



Crystal Airport Joint Airport Zoning Board

November 16, 2021 – Meeting #2

Agenda

- **Welcome and Agenda Overview**
- Introduction of Chair
- Meeting Format & Logistics
- Approval of October 12 JAZB Meeting Minutes
- JAZB Purpose & Role
- State Airport Zoning Statute – MnDOT Office of Aeronautics
- Basic Airfield Surfaces
- 1983 Airport Zoning Ordinance
- MnDOT Commissioner Standard Ordinance
- Affected Land Uses & Parcels
- Custom Ordinance Case Studies
- Discussion of Airport Zoning Liability
- Determine Zoning Procedure
- Meeting Plan
- Public Comments
- Adjourn



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Meeting Format & Logistics

- Meeting day/time and location
- In-person vs. hybrid
 - Hybrid would require those attending remotely to attend in a public place with adequate notice
- Communications
 - Agenda posted one week before meeting
 - Relevant materials will be posted to JAZB page on MAC website
 - MAC is launching new website in November



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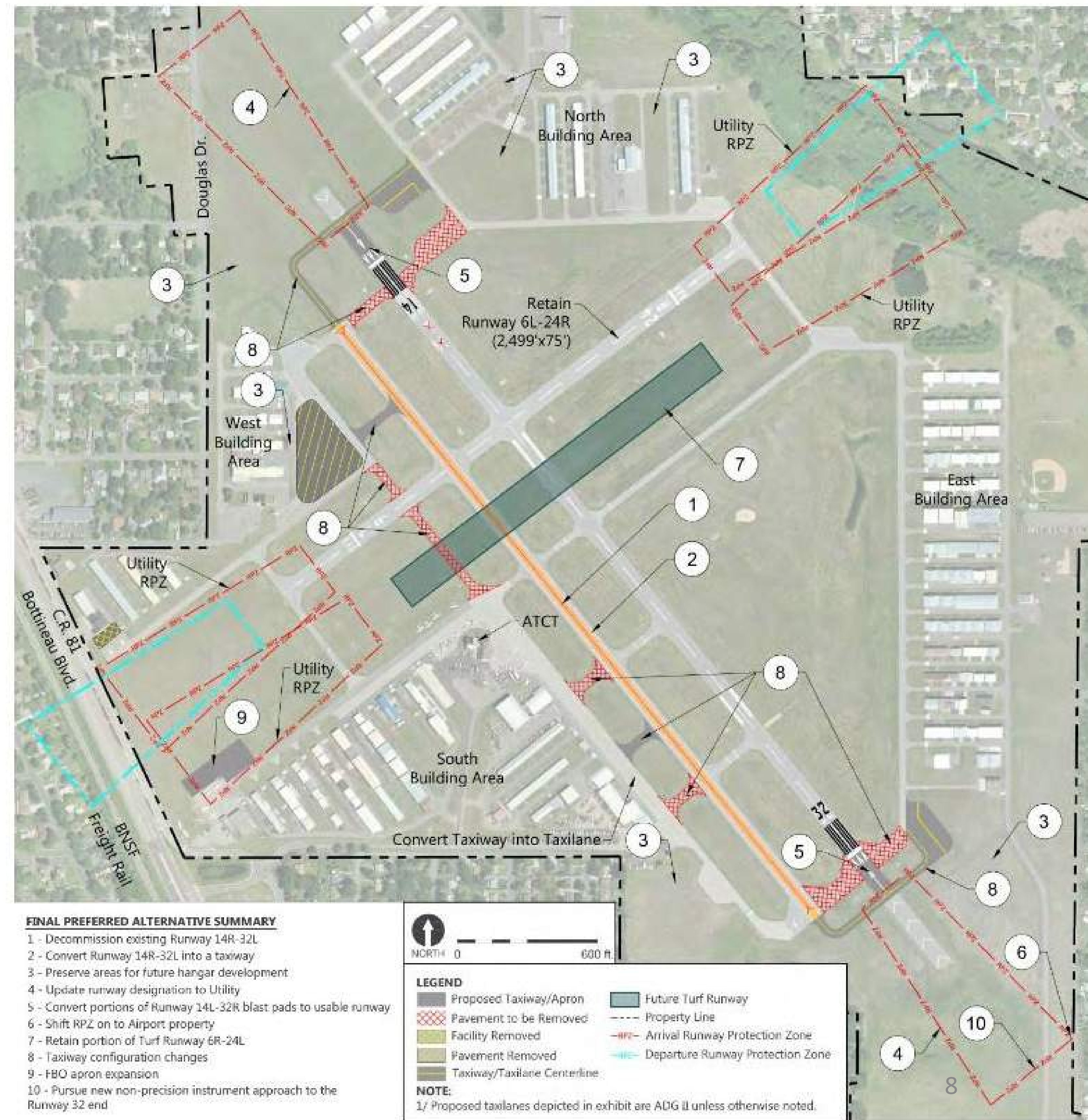
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JAZB Purpose & Role

- The Minnesota State Legislature revised its zoning statute in 2019.
- The MAC completed improvements at the airport in 2020, which:
 - Lengthened the main runway
 - Converted the parallel runway to a parallel taxiway
 - Shortened the turf runway

Figure ES-4: 2035 LTCP Final Preferred Alternative



JAZB Purpose & Role

- **Purpose:** Through a collaborative process, the JAZB seeks to develop an airport zoning ordinance that achieves a reasonable level of safety while considering compatible community development and the social and economic costs of restricting land uses.
- **Role:** The JAZB considers the requirements of Minnesota Statutes in developing airport zoning regulations, provides opportunity for public input, submits the proposed regulations to MnDOT for approval, adopts the final regulations, and transmits the regulations to affected municipalities for incorporation into local zoning codes.



