

Meadow Lake Airport Association

13625 Judge Orr Road, Meadow Lake Airport (KFLY), Peyton, CO 80831-6051

Date: 24 September 2022

Subj: Noise

- Ref:
- (a) *"Meadow Lake Airport Layout Plan"* (2019)
 - (b) *"Environmental Assessment – Turf Runway"* (2013)
 - (c) *"National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions"* (FAA Order 5050.4B) (2006)
 - (d) *"Noise Control and Compatibility Planning for Airports"* (FAA Advisory Circular 150/5020-1) (1983)

1. Formal Noise Studies, commonly referred to as "Part 150 Studies", are conducted under the guidance of the *"Noise Control and Compatibility Planning for Airports"* (FAA Advisory Circular 150/5020-1) [Reference (d)]. The Part 150 program is voluntary, although airport operators are encouraged to participate. These formal studies, and frequently an accompanying "Noise Mitigation Program", are common around Commercial Service airports. But they are uncommon for General Aviation airports due to cost and need. Meadow Lake Airport has not had a formal Part 150 Noise Study prepared since its inception. Aviation Inc, our consultant, has estimated that it would cost approximately \$50,000 for a Part 150 study to be prepared for Meadow Lake.
2. Reference (d) also addresses the use of Environmental Assessments to address noise around airports:

"23. ENVIRONMENTAL ASSESSMENTS. Environmental Assessments (EA) are prepared for many types of airport development projects and/or airport operational changes under the requirements of the National Environmental Policy Act (NEPA), Regulations of the Council on Environmental Quality (CEQ), Department of Transportation Order 5610.1C (Procedures for Considering Environmental Impacts), FAA Order 1050.1C (Policies and Procedures for Considering Environmental Impacts), and FAA Order 5050.4 (Airport Environmental Handbook). Many EA's contain analyses of airport noise, compatible land use, social impacts, and induced socioeconomic impacts. An Airport Noise Compatibility Program may supplement, but is not intended to replace an EA in meeting required environmental analyses. Similarly, an EA may contain information that, provided it is current, can be valuable inputs to developing airport noise exposure maps and airport noise compatibility programs. To the extent the information in the EA is appropriate, such use of existing sources is encouraged. See also, paragraph 26 for applicability of NEPA to Part 150."
3. An Environmental Assessment was accomplished for the proposed Turf Runway at Meadow Lake [Reference (b)] under a CDOT grant. It was prepared in accordance with provisions of the *"National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions"* (FAA Order 5050.4B) [Reference (c)] and addresses noise in two chapters:
 - Chapter 4.0 – Affected Environment

4.2.13 Noise [Enclosure 1]
This section discusses existing aircraft operational activity and fleet mix. The attached chart "Existing Noise Contours (2012)" displays 65, 75, and 85 DNL noise contours prior to commissioning of the Turf Runway (15G-33G)

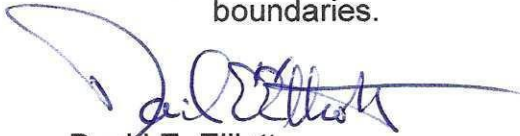
- Chapter 5.0 – Environmental Consequences and Mitigation Measures

5.14 Noise [Enclosure 2]
This section discusses alternatives of no action (Alternative 1) versus opening the new Turf Runway (Alternative 2). The analysis and depiction charts indicate no change in the noise contours for the airport.

5.21 Summary of Environmental Impacts indicates no adverse effects on the environment from either alternative. [Enclosure 3]

4. The FAA approved Meadow Lake Airport Layout Plan [Reference (a)] depicts the 65, 75, 85 DNL contours on Sheet 19 of 21, "Land Use Drawing". [Enclosure 4]

- Very little of the 65 DNL contour overlaps onto adjoining properties. Note: Runway 26 is very rarely used for departures, and that 65 DNL extension is considered to be inconsequential.
- The 85 and 75 DNL contours are totally contained within airport property boundaries.



David E. Elliott
President, MLAA Board of Directors

- Encl (1) Environmental Assessment, 4.0 Affected Environment, 4.2.13 Noise
(2) " " , 5.0 Environmental Consequences, 5.14 Noise
(3) " " , " " , 5.21 Summary
(4) KFLY Airport Layout Plan (ALP) Sheet 19 of 21 – Land Use Drawing

4.2.13 Noise

Noise associated with airport activity is often a controversial topic and of specific importance to the FAA in examining a proposed action. Airport development projects that have the potential to change the airport runway configuration(s), aircraft operations and movements, aircraft types, or aircraft flight characteristics can change the future airport-related noise levels. In order to accurately assess the existing noise levels and potential for change, the FAA developed a computer model that simulates aircraft activity and resulting noise at an airport.

4.2.13.1 Noise Methodology

The model, Integrated Noise Model (INM-Version 7.0c), produces a prediction of aircraft day/night noise levels (DNLs) and the potential for significant impacts. A significant noise impact would occur if noise sensitive areas were to experience an increase in noise of DNL 1.5 decibels (dB) or more at or above DNL 65 dB noise exposure when compared to existing conditions. When calculating DNLs, noise events that occur at night (between the hours of 10:00 pm and 7:00 am) are given a 10 dB penalty to account for the increased sensitivity during the night time hours.

This EA will provide noise exposure contours for DNL values of 65, 75, and 85 dBs. Areas within contour levels above 65 dB are considered by the FAA to be exposed to significant aircraft sound levels. The DNL contours developed for FLY consider the following factors:

- Aircraft arrival and departure profiles
- Runway layout
- Runway use
- Flight corridors
- Operational activity within each flight corridor
- Fleet mix and associated number of operations (for an annual average 24-hour day)
- Distribution of operations between the daytime (7:00 a.m. to 10:00 p.m.) and night time hours (10:00 p.m. to 7:00 a.m.)

