

Aircraft Noise Modeling

- **Two Separate Noise Evaluations are Proposed**
 - **EA Noise Analysis**
 - Required as part of the Environmental Assessment
 - **Existing Noise Curfew Evaluation**
 - The Airport proposes to remove the existing noise curfew
 - Separate action not required by the Environmental Assessment

EA Noise Analysis

- **EA Noise Analysis**
 - **The following conditions will be evaluated:**
 - **Noise modeling years: 2018, 2023, 2038**
 - **For each modeling year:**
 - **Noise modeling with and without the runway extension for comparison of impacts**
 - **Existing noise curfew in place**
 - **FAA noise compatibility guidelines will be reviewed to determine noise and land use compatibility impacts**

Evaluation of Existing Noise Curfew

- **Existing Noise Curfew**
 - Implemented over 40 years ago (1970s)
 - Predates the Airport Noise and Capacity Act (ANCA) of 1990 and would not be possible today
 - Based on retired aircraft no longer in operation today
 - Modern aircraft are much quieter given the same weight class and operating conditions
 - Existing noise curfew limits aircraft operations between 11:00 PM to 6:30 AM on Runway 17/35 for:
 - Aircraft over 75,000 pounds
 - Any aircraft not certified or meeting current FAR Part 36 Standards.

Lifting of Existing Noise Curfew

- **Lifting of Noise Curfew Analysis**
 - **The following conditions will be evaluated:**
 - **Modeling will include the “no noise curfew” scenario**
 - **Noise modeling years: 2018, 2023, 2038**
 - **For each modeling year:**
 - **Noise modeling with and without the runway extension with curfew removed**
 - **Noise contours will be generated and compared to the existing and future conditions**
 - **FAA noise compatibility guidelines will be used to determine noise and land use compatibility impacts**

Aviation Activity Forecasts

Category	2018 Operations	2023 Operations	2038 Operations
Air Carrier	1,032	4,118	5,067
Air Taxi	7,309	2,909	213
General Aviation	33,579	34,489	36,072
Total	41,920	41,516	41,352

Source: Forecasts by Mead & Hunt (Pending FAA Approval)

DNL Noise Metric

- Required by the FAA and all Federal agencies to describe aircraft noise
- 24-hour summation of aircraft noise, then annualized
- Ten dB added to every aircraft operation between 10pm and 7am to make up for lower ambient noise
- Average over the year-typically 12 calendar months
- Accounts for: *Loudness of Events, Number of Events, Duration of Events, and Time of Day*
- Contour lines connect points of equal noise energy

DNL Threshold of Compatibility

- The 65 DNL is the threshold contour to define land use compatibility and “significance”
- Noise sensitive uses within the 65 DNL contour are considered non-compatible
- A 1.5 dB DNL increase over a noise sensitive use exceeds the threshold of significance for identifying environmental impacts
- Does NOT indicate that people are not affected by aircraft noise outside the 65 DNL noise contour

Noise Model Inputs

- **Total Annual Operations**
- **Aircraft Run-ups**
- **Aircraft Fleet Mix**
- **Time of Day/Night**
- **Runway Use**
- **Flight Tracks**
- **Flight Procedures**

Example of Noise Modeling Map

Not Kalamazoo / Battle Creek International Airport



0' 600' 1,200'

Figure 1
Taxiway Contours