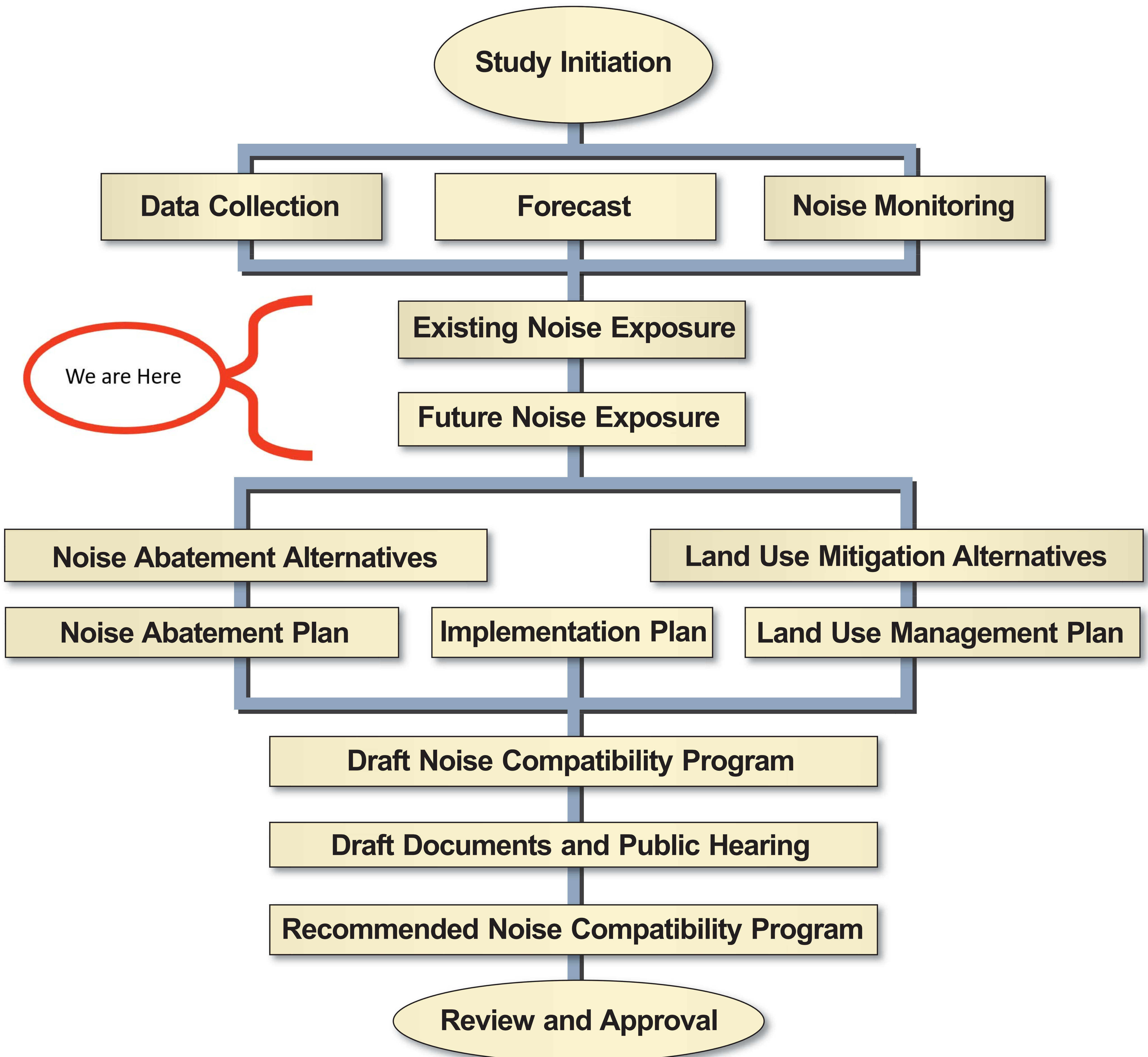


Part 150 Process



Land Use Noise Sensitivity Matrix

Per Part 150:



Compatible



Compatible with Sound Insulation



Incompatible



Residential

	OUTDOOR NOISE LEVEL		
	< 65 DNL	65-75 DNL	75+ DNL
1-2 Family	Compatible	Compatible with Sound Insulation	Incompatible
Multi-Family	Compatible	Compatible with Sound Insulation	Incompatible
Mobile Homes	Compatible	Incompatible	Incompatible
Dorms, etc.	Compatible	Compatible with Sound Insulation	Incompatible