4.2.13.2 Baseline Runway Layout

FLY has three runways; Runway 15/33, 8/26, and N/S. Runway 15/33 is 6,000 feet long and 60 feet wide. Runway 8/26 is 2,084 feet long and 35 feet wide. Runway N/S is 1,800 feet long and 15 feet wide.

4.2.13.3 Existing Runway Use and Flight Tracks

Runway usage is an essential component in noise analysis as runways with more usage typically result in greater noise levels. The existing (i.e. Year 2011) runway use, as depicted in **Table 4-4**, was developed from data provided by FLY’s airport management personnel and comparisons to the runway usage at the Colorado Springs Airport, the nearest towered airport. This data indicates the majority of arrivals and departures at FLY are on Runway 15 and 33 (96 percent). Additionally, it was indicated that approximately 5 percent of the daily operations occur during the nighttime hours.

TABLE 4-4 - EXISTING RUNWAY USE

| Runway | Arrivals | Departures | Touch and Go’s |
|--------------|-------------|-------------|----------------|
| 15 | 65% | 65% | 67% |
| 33 | 31% | 31% | 33% |
| 8 | 1% | 1% | 0% |
| 26 | 2% | 2% | 0% |
| N | 1% | 1% | 0% |
| S | 1% | 1% | 0% |
| Total | 100% | 100% | 100% |

Source: FLY Airport Management and Jviation, Inc.

4.2.13.4 Existing Aircraft Operational Activity

Aircraft noise is evaluated using average daily conditions; however, operations are typically reported annually. As such, the annual operations as reported in the FAA’s TAF were used to develop a base year (2011) average day operations (annual operations/365 days). **Table 4-5** depicts the annual operations and average day operations, as well as aircraft group; GA propeller, helicopter, and tow plane.

TABLE 4-5 - EXISTING AIRPORT OPERATIONS AND FLEET MIX

| Group | INM Aircraft | Aircraft Type | Average Day Ops | Annual Ops |
|---------------------|--------------|-------------------------------|-----------------|-------------------|
| GA Propeller | GASEPF | GA Single Eng Fix Prop | 59.98 | 21,892.05 |
| | GASEPV | GA Single Eng Variable Prop | 59.98 | 21,892.05 |
| | PA28 | Piper Warrior | 59.98 | 21,892.05 |
| | CAN 206T | Cessna 206 | 59.98 | 21,892.05 |
| | BEC58P | Beech Baron, Cessna 310 & 414 | 59.94 | 21,879.76 |
| | PA30 | Piper Twin Comanche | 11.11 | 4,054.08 |
| Helicopter | DHC6 | Beech Super King Air | 11.11 | 4,054.08 |
| | R44 | Robinson R44 | 3.37 | 1,228.51 |
| | S-70 | Blackhawk | 3.37 | 1,228.51 |
| | EC130 | Eurocopter EC-130 | 1.14 | 417.69 |
| Tow Plane | S-65 | Skycrane | 1.14 | 417.69 |
| | GASEPF | Piper Super Cub Substitution | 5.49 | 2,002.47 |
| Total | | | 336.58 | 122,851.00 |

Source: FLY Airport Management, Jviation, Inc., and the FAA Terminal Area Forecast, 2012

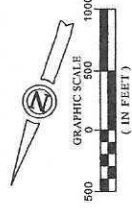
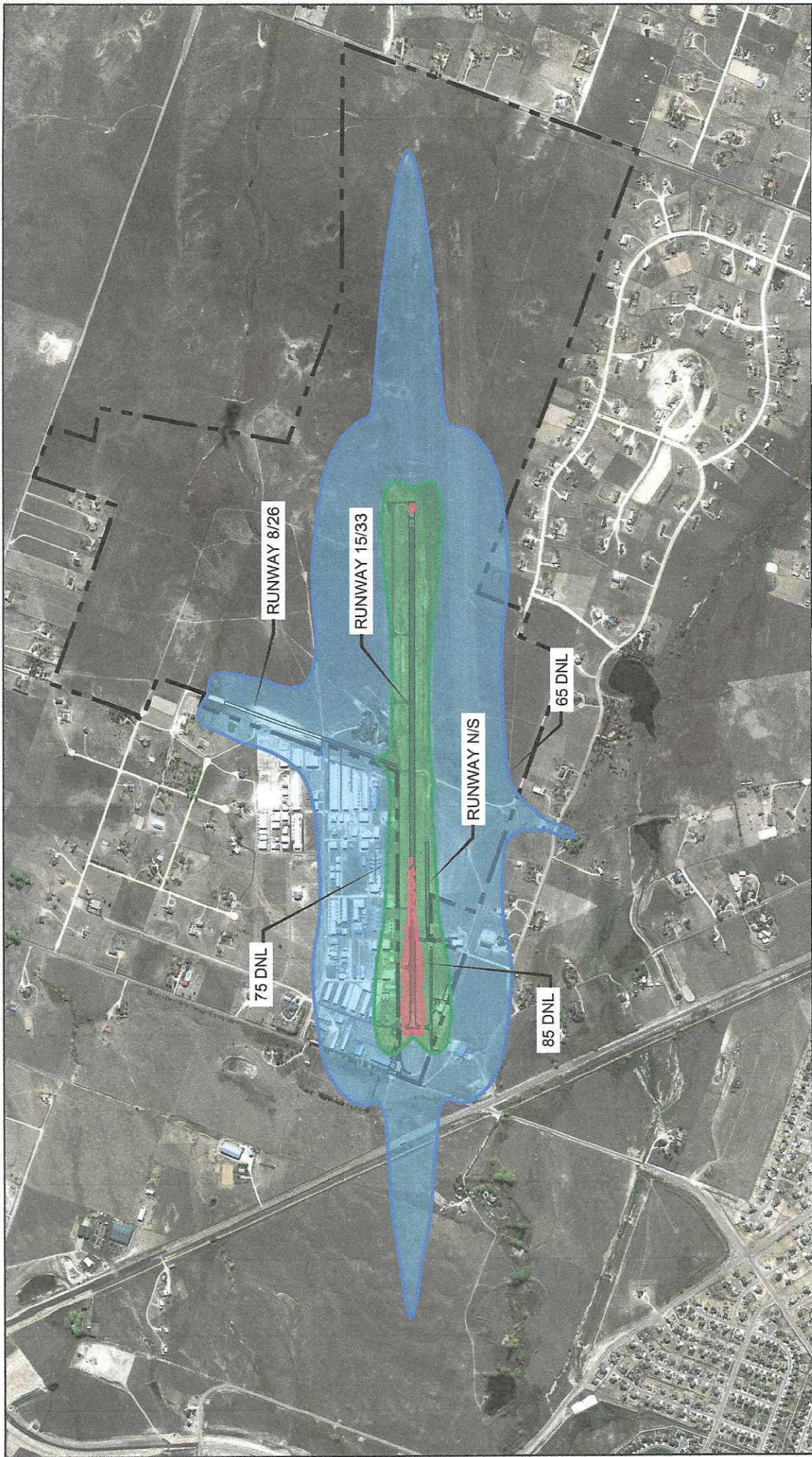
4.2.13.5 Existing Conditions

