Appendix J

Noise Impact Analysis

Dutchess County

Hudson Valley Regional Airport

Wappingers Falls, New York

Appendix J – Noise Impact Analysis for Runway Safety Improvements

Prepared by:
C&S Companies

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Section 1—Introduction

1.1 Introduction

Dutchess County (County) is preparing an Environmental Assessment to support bringing Runway 6-24 runway safety areas into compliance with federal design standards and regulations at Hudson Valley Regional Airport (POU). The purpose for this project is to complete improvements needed to bring Runway 6-24 into compliance with federal design standards and regulations.

This document provides the methodology and data used to prepare the noise analysis for the existing, future no-action, and future with action conditions at POU. Preliminary aircraft operations forecasts prepared for the ongoing master plan effort at the Airport (see **Attachment A**) were used for input into the FAA's Aviation Environmental Design Tool (AEDT Version 3c) software system for the development of airport noise contours. The forecasts approved as part of the previous Airport Master Plan completed in 2004 are much higher than existing conditions, and the Terminal Area Forecasts are lower than existing conditions.

1.2 Project Description

The Proposed Project takes place entirely within airport property and includes the following:

- Displace Runway 6 threshold 193 feet
- Reconfigure and re-cable medium intensity runway lights with runway end identifier lights (MALSR) and associated grading (includes construction of at least three new light towers, removal of at least three light towers, height modification of six light towers). It is possible that all existing light towers and foundations must be replaced within the MALSR limits of disturbance depending on the structural effects of light tower height adjustments.
- Relocation of approximately 200 feet of existing gravel access road adjacent to light tower located 1,000 feet from the displaced threshold.
- Relocate instrument landing system (ILS) glideslope antenna, equipment shelter, and access road and associated grading
- Relocate precision approach path indicator (PAPI) lights on Runway 6 end
- Fill, re-grade, and remove uneven paved areas on the Runway 24 end
- Re-marking and re-lighting on Runway 6 end
- Redesign and publication of new approach procedures to the Runway 6 end (1-mile visibility minimum)

- Implement declared distances

Of specific concern to this noise assessment is the displacement of the threshold on the Runway 6 end which will not result in a change to annual airport operations or fleet mix. Preliminary forecasts developed as part of the ongoing master plan effort will be used for existing and future scenarios. The preliminary forecast indicates there is no change in the category of aircraft that will utilize either runway between the existing (2019) and future (2040) conditions.

The arrival and departure procedures and airport operating environment would otherwise remain the same.

1.3 Regulatory Setting

FAA Order 1050.1F

Policies and procedures for evaluating the environmental impacts associated with airport development are described in FAA Order 1050.1F. The noise analysis related policies and procedures are presented in Appendix B of the Order. These requirements are also included in the *FAA 1050.1F Desk Reference*[1], which provides comprehensive guidance regarding the analysis of impacts in specific environmental impact categories.

For aviation noise analyses, the FAA has determined that the 24-hour cumulative exposure of individuals to noise resulting from aviation activities must be established in terms of yearly day/night average sound level (DNL) as FAA's primary metric.

The determination of significance must be obtained through the use of modeled noise contours along with local land use information and general guidance contained in Appendix A of 14 Code of Federal Regulations (CFR) Part 150. As a means of implementing the Aviation Safety and Noise Abatement Act, the FAA adopted Regulations on Airport Noise Compatibility Planning Programs. These regulations are spelled out under 14 CFR Part 150 and include published noise and land use compatibility charts (see **Table 1.1**) to be used for land use planning with respect to aircraft noise.

[1] FAA 1050.1F Desk Reference, Version 2, February 2020.

Table 1.1 – Federal Aviation Regulation Part 150 Land Use Guidelines

Land Use	Yearly Day-Night Average Sound Level (dB DNL)					
	<65	65-70	70-75	75-80	80-85	>85
Residential						
Residential, other than mobile homes and transient lodgings	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
Public Use						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y[5]	Y[5]	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

Table Key:

Y (Yes)=Land Use and related structures compatible without restrictions.

N (No)=Land Use and related structures are not compatible and should be prohibited.

NLR=Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35=Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

Notes:

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal level is low.

(5) Land use compatible provided special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings not permitted.