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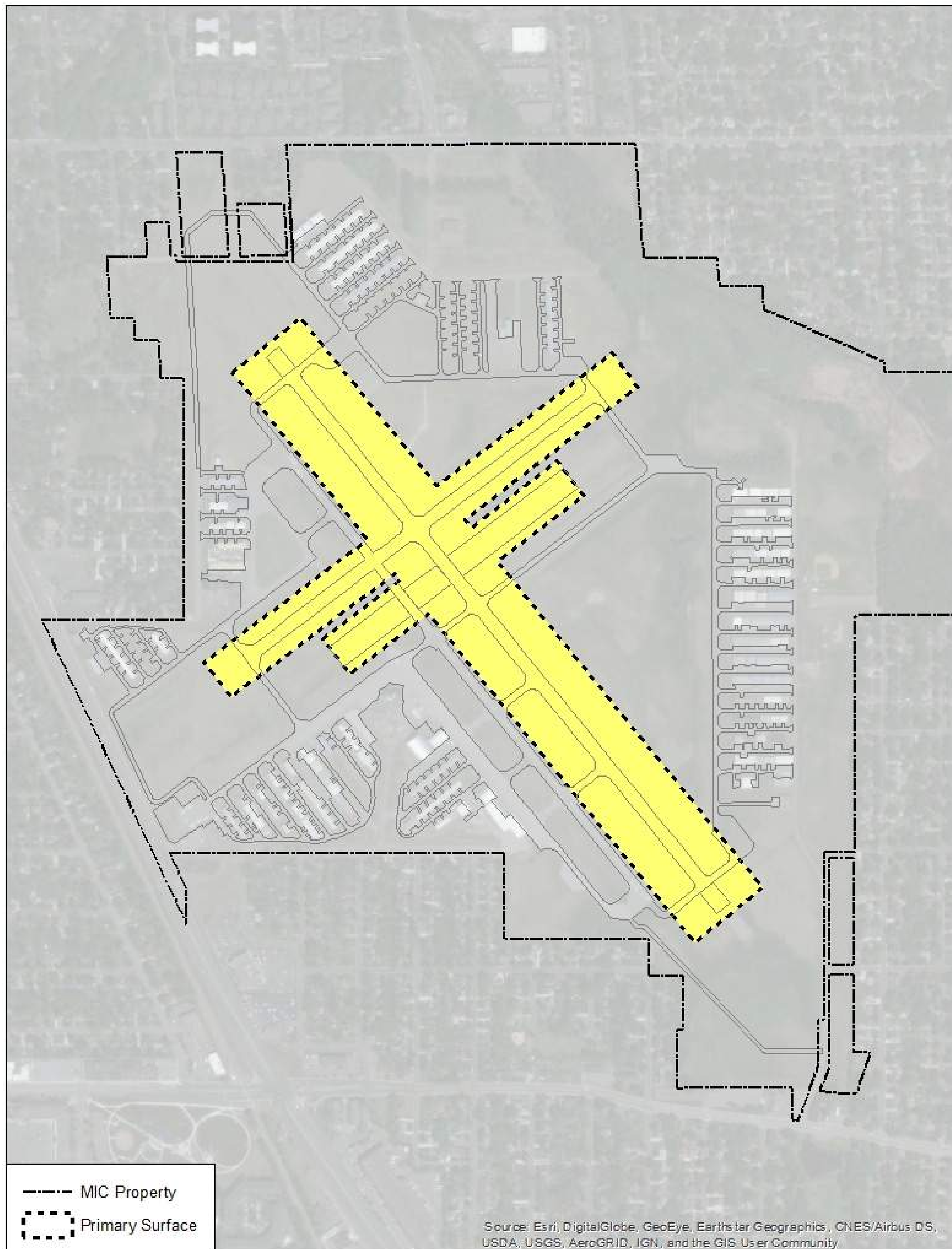
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Basic Airfield Surfaces

Runway Primary Surface

- Defined by Federal Aviation Regulations (FAR) Part 77
- The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline.
- Generally, only objects that are “fixed-by-function” may penetrate the primary surface and must be mounted on frangible couplings.