The extent of 65, 75, and 85 DNL noise contours for the year 2011, the base year and existing condition, are depicted in **Figure 4-5**. As shown, nearly the entire 65, 75 and 85 DNL noise contours lie within the airport property boundaries. Approximately 0.25 square miles of 65-74 DNL and 0.02 square miles of 75-84 DNL extend beyond the airport property. **Table 4-6** provides the size, in square miles, of each contour interval.

TABLE 4-6 - AREA (SQUARE MILES) WITHIN THE 65, 75, AND 85 DNL CONTOURS

| Year | 65-74 DNL | 75-84 DNL | 85+ DNL | TOTAL |
|---------------------------|-----------|-----------|---------|-------|
| 2012 – Existing Condition | 0.585 | 0.128 | 0.009 | 0.722 |

Source: Jviation, Inc.



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*ESTIMATED

- 85+ DNL
- 75-84 DNL
- 65-74 DNL

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MEADOW LAKE AIRPORT
EXISTING NOISE CONTOURS
2012

DATE: JUNE 1, 2012

FIGURE 4-5

5.12.2 Alternative 2 – Establishment of Turf Runway

Alternative 2 would not change any of the existing light emissions at the airport as the Turf Runway would be unlit and used for daytime operations. As such, Alternative 2 would not have the potential to create any light or visual-related impacts to the airport and surrounding communities.

5.13 NATURAL RESOURCES AND ENERGY SUPPLY

Airport development actions have the potential to change energy requirements or the use of consumable natural resources. The FAA must evaluate potential impacts on supplies of energy and natural resources needed to build and maintain airports.

The airports effects on natural resources and energy supply are primarily related to the amount of energy and resources required for aircraft, ground support vehicles, airport and airfield lighting, terminal and hangar buildings, and motor vehicles.

5.13.1 Alternative 1 – No Action

Alternative 1 has the potential to increase fuel demand as the operations increase; however, the increased demand would be small and accommodated by the existing supplier and facilities. As such, Alternative 1 would not result in a significant impact. Furthermore, there are no known mineral or energy sources at FLY; therefore, it is not anticipated that any natural resources would be affected nor would there be a significant increase in demand for energy supplies.

5.13.2 Alternative 2 – Establishment of Turf Runway

Alternative 2 has the potential to increase fuel demand as aircraft operations increase; however, the increased demand would be small and accommodated by the existing supplier and facilities. As such, Alternative 2 would not result in a significant impact. Furthermore, there are no known mineral or energy sources at FLY; therefore, it is not anticipated that any natural resources would be affected nor would there be a significant increase in demand for energy supplies.

5.14 NOISE

When comparing no action and action alternatives that result in changes in aircraft activity or airfield operations, the FAA defines, in FAA Order 5050.4B, a significant noise impact occurs if an action increases aircraft noise levels within the no action 65 DNL contour 1.5 dB or more at any noise sensitive site. Noise sensitive areas, as defined in FAA Order 5050.4B, are areas where aircraft noise interferes with the area's typical activities or uses. Noise sensitive areas include residential neighborhoods; educational, health, and religious facilities; and outdoor recreational, cultural, and historic sites. Noise sensitive sites are the individual locations within these areas (e.g., a single-family residence within a neighborhood).

5.14.1 Methodology

The model, Integrated Noise Model (INM-Version 7.0c), produces a prediction of aircraft day/night noise levels (DNLs) and the potential for significant impacts. A significant noise impact would occur if noise sensitive areas were to experience an increase in noise of DNL 1.5 decibels (dB) or more at or above DNL 65 dB noise exposure when compared the existing conditions. When calculating DNLs, noise events that occur at night (between the hours of 10:00 pm and 7:00 am) are given a 10 dB penalty to account for the increased sensitivity during the night time hours.