Institutional

Schools	Compatible	Compatible with Sound Insulation	Incompatible
Place of Worship	Compatible	Compatible with Sound Insulation	Incompatible
Hospitals	Compatible	Compatible with Sound Insulation	Incompatible
Nursing Homes	Compatible	Compatible with Sound Insulation	Incompatible
Libraries	Compatible	Compatible with Sound Insulation	Incompatible



Recreational

Sports/Play	Compatible	Compatible	Incompatible
Amphitheaters, Music Shells	Compatible	Incompatible	Incompatible
Camping	Compatible	Compatible	Incompatible

Commercial*

All Uses	Compatible	Compatible	Compatible
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Industrial*

All Uses	Compatible	Compatible	Compatible
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Agricultural

All Uses	Compatible	Compatible	Compatible
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*Appropriate noise level reduction must be incorporated into the design of areas where the public is received, office areas, and other noise-sensitive areas.

How Noise Contours are Generated

User Inputs

Inputs

- Airport Information
- Aircraft Flight Tracks
- Aircraft Fleet
- Number of Operations
- Runway Utilization
- Time of Day
- Aircraft Climb Profiles
- Departure Trip Length
- Meteorological Data
- Topographic Data

Source

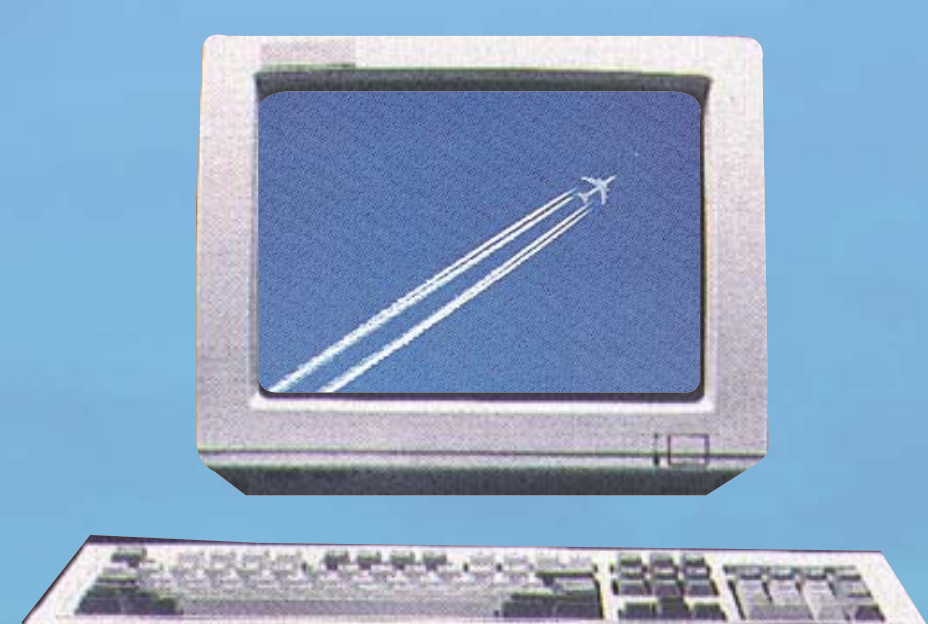
- ▶ Airport Layout Plan
- ▶ FAA Radar Data, Minnesota Air National Guard (MnANG)
- ▶ Traffic Flow Management System (TFMS), MnANG
- ▶ Tower, TFMS, Air Traffic Activity Data System (ATADS)
- ▶ Radar/Wind Data, Radar Data
- ▶ Radar Data, TFMS
- ▶ AEDT, Radar Data, MnANG
- ▶ TFMS
- ▶ Climatic Data, AEDT
- ▶ Airport Layout Plan, U.S. Geological Survey



Aviation Environmental Design Tool (AEDT)