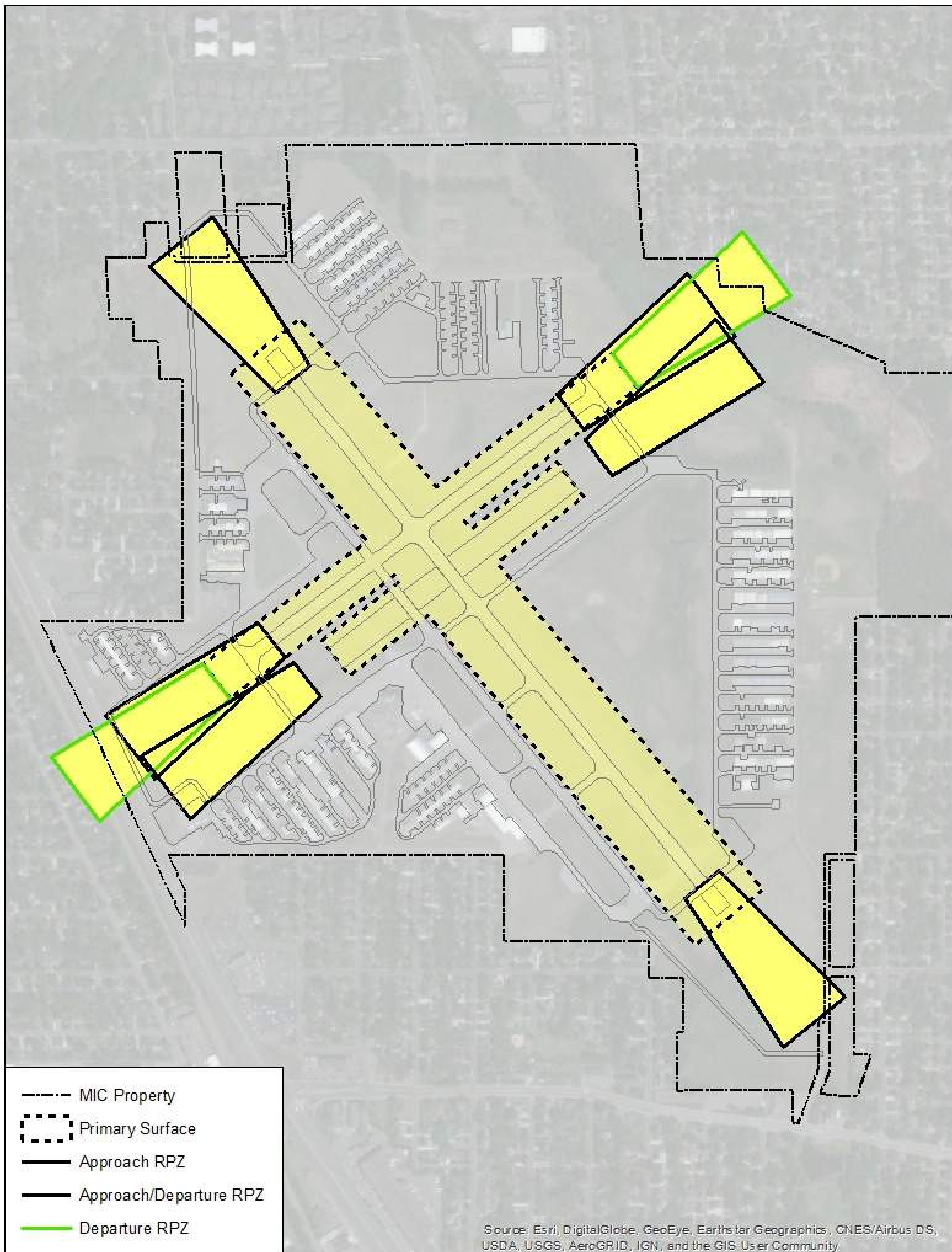


Basic Airfield Surfaces

Runway Primary Surface

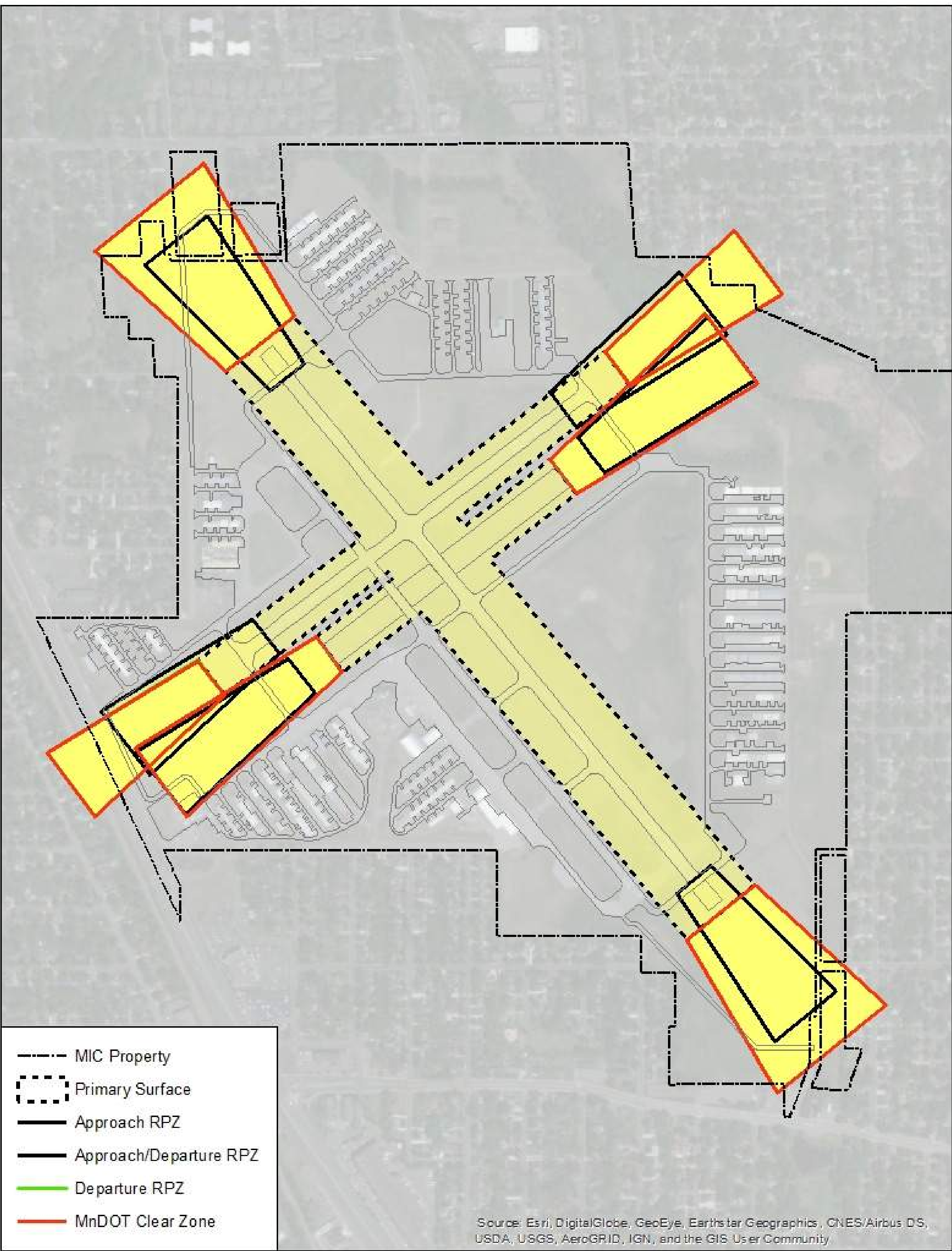
Runway Protection Zone

- Defined by FAA Advisory Circular (AC) 150/5300-13A
- Intended for protection of people and property on the ground.
- The MAC must consult FAA when any new or modified land uses enter or are proposed within an RPZ.
- Land uses requiring coordination with FAA include:
 - Buildings and structures
 - Recreational land uses
 - Transportation facilities
 - Fuel storage facilities
 - Hazardous material storage
 - Wastewater treatment facilities
 - Above-ground utility infrastructure