This EA will provide noise exposure contours for DNL values of 65, 75, and 85 dBs. Areas within contour levels above 65 dB are considered by the FAA to be exposed to significant aircraft sound levels. The DNL contours developed for FLY consider the following factors:

- Aircraft arrival and departure profiles
- Runway layout
- Runway use
- Flight corridors
- Operational activity within each flight corridor
- Fleet mix and associated number of operations (for an annual average 24-hour day)
- Distribution of operations between the daytime (7:00 a.m. to 10:00 p.m.) and night time hours (10:00 p.m. to 7:00 a.m.)

5.14.2 Baseline Runway Layout

Presently, FLY has three runways; Runway 15/33, 8/26, and N/S. Runway 8/26 is 2,084 feet long and 35 feet wide. Runway 15/33 is 6,000 feet long and 60 feet wide. Runway N/S is 1,800 feet long and 15 feet wide. Alternative 1, the No Action Alternative will incorporate the existing configuration in developing the noise contours; while, Alternative 2, will incorporate the Turf Runway. In Alternative 2, the existing Runway N/S will be closed and replaced with the Turf Runway. The Turf Runway will be 5,000 feet long and 200 feet wide.

5.14.3 Runway Use

Runway usage is an essential component in noise analysis as runways with more usage typically result in greater noise levels. The runway use for Alternative 1, the No Action Alternative is depicted in **Table 5-4**. The runway use for Alternative 2, the Establishment of the Turf Runway is depicted in **Table 5-5**. Both runway usage tables were developed from data provided by FLY's airport management personnel and comparisons made to runway usage at the Colorado Springs Airport, the nearest towered airport. This data indicates the majority of arrivals and departures at FLY are on Runway 15 and 33 (96 percent). Additionally, it was indicated that approximately 5 percent of the daily operations occur during the nighttime hours

TABLE 5-4 - ALT. 1 RUNWAY USAGE

| Runway | Arrivals | Departures | Touch and Go's |
|--------|----------|------------|----------------|
| 15 | 65% | 65% | 67% |
| 33 | 31% | 31% | 33% |
| 8 | 1% | 1% | 0% |
| 26 | 2% | 2% | 0% |
| N | 1% | 1% | 0% |
| S | 1% | 1% | 0% |

Source: FLY Airport Management and Jviation, Inc.

TABLE 5-5 - ALT. 2 RUNWAY USAGE

| Runway | Arrivals | Departures | Touch and Go's |
|--------|----------|------------|----------------|
| 15 | 65% | 65% | 67% |
| 33 | 31% | 31% | 33% |
| 8 | 1% | 1% | 0% |
| 26 | 2% | 2% | 0% |
| N | 1% | 1% | 0% |
| S | 1% | 1% | 0% |

Source: FLY Airport Management and Jviation, Inc.

5.14.4 Alternative 1 – No Action

Aircraft noise is evaluated using average daily conditions; however, operations are typically reported annually. As such, annual operations as described in Section 2.3.4.1 were used to develop the average day operations (annual operations/365) for Alternative 1 – No Action in the forecasted year 2022.

Table 5-6 depicts annual operations and average day operations, as well as aircraft group; GA propeller, helicopter, and tow plane.

TABLE 5-6 – ALT. 1 AIRPORT OPERATIONS AND FLEET MIX

| Group | INM Aircraft | Aircraft Type | Average Day Ops | Annual Ops |
|---------------------|--------------|-------------------------------|-----------------|-------------------|
| GA Propeller | GASEPF | GA Single Eng Fix Prop | 73.86 | 26,958.81 |
| | GASEPV | GA Single Eng Variable Prop | 73.86 | 26,958.81 |
| | PA28 | Piper Warrior | 73.86 | 26,958.81 |
| | CAN 206T | Cessna 206 | 73.86 | 26,958.81 |
| | BEC58P | Beech Baron, Cessna 310 & 414 | 73.82 | 26,943.68 |
| | PA30 | Piper Twin Comanche | 13.68 | 4,992.37 |
| Helicopter | DHC6 | Beech Super King Air | 13.68 | 4,992.37 |
| | R44 | Robinson R44 | 4.14 | 1,512.84 |
| | S-70 | Blackhawk | 4.14 | 1,512.84 |
| | EC130 | Eurocopter EC-130 | 1.41 | 514.37 |
| Tow Plane | S-65 | Skycrane | 1.41 | 514.37 |
| | GASEPF | Piper Super Cub Substitution | 6.76 | 2,465.93 |
| | Total | | 414.48 | 151,284.00 |

Source: FLY Airport Management, Jviation, Inc., and the FAA Terminal Area Forecast, 2012