Disclaimer

The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Source: FAA Aviation Circular 150/5020-1 (August 5, 1983)

Compatible or non-compatible land use is determined by comparing the aircraft DNL values at a site to the values in the FAR Part 150 land use compatibility guidelines (**Table 1-1**). Per FAA standards, a significant noise impact would occur if the analysis shows that the Proposed Project will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at above DNL 65 dB noise exposure when compared to the baseline condition. For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB.

Federal Interagency Committee on Noise (FICON) Report of 1992

The use of the DNL metric and the 65 dB DNL criteria have been reviewed by various interest groups in order to assess its usefulness in assessing aircraft noise impacts. At the direction of the U.S. Environmental Protection Agency (USEPA) and the FAA, the Federal Interagency Committee on Noise (FICON) was formed to review specific elements of the assessment of airport noise impacts and to make recommendations regarding potential improvements. FICON includes representatives from the Departments of Transportation, Defense, Justice, Veterans Affairs, Housing and Urban Development, the Environmental Protection Agency, and the Council on Environmental Quality.

FICON was formed to review Federal policies used to assess airport noise impacts and on the manner in which noise impacts are determined. This included whether aircraft noise impacts are fundamentally different from other transportation noise impacts; the manner in which noise impacts are described; and the extent to which impacts outside of 65 DNL should be reviewed in federal environmental impact statements.

The committee determined that there are no new descriptors or metrics of sufficient scientific standing to substitute for DNL. The noise exposure metric and the dose-response relationships used to determine noise impact were determined to be proper for assessing noise from civil and military aviation in the general vicinity of airports. The report supported agency discretion in the use of supplemental noise analysis. The report recommended improvement in public understanding of the metric, supplemental methodologies and aircraft noise impacts.

The report endorsed and expanded traditional FAA environmental screening criteria for potential airport noise impacts. FICON recommended that if screening analysis determines noise-sensitive areas at or above 65 dB DNL show an increase of DNL 1.5 dB or more, then further analysis should be conducted of noise sensitive areas between DNL 60-65 dB having an increase of DNL 3 dB or more.

Section 2—Methodology

2.1 Years of Analysis

As directed by FAA Order 1050.1F, airport noise contours were developed for existing, future no-action, and future with proposed action conditions. The Airport Master Plan existing conditions year (2019) and the end of the 20-year planning period (2040) were used as the existing and future condition years for this analysis.

2.2 Activity Levels and Fleet Mix

The data on which the existing and future conditions were based was derived from a combination of the FAA's Traffic Flow Management System Counts (TFMSC) and preliminary forecasted operations prepared for the ongoing airport master plan effort. The TFMSC provided the aircraft types that utilized the Airport in calendar year 2019; representative aircraft for various classes of aircraft were selected based on the number of operations in that year. The following table (**Table 2.1**) lists the aircraft type, number of daily operations (by arrival and departure) during daytime (11:00 am to 10:59 pm) and nighttime (11:00 pm to 10:59 am) hours, and the total annual number of operations.

Table 2.1: Operations by Aircraft - Existing Conditions

Aircraft	Day Arr.	Day Dep.	Night Arr.	Night Dep.	Daily Total	Annual Ops
BE35 - Beech Bonanza 35	1.91	1.91	0.06	0.06	3.94	1,437.85
BE36 - Beech Bonanza 36	2.58	2.58	0.08	0.08	5.31	1,939.42
BE58 - Beech 58	1.07	1.07	0.03	0.03	2.20	802.52
BE99 - Beech Airliner 99	3.91	3.91	0.12	0.12	8.06	2,942.57
C172 - Cessna Skyhawk 172/Cutlass	14.22	14.22	0.44	0.44	29.32	10,700.25
C182 - Cessna Skylane 182	5.42	5.42	0.17	0.17	11.18	4,079.47
SR22 - Cirrus SR 22	10.26	10.26	0.32	0.32	21.16	7,724.24
P28A - Piper Cherokee	17.46	17.46	0.54	0.54	36.00	13,141.24
BE20 - Beech 200 Super King	1.13	1.13	0.03	0.03	2.33	849.22
BE9L - Beech King Air 90	3.51	3.51	0.11	0.11	7.24	2,642.01
BE40 - Raytheon/Beech Beechjet 400/T-1	0.15	0.15	0.00	0.00	0.30	110.83
C25C - Cessna Citation CJ4	0.14	0.14	0.00	0.00	0.28	103.91