AEDT-Provided Information

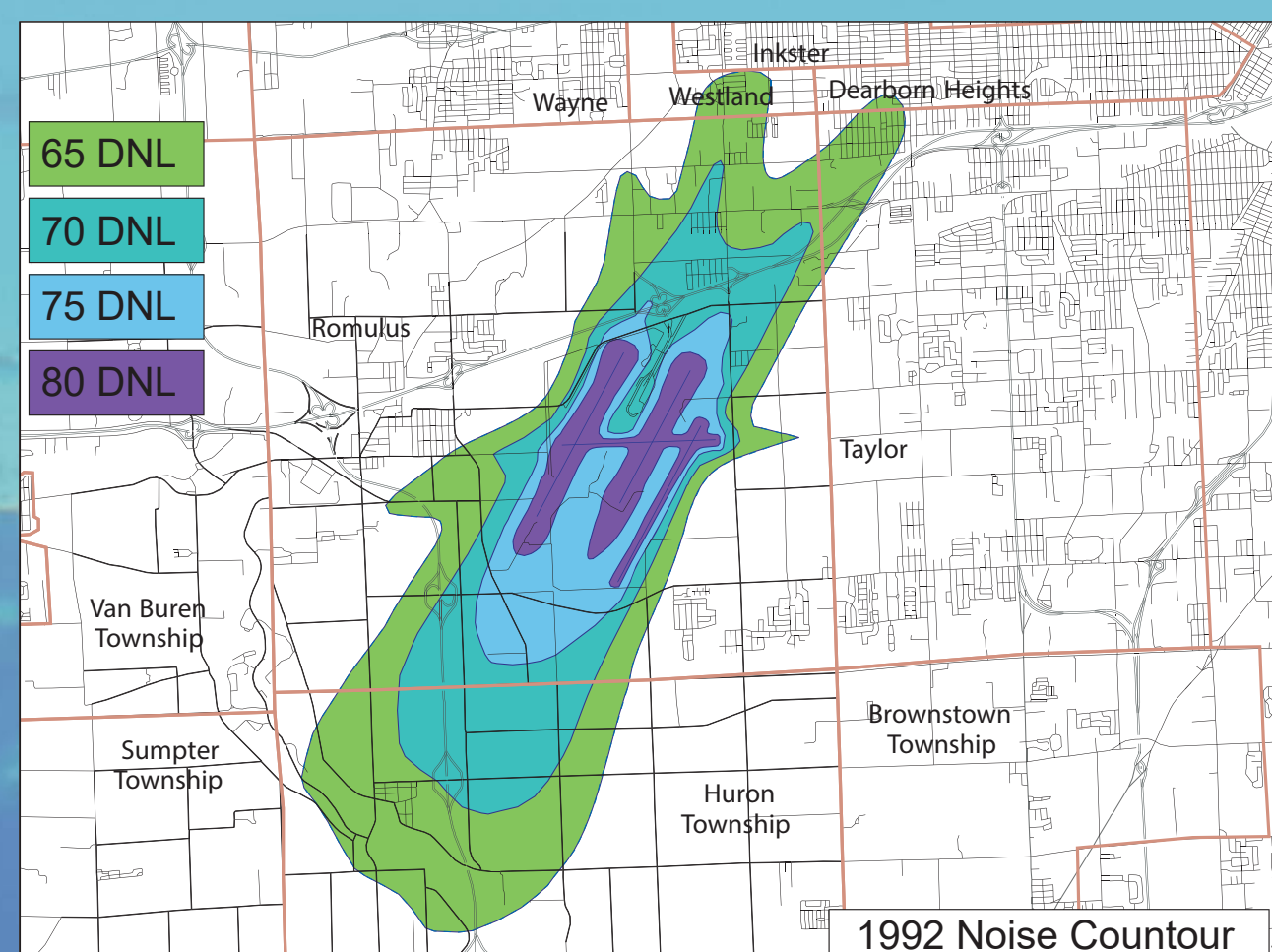
- Aircraft Noise Levels
- Aircraft Performance Data