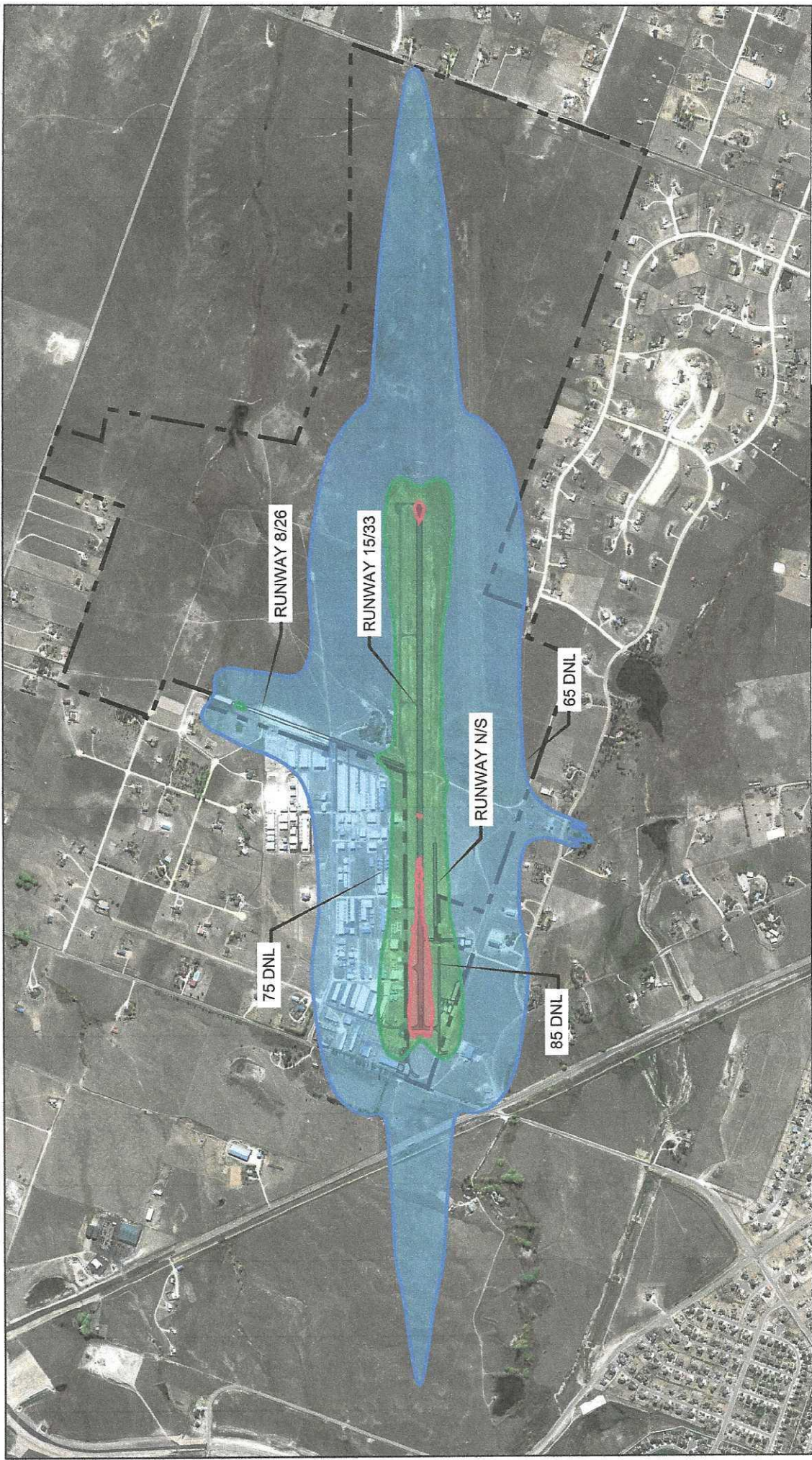
Figure 5-4 depicts the extent of 65, 75, and 85 DNL noise contours for the year 2022 in Alternative 1 – No Action. As shown, a majority of the 65 and nearly all of 75, and 85 DNL noise contours lie within the airport property boundaries. Approximately 0.32 square miles of 65-74 DNL and 0.32 square miles of 75-84 DNL extends beyond the airport property. **Table 5-7** provides the size, in square miles, of each contour interval.

TABLE 5-7 – ALT. 1 - AREA (SQUARE MILES) WITHIN THE 65, 75, AND 85 DNL CONTOURS

| Year | 65-74 DNL | 75-84 DNL | 85+ DNL | TOTAL |
|------------------|-----------|-----------|---------|--------|
| 2022 – No Action | 0.6978 | 0.1491 | 0.0121 | 0.8589 |

Source: Jviation, Inc.

The FAA has identified, in Order 5050.4B that a significant noise impact occurs if the aircraft noise analysis indicates that the proposed action results in an increase within the 65 DNL contour of 1.5 dB or greater at any noise sensitive site. The 65-74 DNL that lies outside of the airport property boundary increases 30 percent and the 75-84 DNL increases by 32 percent with the forecasted growth of operations without the proposed Turf Runway. However, there are no known noise sensitive areas within the forecasted contours and no new residences will be exposed to any noise above 65 DNL. As such, it is assumed that no significant noise impacts are expected as a result of Alternative 1.



MEADOW LAKE AIRPORT
 ALTERNATIVE 1
 NO ACTION
 2022

DATE: JUNE 1, 2012

FIGURE 5-4

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85+ DNL
 75-84 DNL
 65-74 DNL



5.14.5 Alternative 2 – Establishment of Turf Runway

Annual operations as described in Section 2.3.4.2 were used to develop the average day operations (annual operations/365) for Alternative 2 – Establishment of Turf Runway in the forecasted year 2022. Table 5-8 depicts annual operations and average day operations, as well as aircraft group; GA propeller, helicopter, and tow plane.

TABLE 5-8 – ALT. 2 AIRPORT OPERATIONS AND FLEET MIX

| Group | INM Aircraft | Aircraft Type | Average Day Ops | Annual Ops |
|--------------|--------------|-------------------------------|-----------------|------------|
| GA Propeller | GASEPF | GA Single Eng Fix Prop | 74.02 | 27,015.63 |
| | GASEPV | GA Single Eng Variable Prop | 74.02 | 27,015.63 |
| | PA28 | Piper Warrior | 73.80 | 26,938.44 |
| | CAN 206T | Cessna 206 | 73.80 | 26,938.44 |
| | BEC58P | Beech Baron, Cessna 310 & 414 | 73.59 | 26,861.25 |
| | PA30 | Piper Twin Comanche | 12.69 | 4,631.25 |
| | DHC6 | Beech Super King Air | 12.69 | 4,631.25 |
| Helicopter | R44 | Robinson R44 | 4.19 | 1,528.31 |
| | S-70 | Blackhawk | 4.14 | 1,512.88 |
| | EC130 | Eurocopter EC-130 | 1.35 | 494.00 |
| | S-65 | Skycrane | 1.35 | 494.00 |
| Tow Plane | GASEPF | Piper Super Cub Substitution | 17.30 | 6,313.94 |
| Total | | | 422.95 | 154,375.00 |