C560 - Cessna Citation V/Ultra/Encore	0.12	0.12	0.00	0.00	0.25	92.36
C56X - Cessna Excel/XLS	0.17	0.17	0.01	0.01	0.36	131.61
CL30 - Bombardier (Canadair) Challenger 300	0.10	0.10	0.00	0.00	0.22	78.51
CL35 - Bombardier Challenger 300	0.13	0.13	0.00	0.00	0.27	96.98
E55P - Embraer Phenom 300	0.34	0.34	0.01	0.01	0.71	258.61
S76 - Sikorsky S-76	0.58	0.58	0.02	0.02	1.20	436.40
TOTAL	63.21	63.21	1.95	1.95	130.32	47,568.00

Source: C&S Engineers, 2021

The number of annual aircraft operations included in the noise analysis for 2019 existing conditions included 47,568 arrivals and departures.

Activity levels for the 2040 future conditions were taken from the preliminary forecasts developed as part of the ongoing airport master plan effort. The forecast estimated an increase of 7,850 operations; therefore the number of annual aircraft operations included in the noise analysis for the future conditions included 55,418 operations. This increase was applied to the operations as shown in **Table 2.2** below.

Table 2.2: Operations by Aircraft - Future Conditions

Aircraft	Day Arr.	Day Dep.	Night Arr.	Night Dep.	Daily Total	Annual Ops
BE35 - Beech Bonanza 35	2.12	2.12	0.07	0.07	4.36	1,592.44
BE36 - Beech Bonanza 36	2.85	2.85	0.09	0.09	5.88	2,147.94
BE58 - Beech 58	1.18	1.18	0.04	0.04	2.44	888.80
BE99 - Beech Airliner 99	4.33	4.33	0.13	0.13	8.93	3,258.95
C172 - Cessna Skyhawk 172/Cutlass	15.75	15.75	0.49	0.49	32.47	11,850.71
C182 - Cessna Skylane 182	6.00	6.00	0.19	0.19	12.38	4,518.08
SR22 - Cirrus SR 22	11.37	11.37	0.35	0.35	23.44	8,554.73
P28A - Piper Cherokee	19.34	19.34	0.60	0.60	39.87	14,554.15
BE20 - Beech 200 Super King	1.53	1.53	0.05	0.05	3.16	1,152.14
BE9L - Beech King Air 90	4.76	4.76	0.15	0.15	9.82	3,584.44

BE40 - Raytheon/Beech Beechjet 400/T-1	0.48	0.48	0.01	0.01	0.99	360.88
C25C - Cessna Citation CJ4	0.45	0.45	0.01	0.01	0.93	338.33
C560 - Cessna Citation V/Ultra/Encore	0.40	0.40	0.01	0.01	0.82	300.74
C56X - Cessna Excel/XLS	0.57	0.57	0.02	0.02	1.17	428.55
CL30 - Bombardier (Canadair) Challenger 300	0.34	0.34	0.01	0.01	0.70	255.63
CL35 - Bombardier Challenger 300	0.42	0.42	0.01	0.01	0.87	315.77
E55P - Embraer Phenom 300	1.12	1.12	0.03	0.03	2.31	842.06
S76 - Sikorsky S-76	0.63	0.63	0.02	0.02	1.30	473.66
TOTAL	**73.64**	**73.64**	**2.28**	**2.28**	**151.83**	**55,418.00**

Source: C&S Engineers, 2021

2.3 Model Assumptions

The sections below provide a summary of the assumptions made for this study.

2.3.1 Runway Use Utilization and Flight Tracks

The runway orientation at POU includes Runways 15-33 and 6-24. Based on data provided by the air traffic control tower (ATCT) and discussions with the Airport manager, the runway end utilization for single engine and multi engine aircraft is as follows:

- Runway 6 is the preferred runway 27% of the time
- Runway 24 is the preferred runway 63% of the time
- Runway 15 is the preferred runway 5% of the time
- Runway 33 is the preferred runway 5% of the time

The runway end utilization for jet aircraft is as follows:

- Runway 6 is the preferred runway 32% of the time
- Runway 24 is the preferred runway 68% of the time

All arrivals and departures were modeled as straight-out procedures to each runway end.