Types of Aircraft Noise Considered within AEDT

- Arrival
- Departure
- Flyover
- Reverse Thrust (Braking)
- Run-up Noise

Output

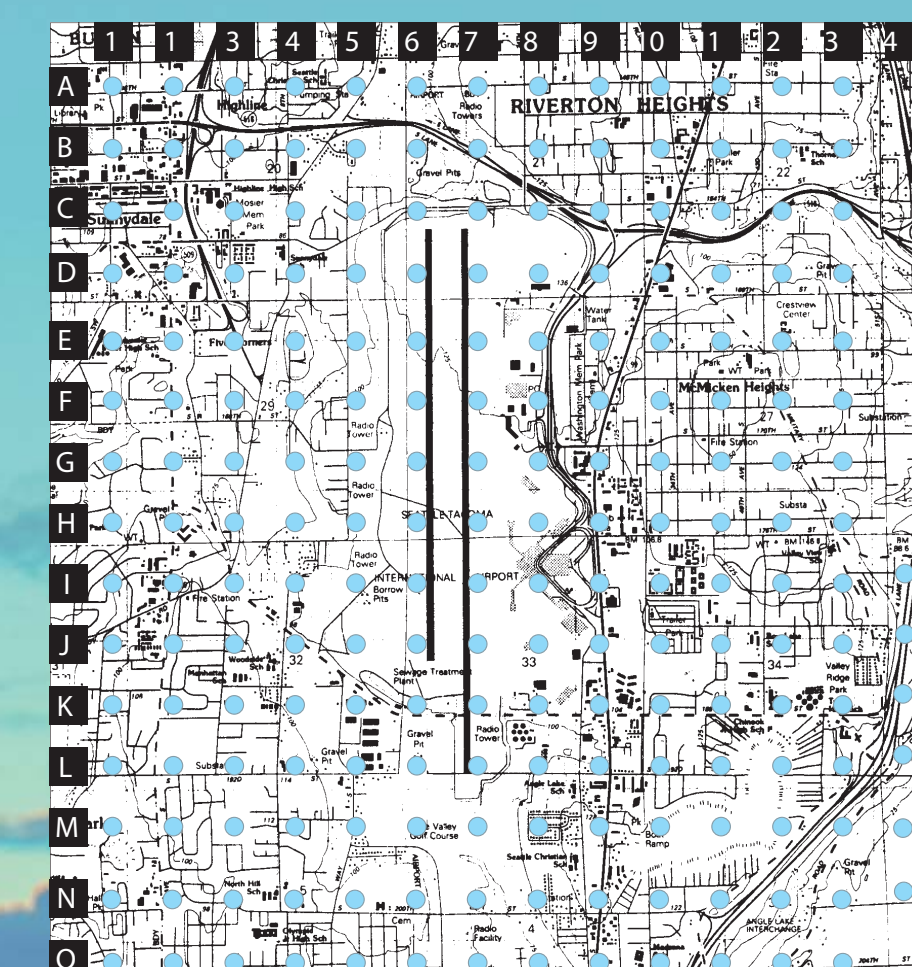


Noise Contours

SUMMARY OF GRID DATA - Comparative DNL and SEL Data
With and Without NADP Close-In and Distant Procedures
Cincinnati-Northern Kentucky International Airport
(1 of 4)

Number	Coordinate Points		DNLs and Changes				SELS and Changes						
	X	Y	Standard	Close-In	Change	Distant	Change	Standard	Close-In	Change	Distant	Change	
1	-15000	24000	A08	49.1	48.5	-0.6	47.4	-1.7	96.4	94.2	-2.2	92.4	-4.0
2	-12000	24000	A09	51.6	50.8	-0.8	49.5	-2.1	97.5	95.1	-2.4	93.6	-3.9
3	-9000	24000	A10	51.8	50.6	-1.2	49.7	-2.1	102.5	97.1	-5.4	97.2	-5.3
4	-6000	24000	A11	54.0	53.8	-0.2	53.7	-0.3	95.7	90.7	-5.0	91.5	-4.2
5	-3000	24000	A12	59.2	59.1	-0.1	59.1	-0.1	88.7	88.7	0.0	88.7	0.0
6	0	24000	A13	52.9	52.7	-0.2	52.4	-0.5	93.1	91.2	-1.9	88.8	-4.3
7	3000	24000	A14	58.9	58.6	-0.3	58.4	-0.5	98.4	96.0	-2.4	94.7	-3.7
8	6000	24000	A15	50.8	50.1	-0.7	49.3	-1.5	95.0	93.1	-1.9	90.8	-4.2
9	-15000	21000	B08	47.6	47.1	-0.5	46.0	-1.6	93.6	91.6	-2.0	89.3	-4.3
10	-12000	21000	B09	51.5	50.7	-0.8	49.5	-2.0	98.6	95.9	-2.7	94.7	-3.9
11	-9000	21000	B10	53.9	52.2	-1.7	52.0	-1.9	104.3	97.3	-7.0	103.1	-1.2
12	-6000	21000	B11	54.9	54.2	-0.7	54.3	-0.6	101.6	94.9	-6.7	100.9	-0.7
13	-3000	21000	B12	58.7	58.6	-0.1	58.6	-0.1	93.3	88.1	-5.2	92.3	-1.0
14	0	21000	B13	53.1	52.6	-0.5	52.5	-0.6	93.5	91.0	-2.5	89.3	-4.2
15	3000	21000	B14	59.2	58.8	-0.4	58.6	-0.6	99.8	96.9	-2.9	95.9	-3.9
16	6000	21000	B15	50.7	50.0	-0.7	49.2	-1.5	94.6	92.3	-2.3	90.3	-4.3
17	-15000	18000	C08	47.2	46.4	-0.8	45.9	-1.3	90.8	88.5	-2.3	86.5	-4.3
18	-12000	18000	C09	51.5	50.4	-1.1	49.7	-1.8	98.1	95.3	-2.8	93.8	-4.3
19	-9000	18000	C10	54.7	52.8	-1.9	52.5	-2.2	101.6	97.6	-4.0	99.8	-1.8
20	-6000	18000	C11	57.2	55.4	-1.8	56.3	-0.9	105.0	98.6	-6.4	106.0	-0.8