Source: FLY Airport Management, Jviation, Inc., and the FAA Terminal Area Forecast, 2012

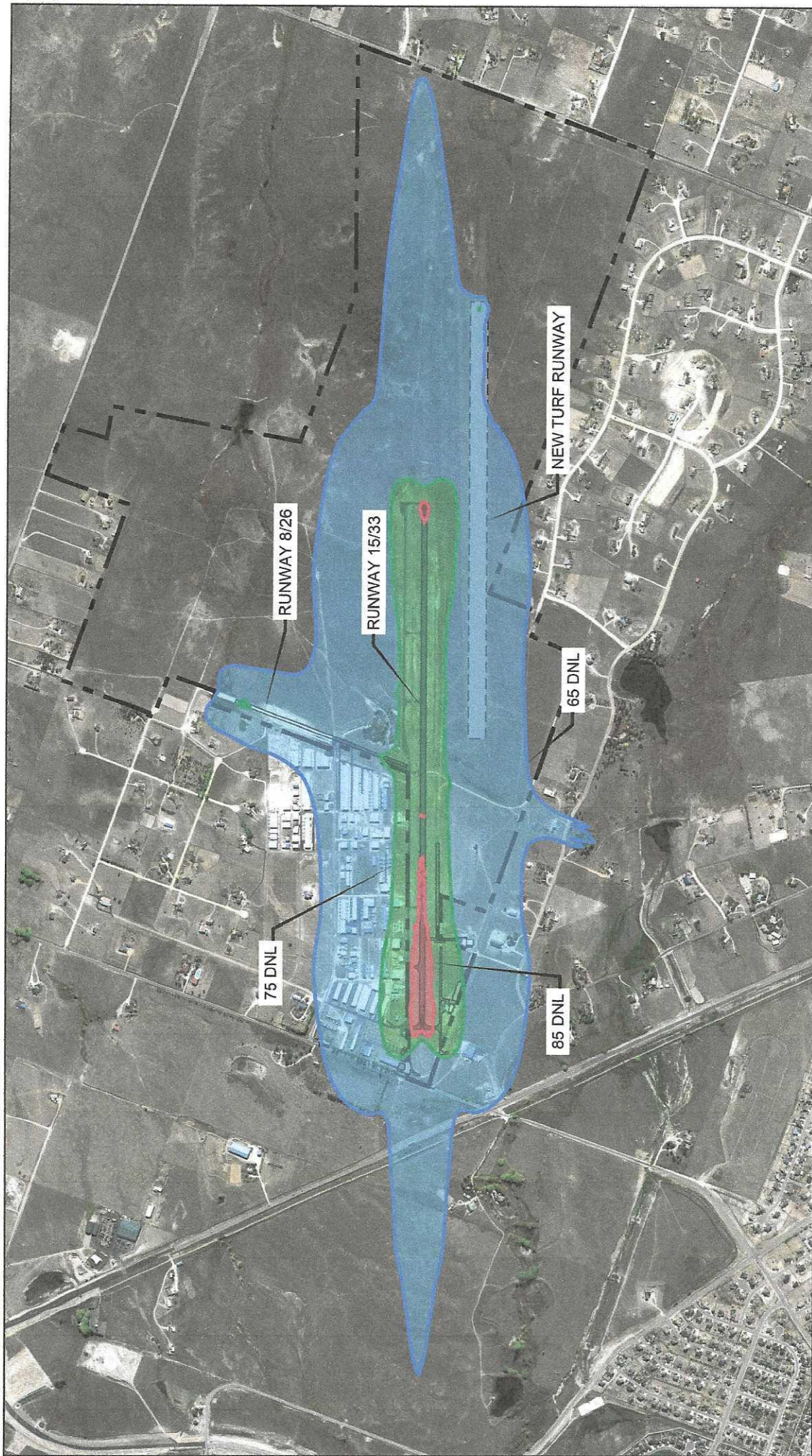
Figure 5-5 depicts the extent of 65, 75, and 85 DNL noise contours for the year 2022 in Alternative 2 – Establishment of Turf Runway. As shown, a majority of the 65 and nearly all of 75, and 85 DNL noise contours lie within the airport property boundaries. Approximately 0.31 square miles of 65-74 DNL and 0.03 square miles of the 75-84 DNL extends beyond the airport property which is a decrease in area of 1.2 percent and 0.03 percent from Alternative 1. The decrease is a result of some of the existing traffic moving to the Turf Runway which is more centrally located on airport property and moves traffic further from the property line. Table 5-9 provides the size, in square miles, of each contour interval.

TABLE 5-9 – ALT. 2 - AREA (SQUARE MILES) WITHIN THE 65, 75, AND 85 DNL CONTOURS

| Year | 65-74 DNL | 75-84 DNL | 85+ DNL | TOTAL |
|-------------------------|-----------|-----------|---------|--------|
| 2022 – With Turf Runway | 0.7032 | 0.1483 | 0.0119 | 0.8635 |

Source: Jviation, Inc.

The FAA has identified, in Order 5050.4B that a significant noise impact occurs if the aircraft noise analysis indicates that the proposed action results in an increase within the 65 DNL contour of 1.5 dB or greater at any noise sensitive site. The establishment of the Turf Runway results in a decrease in noise levels above 65 DNL that lie outside the airport property boundary. This results in an improved noise situation at FLY. Fewer off airport properties and no new residences will be exposed to noise levels above 65 DNL as a result of Alternative 2. As such, it is assumed that no significant noise impacts are expected as a result of Alternative 2.