Basic Airfield Surfaces

Runway Primary Surface
Runway Protection Zone
MnDOT Clear Zone



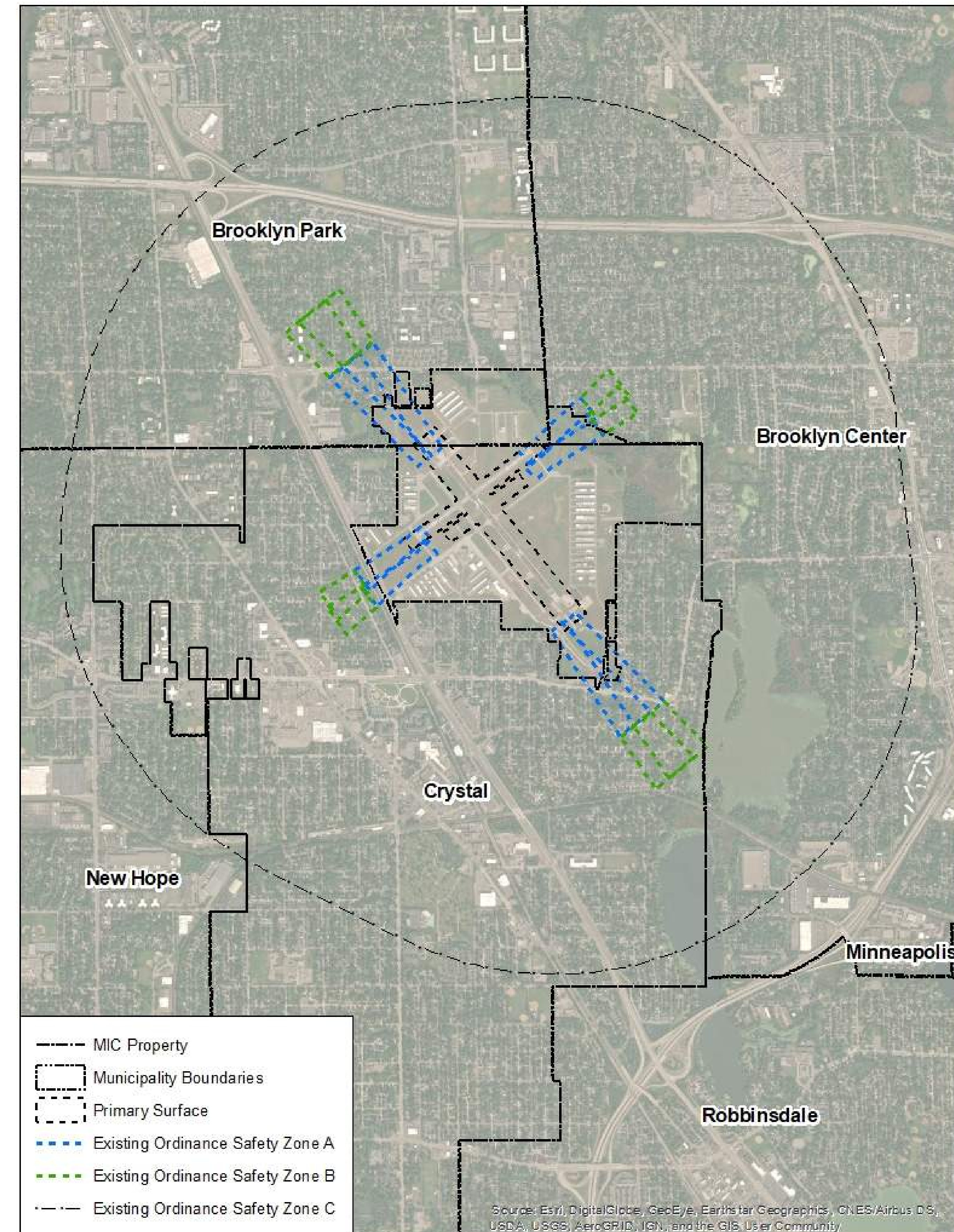
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Basic Elements of an Airport Zoning Ordinance

- Two separate elements
 - Land use restrictions
 - Structure/object height restrictions
- Airspace Zones and Land Use Safety Zones A, B, and C were adopted by the JAZB in 1983.



1983 Crystal Airport Zoning Ordinance

CRYSTAL AIRPORT

ZONING ORDINANCE

CREATED BY THE

CRYSTAL AIRPORT JOINT ZONING BOARD

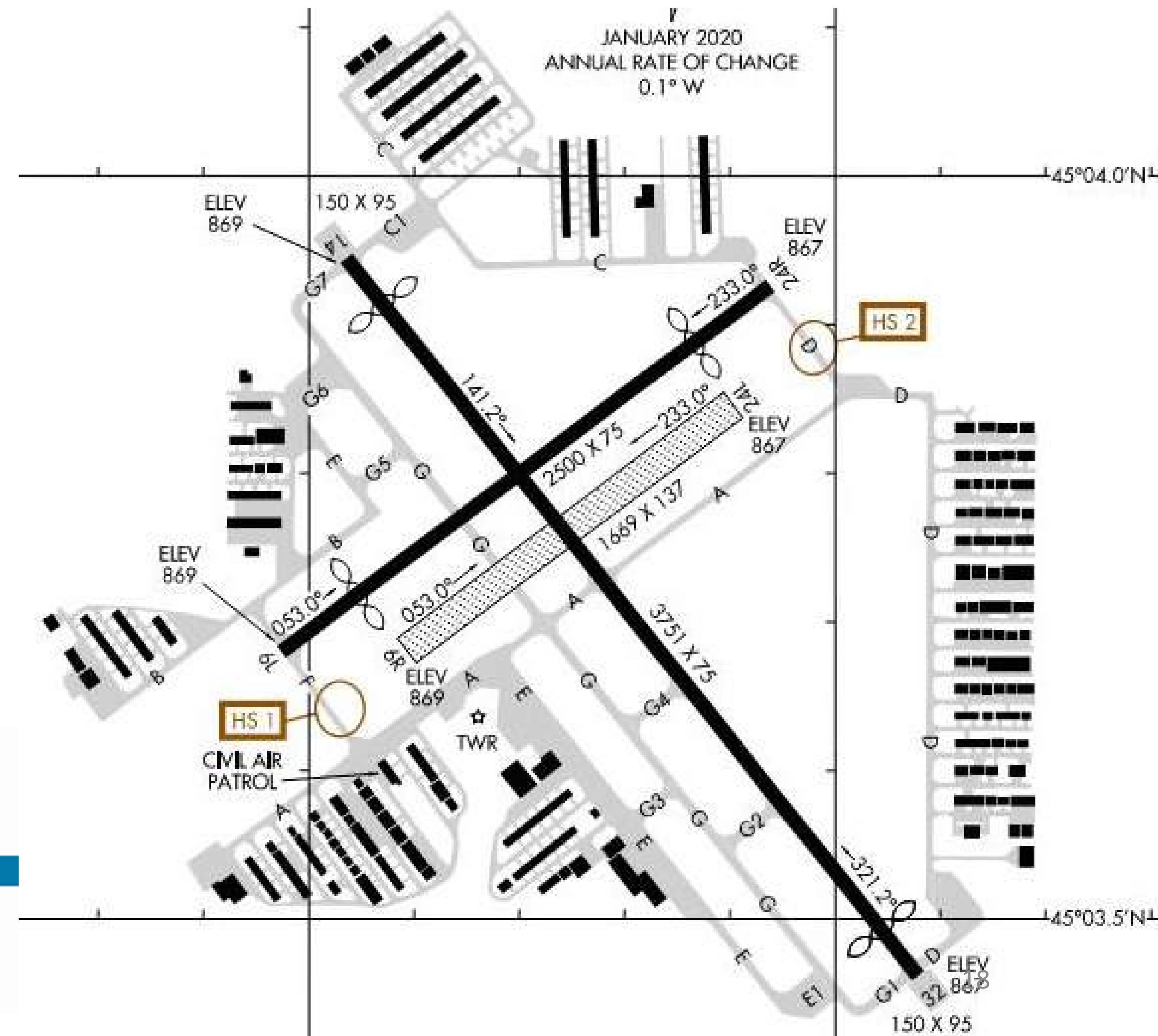
AN ORDINANCE REGULATING AND RESTRICTING THE HEIGHT OF STRUCTURES AND OBJECTS OF NATURAL GROWTH, AND OTHERWISE REGULATING THE USE OF PROPERTY, IN THE VICINITY OF THE CRYSTAL AIRPORT BY CREATING THE APPROPRIATE ZONES AND ESTABLISHING THE BOUNDARIES THEREOF; PROVIDING FOR CHANGES IN THE RESTRICTIONS AND BOUNDARIES OF SUCH ZONES; DEFINING CERTAIN TERMS USED HEREIN; REFERRING TO THE CRYSTAL AIRPORT ZONING MAP WHICH IS INCORPORATED IN AND MADE A PART OF THIS ORDINANCE; PROVIDING FOR ENFORCEMENT; ESTABLISHING A BOARD OF ADJUSTMENT; AND IMPOSING PENALTIES.