2.3.2 Daytime and Nighttime Operations

It was assumed that 97% of operations occurred during the day-time hours (7:00 am to 10:00 pm) and 3% of operations occurred during night-time hours (10:00 pm to 7:00 am).

This percentage was applied to all aircraft for both existing and future years analyzed in the noise analysis.

2.3.3 Helicopter Operations

Helicopter operations were input into the noise analysis on default flight tracks within AEDT. The flight track started at the intersection of Runways 6-24 and 15-33 and fly north and south of the runway intersection.

2.3.4 Stage Length

Stage length is the distance an aircraft travels for each departure from a given airport to its final destination. In noise modeling, stage length is a surrogate for aircraft departure weight. Aircraft departure weight is important, as noise levels are higher for heavier aircraft of a given type. This is due to the decreased climb performance and higher thrust settings required by heavier aircraft. These factors do not apply to arriving aircraft.

The data used for this analysis includes standard AEDT aircraft weight data based upon the average aircraft departure weights for given distances from the Airport to flight destinations. The AEDT includes different departure profiles based upon the departure procedures being used. The primary differences between departure profiles are aircraft engine thrust settings, flap configurations, airspeed, and climb gradient. Aircraft types and typical operations were examined to determine which of the departure profiles available in the AEDT best represent actual departure operations at POU. Based upon this analysis the Standard AEDT departure profile and Stage Length 1 (flight length of 0-500 nautical miles) were used for all aircraft for the development of the noise contours under the existing and future conditions.

Section 3—Modeling Results

Noise contours were developed with the FAA mandated Day-Night Average Sound Level (DNL) metric. The analysis included noise contours for DNL 65, 70, and 75 dB. Those contours were then placed over existing land uses surrounding POU.

3.1 Existing Noise Contours

The number of annual aircraft operations included in the noise analysis for the Existing condition included 47,568 arrivals and departures. The resulting noise contours are shown on **Figure 3.1**. The 65 dB DNL contour is located primarily on airport property but extends off airport over recreation and entertainment, one residential parcel, commercial uses, one community service use (cemetery), and vacant land uses. The 70 dB DNL contour also extends off airport over commercial, community services, recreation and entertainment, and vacant land uses. Lastly, the 75 dB DNL contour is located entirely on airport with the exception of a small portion that extends off the Runway 24 end into vacant land.

3.2 Future No-Action Condition Noise Contours

Activity levels for the 2040 Future No-Action condition were taken from the preliminary forecasts developed as part of the ongoing airport master plan effort. The forecast estimated an increase of 7,850 operations; therefore the number of annual aircraft operations included in the noise analysis for the future conditions included 55,418 operations, representing a 16.5% increase when compared to the Existing condition. The preliminary forecast indicates there is no change in the category of aircraft that will utilize either runway between the existing and future conditions. This condition does not include any modifications to airport geometry to approach procedures.

Figure 3.22 represents the Future No-Action condition. In the Future No-Action condition, contours remain over the same land use types as the Existing condition but do expand in size due to the growth included in the preliminary forecasts from the ongoing master plan effort. One residential land use and recreation and entertainment land uses experience an increased exposure to the 65 dB DNL contour. However, the 65 dB DNL contour does not expand over any additional parcels with these land use types. The 70 dB DNL contour also extends off airport over commercial, community services (cemetery), recreation and entertainment (Stanley Still Sr. Town Sports Park), and vacant land uses. Lastly, the 75 dB DNL contour is located entirely on airport with the exception of a small portion that extends off the Runway 24 end into vacant land.

3.3 Future with Action Condition Noise Contours

Similar to the Future No-Action condition, activity levels for the Future with Action condition were taken from the preliminary forecasts developed as part of the ongoing airport master plan effort. The forecast estimated an increase of 7,850 operations; therefore the number of annual aircraft operations included in the noise analysis for the Future with Action condition included 55,418 operations, representing a 16.5% increase when compared to the Existing condition.

The proposed project involves the displacement of the Runway 6 end threshold by 193 feet. Under the noise analysis, modeled flight tracks were adjusted to correspond to the change in the runway threshold. Although the displaced threshold will reduce the runway length available to pilots, they are anticipated to continue to adhere to published arrival and departure procedures for Runway 6-24. Specifically, the general flight path on approach and departures will remain the same since the runway orientation is not changing.