MEADOW LAKE AIRPORT
 ALTERNATIVE 2
 NEW TURF RUNWAY
 2022

DATE: JUNE 1, 2012

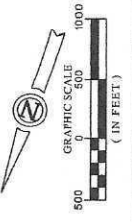
FIGURE 5-5



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- 85+ DNL
- 75-84 DNL
- 65-74 DNL

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5.15 SECONDARY (INDUCED) IMPACTS

Secondary (induced) impacts are a result of actions and occur later in time and are farther removed in distance, but are still reasonably foreseeable, according to 40 CFR, Section 1508.8. This differs from cumulative impacts which result from the accumulation of separate past, present, and future reasonably foreseeable actions. Cumulative impacts are discussed in **Section 5.20** of this document. Secondary (induced) or indirect impacts may result from major development projects that induce changes such as shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity to the extent influenced by the airport development.

5.15.1 Alternative 1 – No Action

Alternative 1 does not change the existing conditions at the airport and would therefore not have the potential to induce any changes such as shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity to the extent influenced by the airport development.

5.15.2 Alternative 2 – Establishment of Turf Runway

Alternative 2 results from the existing demand for an improved glider runway. Per **Section 2.3.4.2**, the establishment of the turf runway may potentially increase operations but not significantly more than the growth anticipated without the Turf Runway. There is a potential for the Turf Runway to induce private development on the west side of the airport associated with the glider operations. Currently hangar facilities are all located on the east side of the airport which is inconvenient and unsafe for glider operators as they have to cross an active runway for access. Private development on the west is anticipated to accommodate the glider community and improve their operational efficiency and safety. The development would remain on airport property and would be accessed via Falcon Highway a public road that experiences normal levels of traffic. It is not anticipated that the development would create a significant increase in traffic and would likely be heaviest on the weekends when the traffic on Falcon Highway is reduced without the business commuters. As such, is not anticipated that Alternative 2 would induce any significant changes such as shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity to the extent influenced by the airport development.

5.16 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S HEALTH AND SAFETY RISKS

Airport development actions have the potential to create social impacts, health and safety risks to children, and socioeconomic impacts, including moving homes or businesses; dividing or disrupting established communities; changing surface transportation patterns; disrupting orderly, planned development; and creating a notable change in employment. The local demographic information and social profile gives a relevant idea of the economy of the region surrounding a project.

5.20.2 Alternative 2 – Establishment of Turf Runway

When compared to the impacts of past, present, and reasonably foreseeable future projects, Alternative 2 would have limited potential for significant cumulative impacts. All of the projects identified would be independent to that of Alternative 2; therefore, no cumulative impacts would be anticipated.

5.21 SUMMARY OF ENVIRONMENTAL IMPACTS

After a thorough analysis of both alternatives' potential for environmental impacts, it is found that there will be no significant adverse impacts as a result of Alternative 1 – No Action and Alternative 2 – Establishment of Turf Runway. **Table 5-12** summarizes the impacts associated with both alternatives.

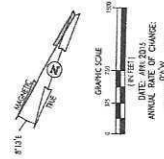
TABLE 5-12 - IMPACTS SUMMARY

| | Impact Categories | Alt. 1 – No Action | Alt. 2 – Turf Runway |
|----|---|-----------------------|-------------------------|
| 1 | Air Quality | None | None |
| 2 | Climate | None | None |
| 3 | Coastal Resources | None | None |
| 4 | Compatible Land Use | None | None |
| 5 | Construction Impacts | None | None |
| 6 | Department of Transportation Act.: Section 4(f) | None | None |
| 7 | Farmlands | None | None |
| 8 | Fish, Wildlife and Plants | None | None |
| 9 | Floodplains | None | None |
| 10 | Hazardous Materials, Pollution Prevention, and Solid Waste | None | None |
| 11 | Historical, Architectural, Archaeological, and Cultural Resources | None | None |
| 12 | Light Emissions and Visual Effects | None | None |
| 13 | Natural Resources and Energy Supply | None | None |
| 14 | Noise | None | None |
| 15 | Secondary (induced) Impacts | None | None |
| 16 | Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks | None | None |
| 17 | Water Quality | None | None |
| 18 | Wetlands | None | None |
| 19 | Wild and Scenic Rivers | None | None |
| 20 | Cumulative Impacts | None | None |