1983 Crystal Airport Zoning Ordinance

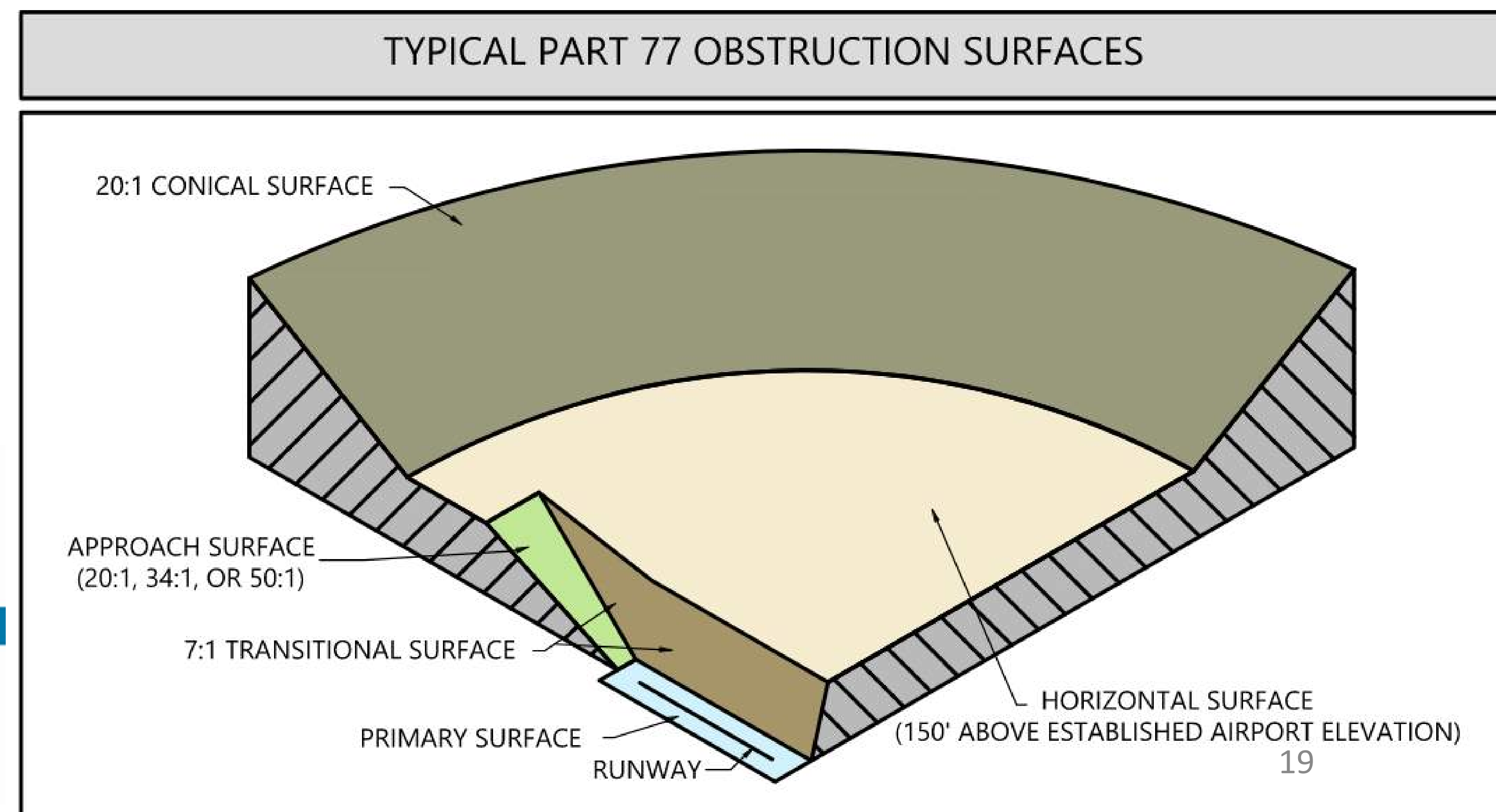
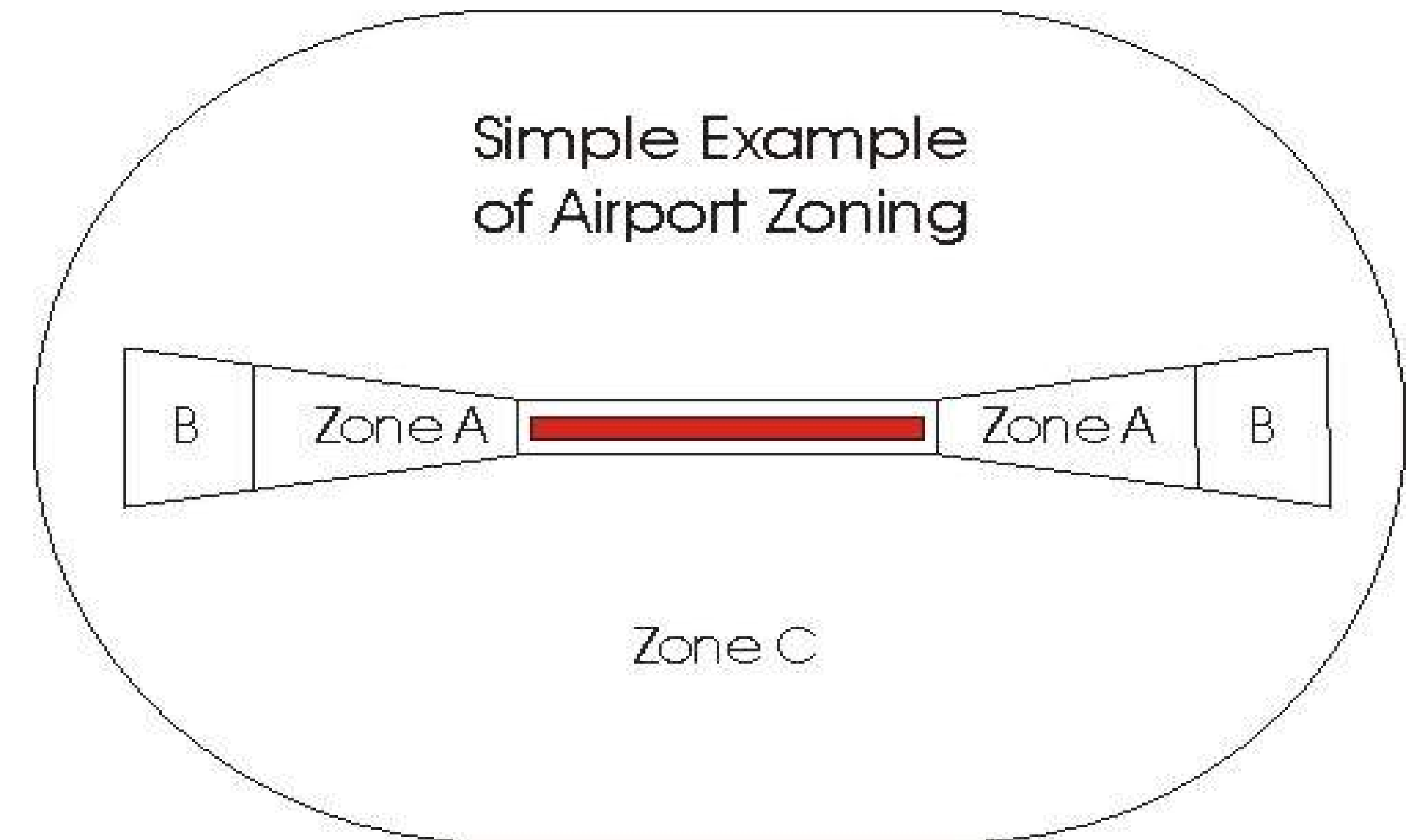
Runway Nomenclature