Tabular Reports



Grid Point Analysis

Comparison of Noise Levels

COMMON OUTDOOR SOUND LEVELS

NOISE LEVEL
dB (A)

COMMON INDOOR SOUND LEVELS

B747-200 Takeoff*



110



Rock Band
Inside Subway Train

Gas Lawn Mower at 3 ft.



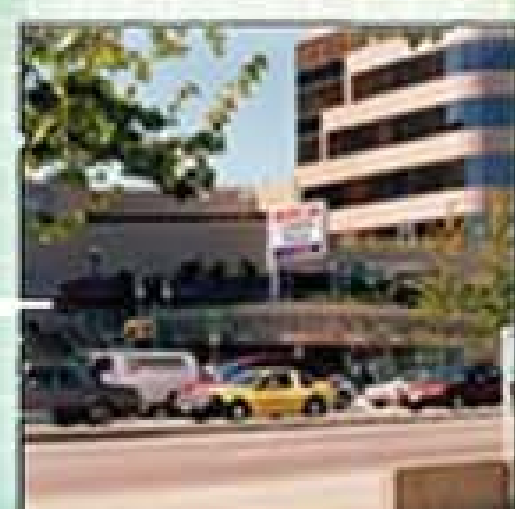
100



Food Blender
Garbage Disposal at 3 ft.

Diesel Truck at 150 ft.

DC-9-30 Takeoff*



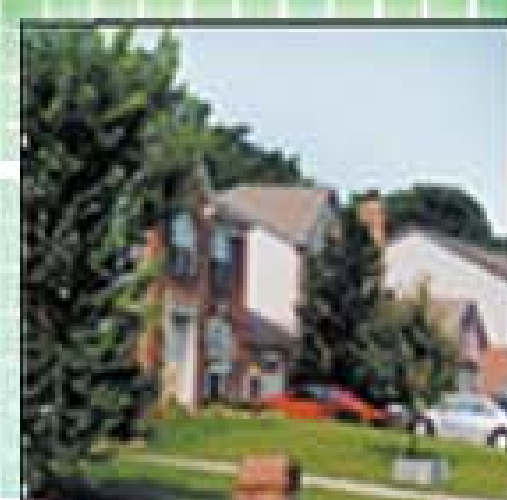
90



Shouting at 3 ft.

Noisy Urban Daytime

B757 Takeoff*



80



Vacuum Cleaner at 10 ft.
Normal Speech at 3 ft.