The resulting noise contours for the Proposed Project are shown on **Figure 3.3**. The landing and departure location will shift on the Runway 6 end due to the displaced threshold which results in a corresponding shift in the noise contours to the east. The landing and departure location on the Runway 24 end will remain the same which results in minimal changes to the noise contours to the east. In the Future with Action condition, contours remain over the same property types as the Existing condition but do expand due to the growth included in the preliminary forecasts from the ongoing master plan effort. Residential and recreation and entertainment land uses experience an increased exposure to the 65 dB DNL contour. However, the 65 dB DNL contour does not expand over any additional parcels with these land use types. The 70 dB DNL contour also extends off airport over commercial, community services (cemetery), recreation and entertainment (Stanley Still Sr. Town Sports Park), and vacant land uses. Lastly, the 75 dB DNL contour is located entirely on airport with the exception of a small portion that extends off the Runway 24 end into vacant land.

Comparisons between the Future No-Action and Future With-Action conditions (see **Figures 3-2** and **3-3**) demonstrate that there are decreases to the 65 and 70 dB DNL noise contour at the approach end of Runway 6. This includes a decrease in the 65 dB DNL over an area with a land use designation of recreation and entertainment (Stanley Still Sr. Town Sports Park). The decreases are a result of the relocation of the runway threshold and are primarily associated with the reduced runway length allowed for departures off of Runway 24. When compared to the Future No-Action condition, the proposed project will not cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure. Furthermore, the decrease in the 65 dB DNL contour over lands designated as recreation and entertainment could be considered a benefit resulting from the proposed project. Therefore, there are no impacts to noise sensitive areas and no further noise analysis is required.

3.4 Conclusion

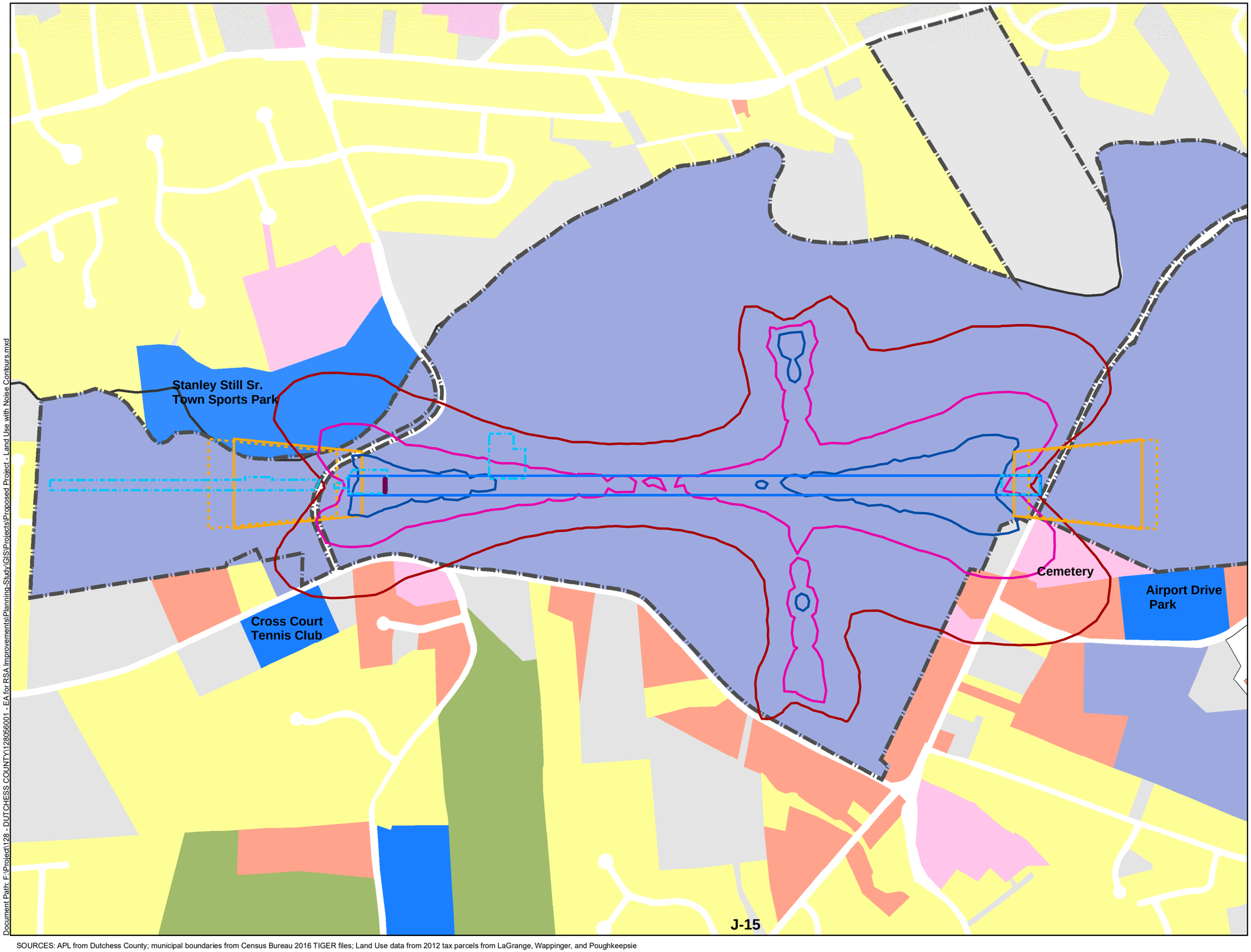
Changes in land area exposed to noise levels 65 DNL and greater as a result of each scenario are summarized in **Table 3-1**.