Runway	1983	Today
Primary	13L-31R	14-32
Parallel Primary	13R-31L	Closed
Paved Crosswind	5L-23R	6L-24R
Turf Crosswind	5R-23L	6R-24L



FAR Part 77

- Establishes Standards for Determining Obstructions in Navigable Airspace
- Sets forth the requirements for notice to the Administrator (of the FAA) of certain proposed construction or alteration
- Provides for public hearings on the hazardous effect of proposed constructions or alteration on air navigation.



Existing Ordinance Zone A

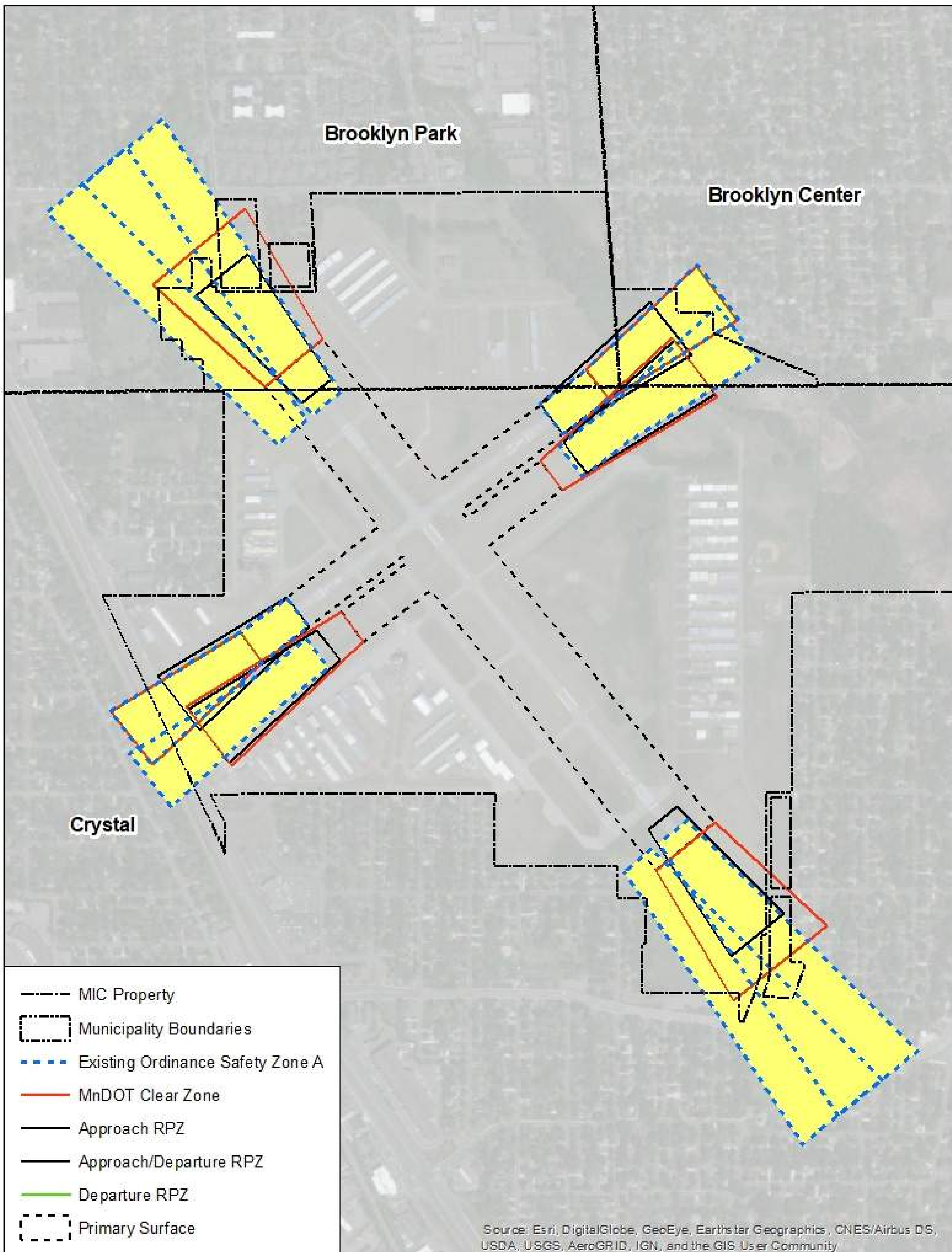
Length

“All land in that portion of the approach zones of a runway...which extends outward from a point 200 feet from the displaced threshold for Runways 5L-23R and 5R-23L and from the end of the primary surface for a Runways 13L-31R and 13R-31L a distance equal to:

- a. 2,167 feet for runways 13L-31R, 13R-31L.
- b. 1,400 feet for runways 5L-23R, 5R-23L.”