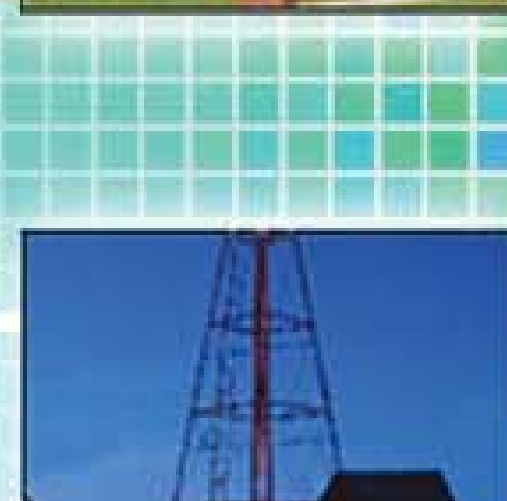
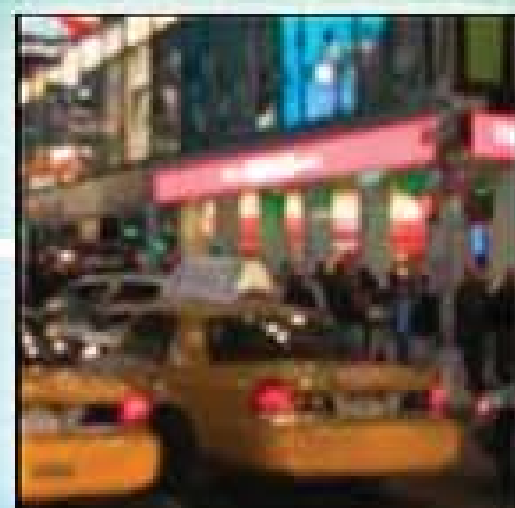
Commercial Area

70



Quiet Urban Daytime

Quiet Urban Nighttime



60

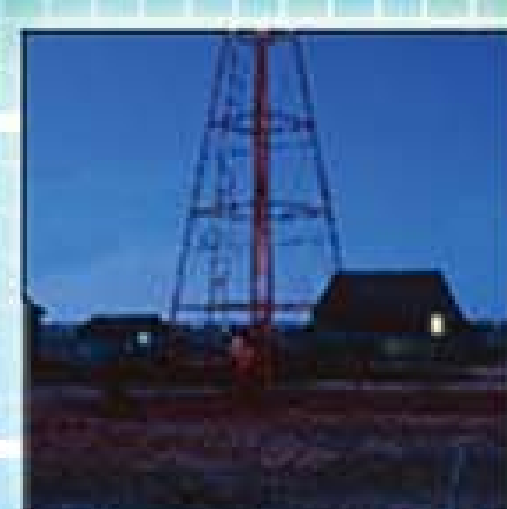


Large Business Office
Dishwasher Next Room
Small Theater

50



Quiet Rural Nighttime



40

Large Conference Room (Background)

30

Library
Bedroom at Night
Concert Hall (Background)

Threshold of Hearing

20

Broadcast and Recording Studio

10

0

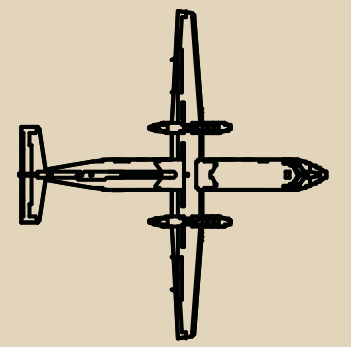
* As measured along the takeoff path 2 miles from the overflight end of the runway.

