribution from BTS for departures
- Run-ups – TAC input needed
- Document preparation and submission

Radar Data Analysis

- Radar Data from 05/20/2013 - 05/19/2014 primarily covers aircraft traffic between ABE and PHL



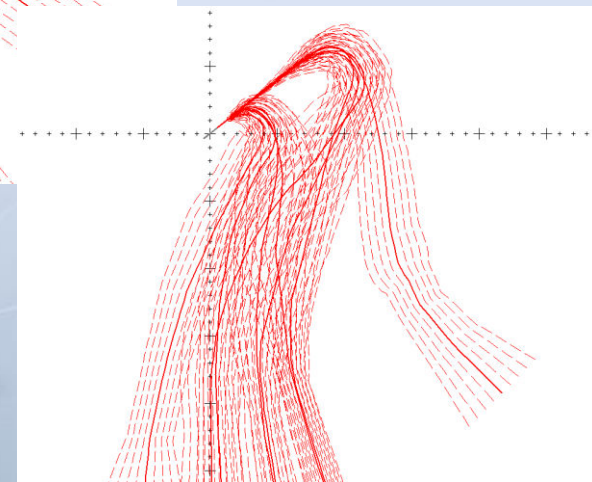
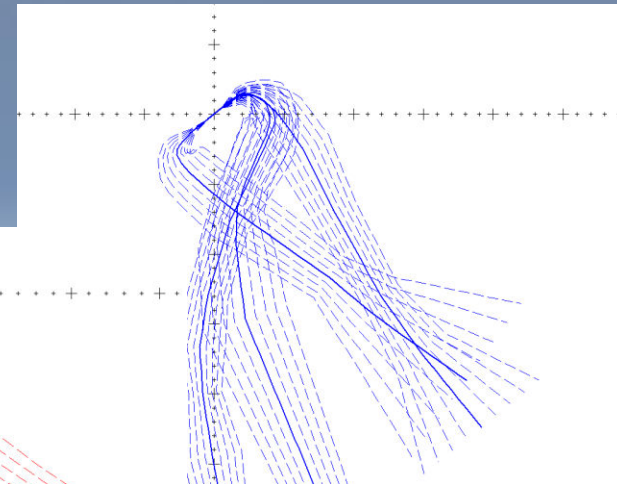
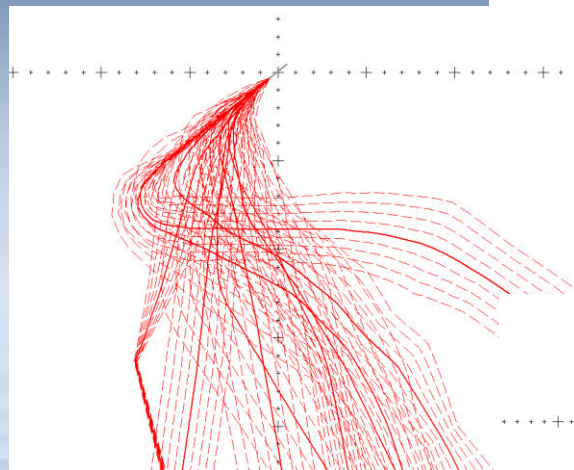
All arrivals on Runway 06



Directional "bundle"

Departure and Arrival Tracks Derived

- Departures
 - 3 Runway 06 tracks and 1 Runway 24 track
- Arrivals - Runway 06
 - 9 tracks
- Arrivals – Runway 24
 - 8 tracks
- Likely supplement with and compare to 2008 NEM



Closed Pattern Tracks

- Insufficient data to create INM tracks
- Need TAC/ATCT input
- May supplement with/compare to 2008 NEM

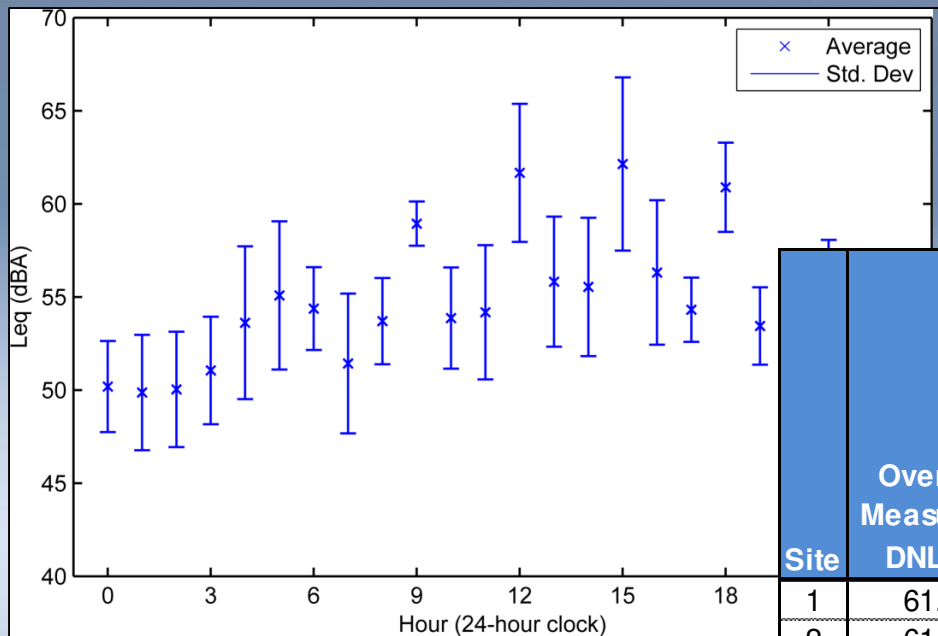


Supplemental Noise Measurements

- Test Plan submitted early Aug 2014
- Conducted 18Aug – 02Sep 2014 (straddled the airshow weekend)
- 8 Sites
- DNL, Leq, Lmax, Lmin
- Manned observations, each site
 - 4 hours, on average
 - Morning and afternoon periods
- Effect of aircraft on total DNL
- Report is imminent



Prelim. Measurement Results



Site	Overall Measured DNL ⁽¹⁾	Aircraft Leq and Total Leq (Total minus Aircraft) During Observation Periods ⁽²⁾			Primary Noise Source (estimated)
		Min	Max	Avg	
1	61.7	-4.2	-3.8	-4.0	Aircraft slightly more than church bells
2	61.0	-7.7	-6.8	-7.3	Aircraft
3	59.3	-5.4	16.6	5.6	Aircraft are likely a secondary source
4	60.1	-4.9	-4.3	-4.6	Aircraft on par with other sources
5	60.0	-10.4	-7.9	-9.2	Aircraft
6	61.0	-7.8	-7.4	-7.6	Aircraft
7	63.3	-7.2	-1.8	-4.5	Aircraft
8	60.1	-2.4	-2.1	-2.3	Road traffic

Notes:

(1) average of 15 days per site; includes airshow weekend.

(2) average of 4 hours of manned observation per site

TAC Action Items

- Review/comment on flight operations and memo
 - Fleet mixes, GA types, day/night ops, etc
 - Provide insight on changes to occur in next 5 years
- Provide input on run-up operations, if applicable
- Suspense date of 2 weeks

- Upcoming soon (memos TBD)
 - Review/comment on runway utilization percentages, flight tracks and track utilization percentages

TAC Input/Discussion



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