Restrictions

“Zone A shall contain no buildings, temporary structures, exposed transmission lines, or other similar above-ground land use structural hazards, and shall be restricted to those uses which will not create, attract, or bring together an assembly of persons thereon.”



Existing Ordinance Zone B

Length

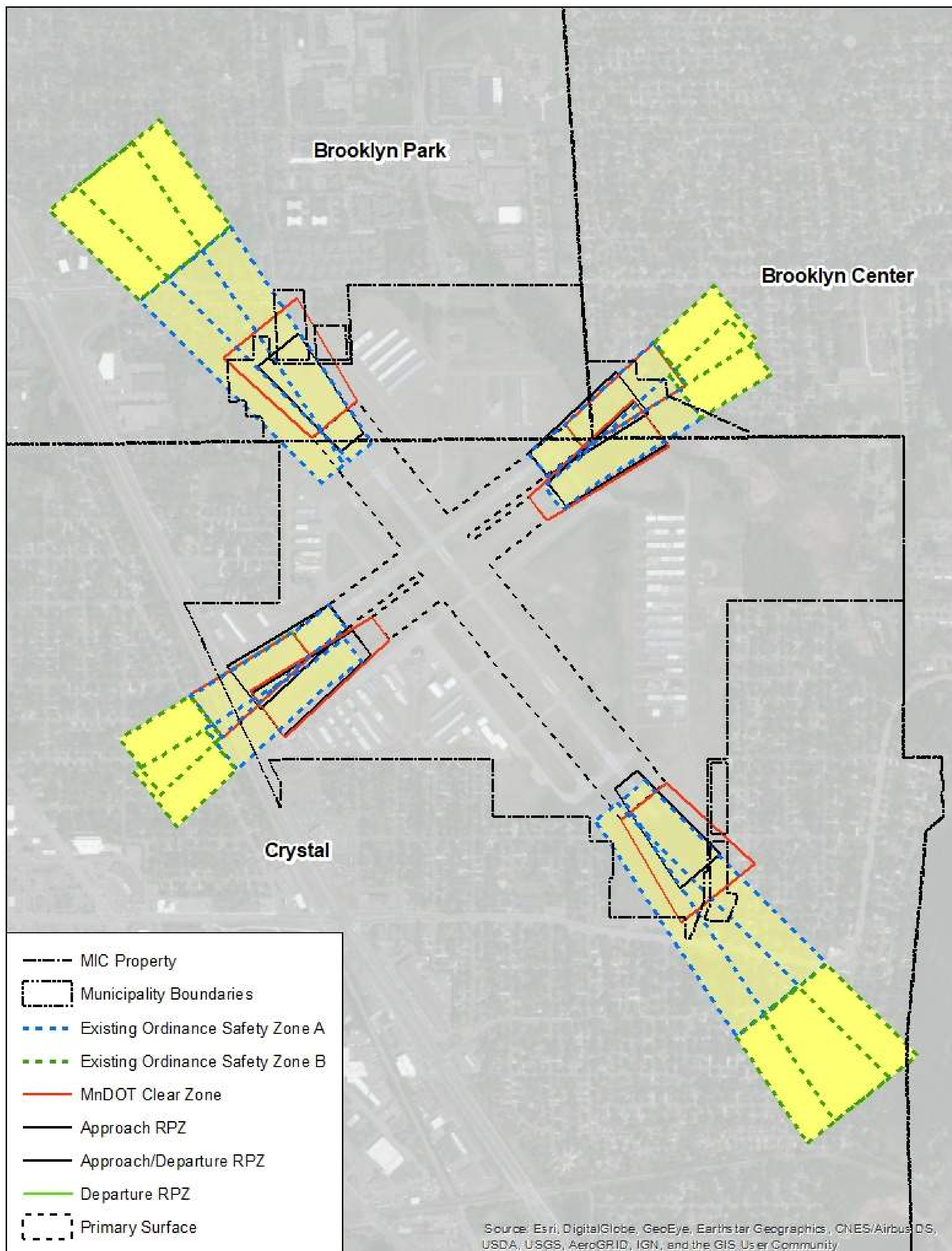
“All land in that portion of the approach zone of a runway...which extends outward from Safety Zone A a distance equal to:

- a. 1,083 feet for runways 13L-31R, 13R-31L.
- b. 700 feet for runways 5L-23R, 5R-23L.”

Restrictions

“Zone B shall be restricted in use as follows:

- a. Each use shall be on a site whose area shall not be less than three acres.
- b. Each use shall not create, attract, or bring together a site population that would exceed 15 times that of the site acreage.
- c. Each site shall have no more than one building plot upon which any number of structures may be erected.
- d. A building plot shall be a single, uniform and non-contrived area, whose shape is uncomplicated and whose area shall not exceed the following minimum ratios with respect to the total site area:
- e. The following uses are specifically prohibited in Zone B: Churches, hospitals, schools, theaters, stadiums, hotels and motels, trailer courts, campgrounds, and other places of frequent public or semi-public assembly.”