Aircraft Noise Footprints

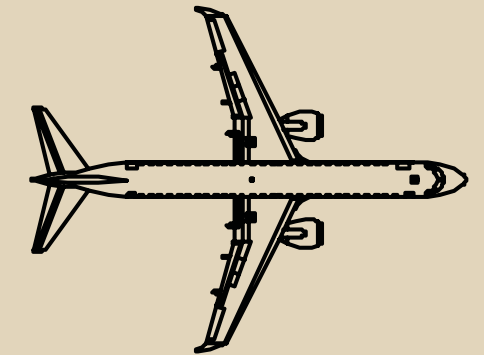
Cirrus SR22



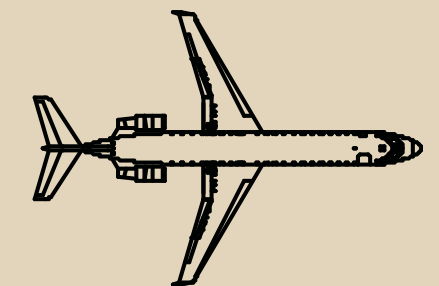
De Havilland DHC830



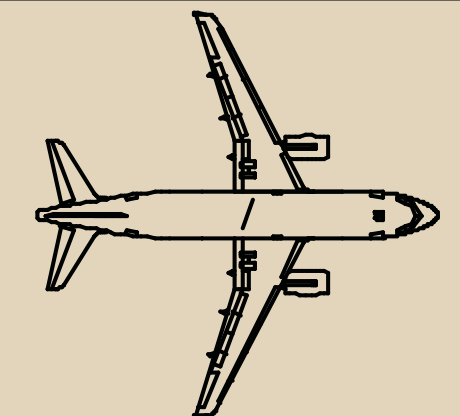
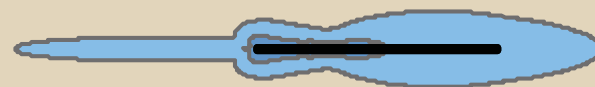
Embraer EMB190



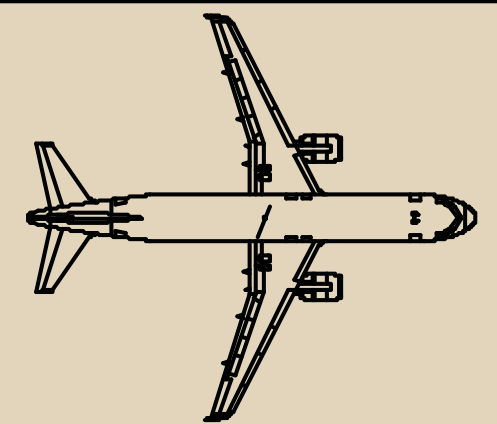
Bombardier CRJ-900/700/200



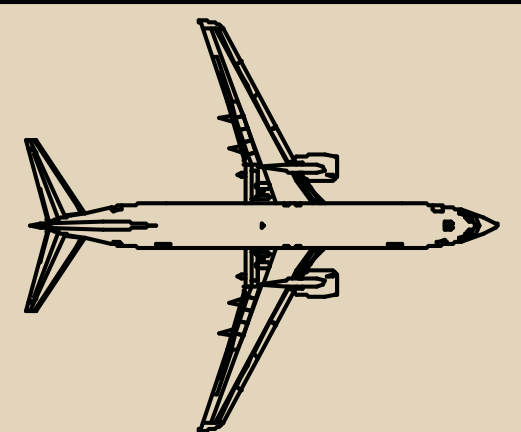
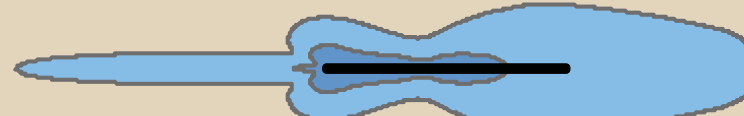
Airbus A319-100



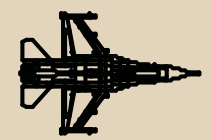
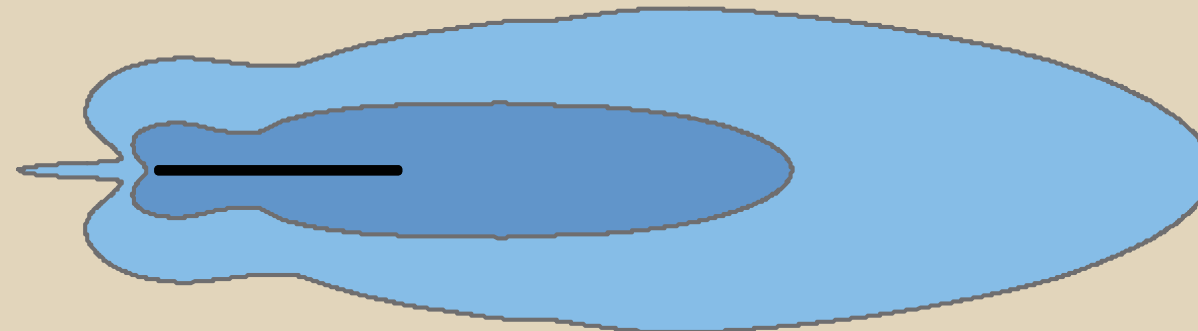
Airbus A320-200



Boeing B737-800



Lockheed F-16 Fighting Falcon



Miles to Touchdown

Miles from Brake Release

7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8