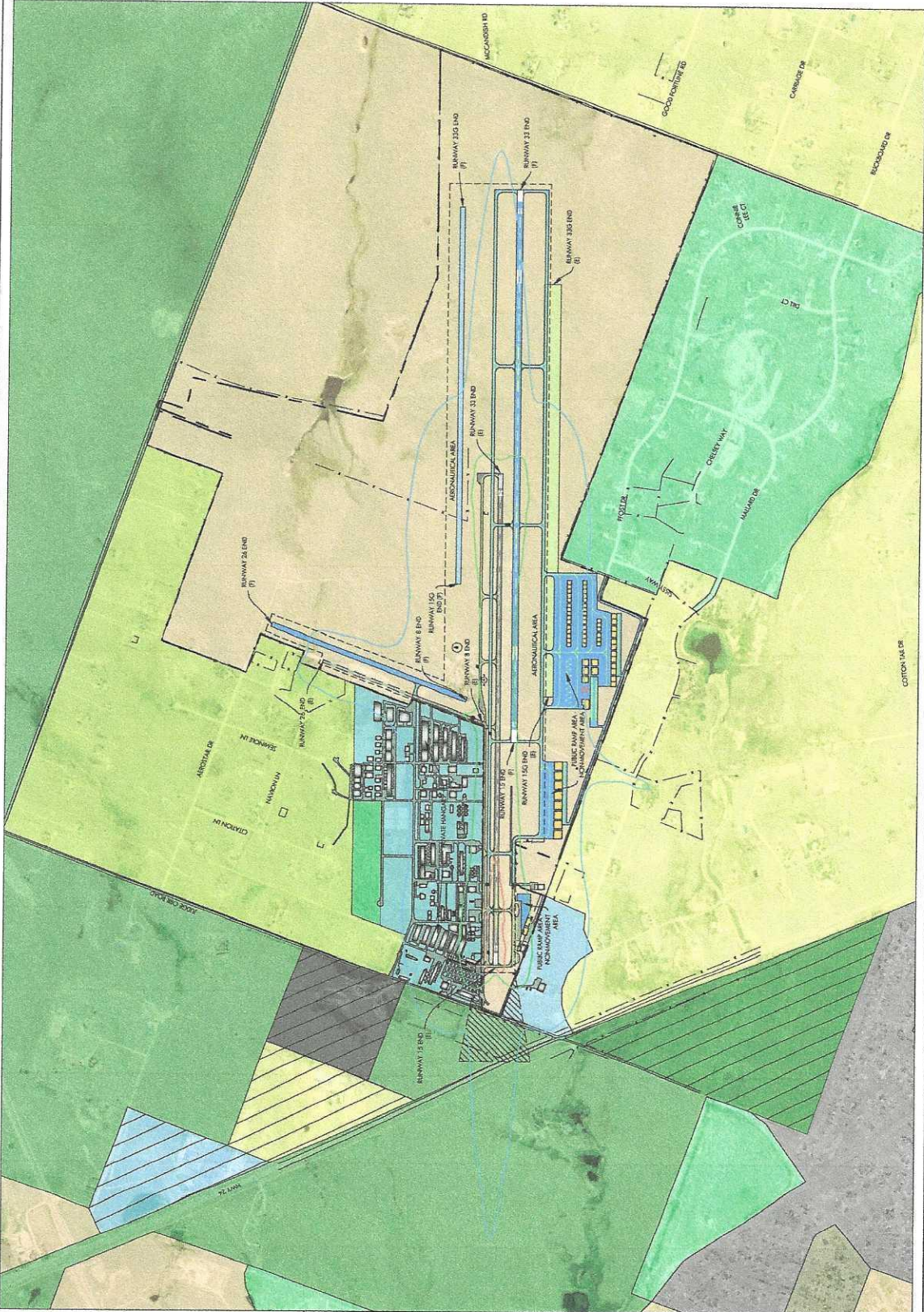
Source: Jviation, Inc.

DRAWING LEGEND

| | |
|--|--|
| EXISTING 60' BIL CONTOUR | |
| EXISTING 75' BIL CONTOUR | |
| EXISTING 85' BIL CONTOUR | |
| MOOREHEAD AREA | |
| R-1 FPD PLANNED UNIT DEVELOPMENT | |
| A-1S: AGRICULTURAL (1.5 ACRES) | |
| RR-2.5: RESIDENTIAL RURAL (2.5 ACRES) | |
| RR-5: RESIDENTIAL RURAL (5 ACRES) | |
| PD: PLANNED DEVELOPMENT (SINGLE-FAMILY) | |
| RR-10: RESIDENTIAL RURAL (10 ACRES) | |
| RR-15: RESIDENTIAL RURAL (15 ACRES) | |
| RPP: RECREATIONAL VEHICLE PARK | |
| CS: COMMERCIAL SERVICE | |
| A-5: AGRICULTURAL (5 ACRES) | |
| RS-400: RESIDENTIAL SUBURBAN (6,000 SQ. FT.) | |
| RS-500: RESIDENTIAL SUBURBAN (8,000 SQ. FT.) | |
| I: INDUSTRIAL | |



- SOURCE:**
1. MOSE CONTOURS COLLECTED FROM DUFF RUNWAY
 2. SEE PLAN FOR THE BOUNDARY, MAY 2013
 3. COUNTY OF WISCONSIN, LAND USE AND ZONING ORDINANCE, CHAPTER NR 19.01, 2010
 4. COUNTY EMPLOYMENT SERVICES DEPARTMENT, MAY 2014, 2010
 5. ALL HORIZONTAL COORDINATES - NAD83/2011
 6. ALL VERTICAL COORDINATES - NAD83
 7. THERE ARE NO PUBLIC UTILITIES (E.G., SCHOOLS, CHURCHES, PARKS, COURSES ETC.) WITHIN AREA BEING SHOWN
 8. PLANNED UNIT DEVELOPMENTS ARE A DISTRICT ZONING CLASSIFICATION ESTABLISHED TO PROVIDE FLEXIBILITY FOR PLANNED UNIT DEVELOPMENTS TO MEET THE REQUIREMENTS IN EXCHANGE FOR PUBLIC BENEFIT.



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| JVIATION® | | MEADOW LAKE AIRPORT | | ISSUE RECORD | | AIRPORT LAYOUT PLAN | | LAND USE DRAWING | | SHEET 19 OF 19 | |
| DES. B.L.R. | DR. B.L.R. | NO. | BY | DATE | DESCRIPTION | COAG GRANT NO. | JVIATION/REG. NO. | DATE | DATE | DATE | DATE |
| CH. S.E.S. | APP. D.F.N. | | | | | 2014-FLY-01 | 2014.FLY.01 | MAY 2019 | | | |