Table 3-1 Change in Noise Exposure as a Result of Preferred Alternative

Scenario	Noise Exposure (Acres)		
	65 dB DNL	70 dB DNL	75+ dB DNL
Baseline	241.55	90.17	24.62
Future No-Action	266.05	104.58	28.96
Future With-Action	263.84	104.46	29.22
Change (FWA-Baseline)	**22.29**	**14.28**	**4.59**
Change (FWA-FNA)	**-2.21**	**-0.12**	**0.26**

Source: C&S Engineers, Inc. 2021

The 75 dB DNL contour takes place on airport property with a small portion extending off airport over compatible land uses as defined by FAR Part 150 land use guidelines. The 70 dB DNL contours take place over compatible land uses except for one residential parcel located on the Runway 24 end and one recreational land use on the Runway 6 end (Stanley Still Sr. Town Sports Park). The 65 dB DNL contours take place over compatible land uses except for one residential parcel located on the Runway 24 end and two recreational land uses on the Runway 6 end (Stanley Still Sr. Town Sports Park, Cross Court Tennis Club) The proposed project would not cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no-action alternative. Therefore, there would be no impacts to noise sensitive areas and no further noise analysis is required.



Legend

- Airport Property Line
- Municipal Boundary
- Approach RPZ
- Departure RPZ
- RSA
- Limits of Disturbance (LOD)

Land Use

- Residential
- Vacant Land
- Commercial
- Recreation & Entertainment
- Community Services
- Public Services
- Agricultural
- Industrial
- Wild, Forested, Conservation Lands & Public Parks

Existing Noise Contours

- 65 dB DNL
- 70 dB DNL
- 75 dB DNL

1 inch = 700 feet
When printed at 11" x 17"

0 350 700
Feet

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Land Use with Existing Noise Contours

Figure 3.**1**

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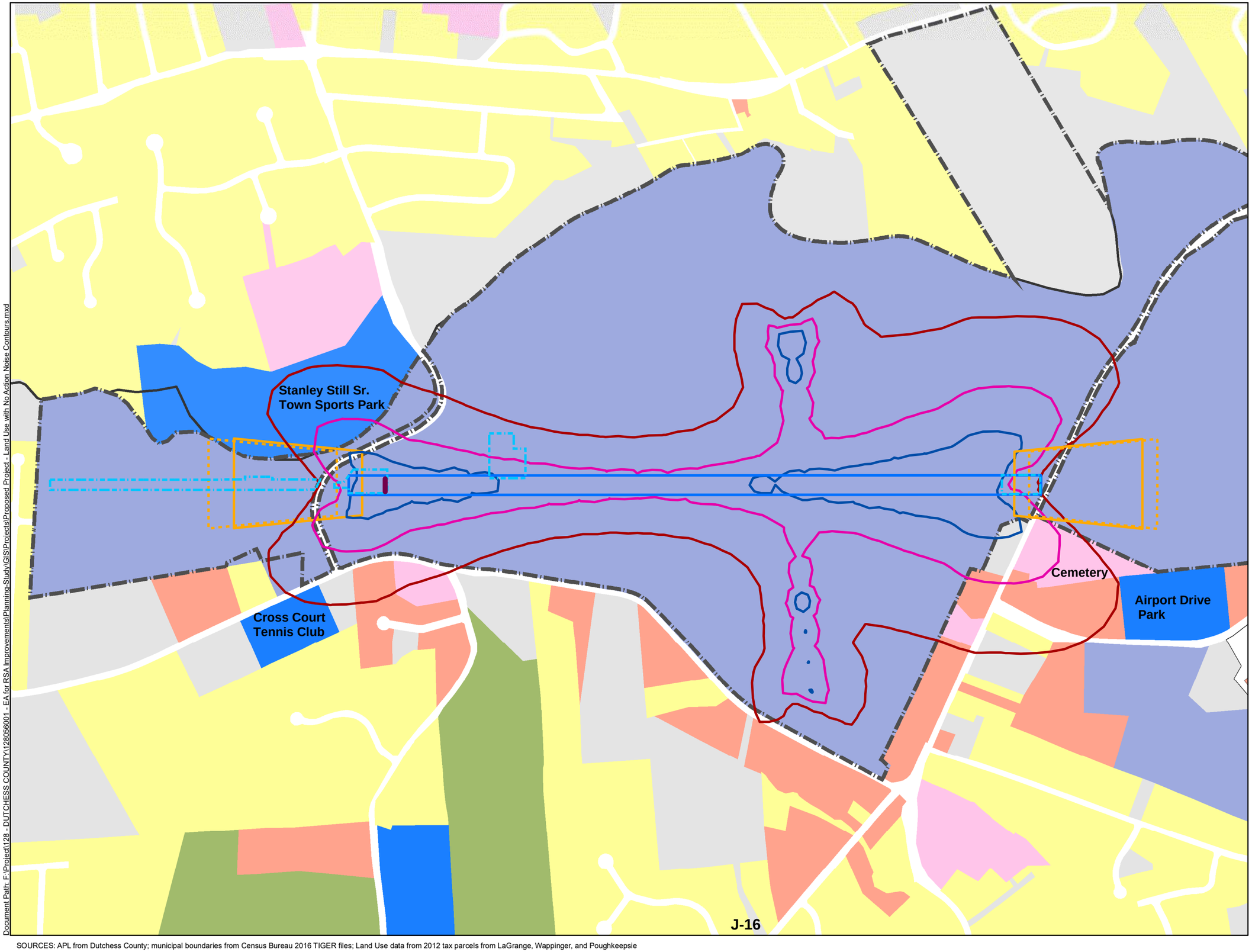
SOURCES: APL from Dutchess County; municipal boundaries from Census Bureau 2016 TIGER files; Land Use data from 2012 tax parcels from LaGrange, Wappinger, and Poughkeepsie



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Legend

- Airport Property Line
- Municipal Boundary
- Approach RPZ
- Departure RPZ
- RSA
- Limits of Disturbance (LOD)

Land Use

- Residential
- Vacant Land
- Commercial
- Recreation & Entertainment
- Community Services
- Public Services
- Agricultural
- Industrial
- Wild, Forested, Conservation Lands & Public Parks

Future with No Action Noise Contours

- 65 dB DNL
- 70 dB DNL
- 75 dB DNL

1 inch = 700 feet
When printed at 11" x 17"

0 350 700
Feet

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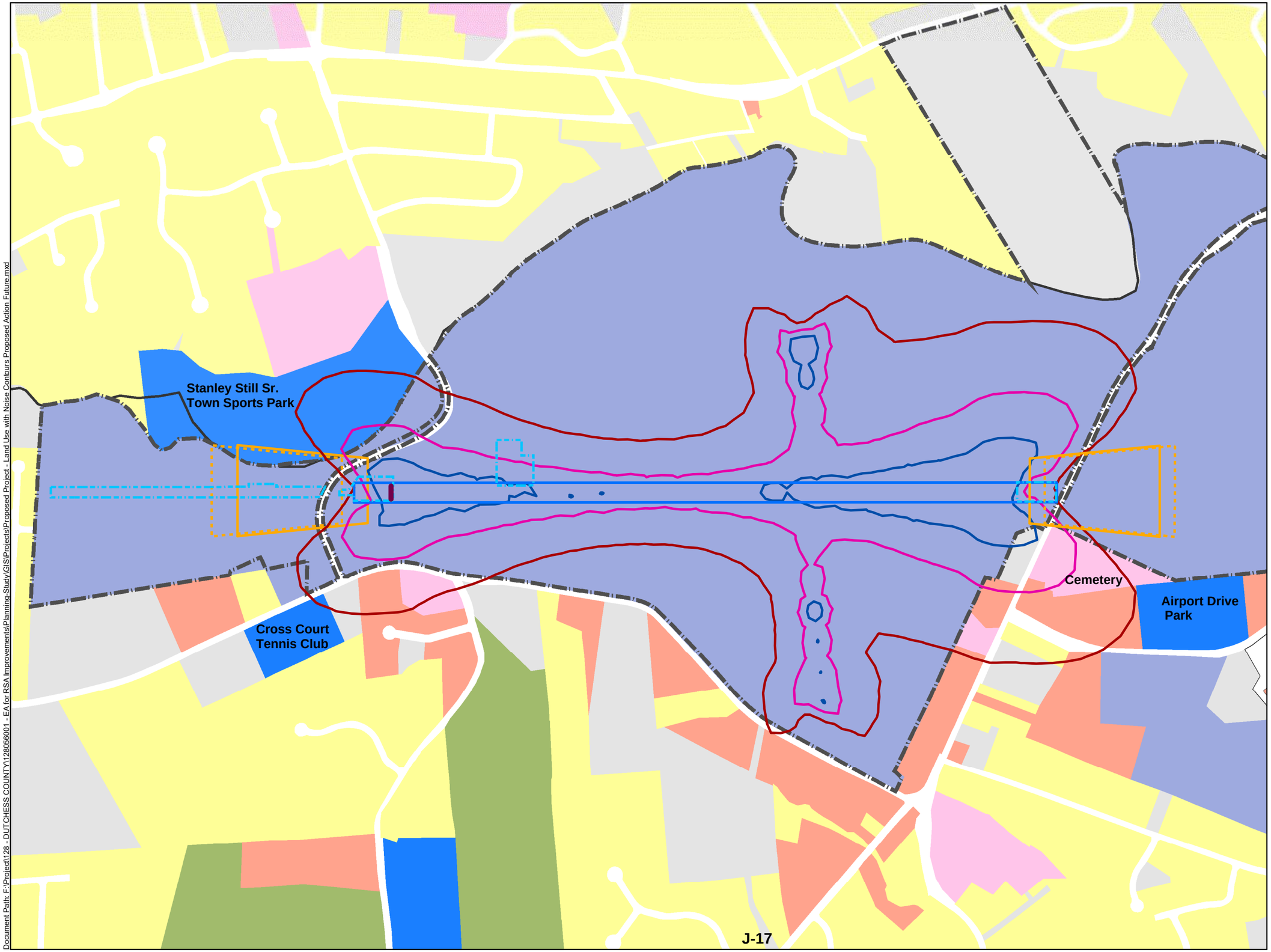
Land Use with Future with No Action Noise Contours

Figure 3.**2**

SOURCES: APL from Dutchess County; municipal boundaries from Census Bureau 2016 TIGER files; Land Use data from 2012 tax parcels from LaGrange, Wappinger, and Poughkeepsie



Legend

- Airport Property Line
- Municipal Boundary
- Approach RPZ
- Departure RPZ
- RSA
- Limits of Disturbance (LOD)

Land Use

- Residential
- Vacant Land
- Commercial
- Recreation & Entertainment
- Community Services
- Public Services
- Agricultural
- Industrial
- Wild, Forested, Conservation Lands & Public Parks

Future with Action Noise Contours

- 65 dB DNL
- 70 dB DNL
- 75 dB DNL

1 inch = 700 feet
When printed at 11" x 17"

0 350 700
Feet

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Land Use with Future with Action Noise Contours

Figure 3.**3**

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SOURCES: APL from Dutchess County; municipal boundaries from Census Bureau 2016 TIGER files; Land Use data from 2012 tax parcels from LaGrange, Wappinger, and Poughkeepsie