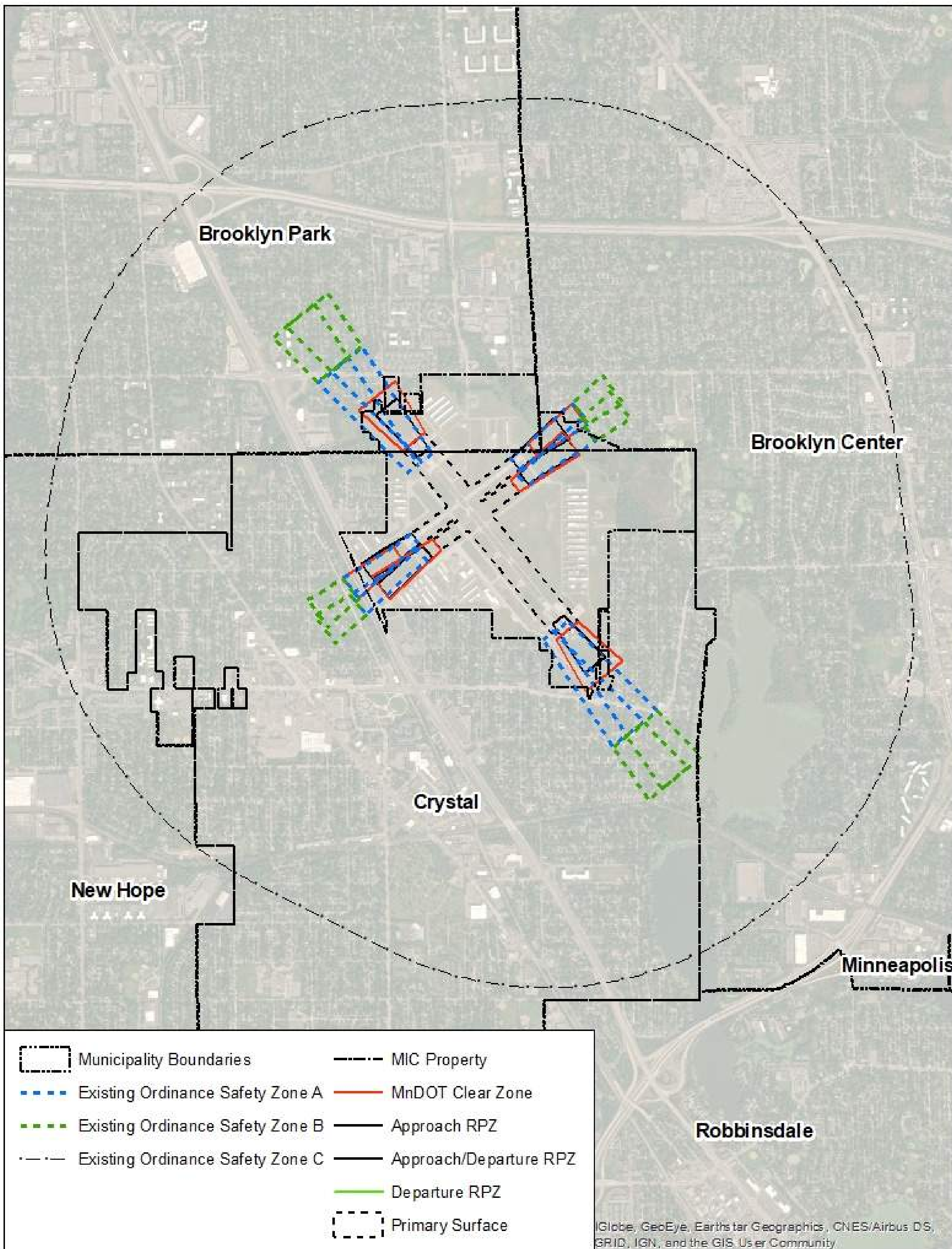
Existing Ordinance Zone C

Radius

“All that land which is enclosed within...the horizontal zone [the perimeter of which is constructed by swinging arcs of 6,000 feet from the center of each end of the primary surface for each runway and connecting the adjacent arcs by lines tangent to those arcs.]”

Restrictions

“No use shall be made of any land...which create or causes interference with the operations of radio or electronic facilities on the airport or with radio or electronic communications between the airport and aircraft, makes it difficult for pilots to distinguish between airport lights and other lights, results in glare in the eyes of pilots using the airport, impairs visibility in the vicinity of the airport, or otherwise endangers the landing, taking off, or maneuvering of aircraft.”

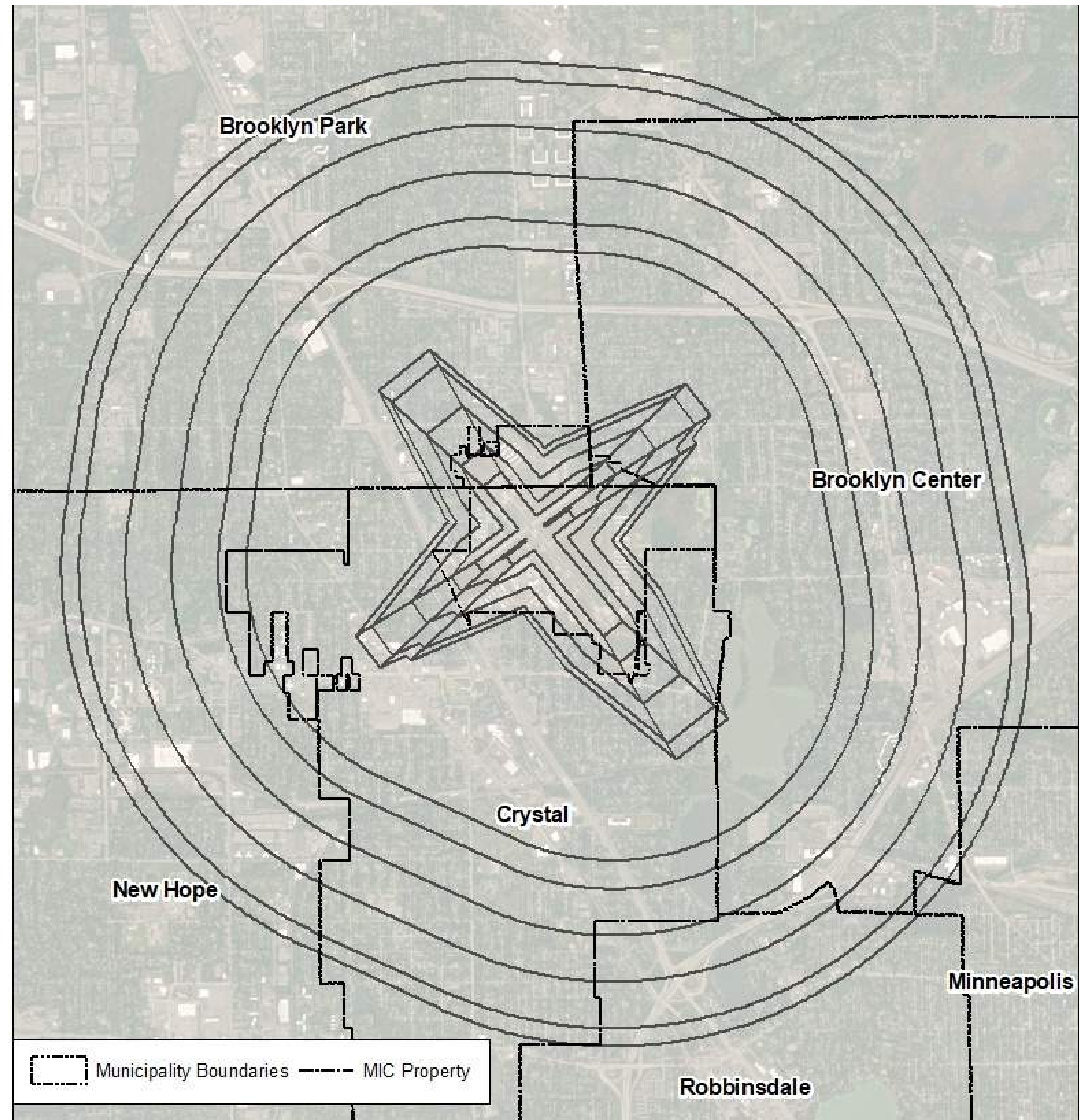


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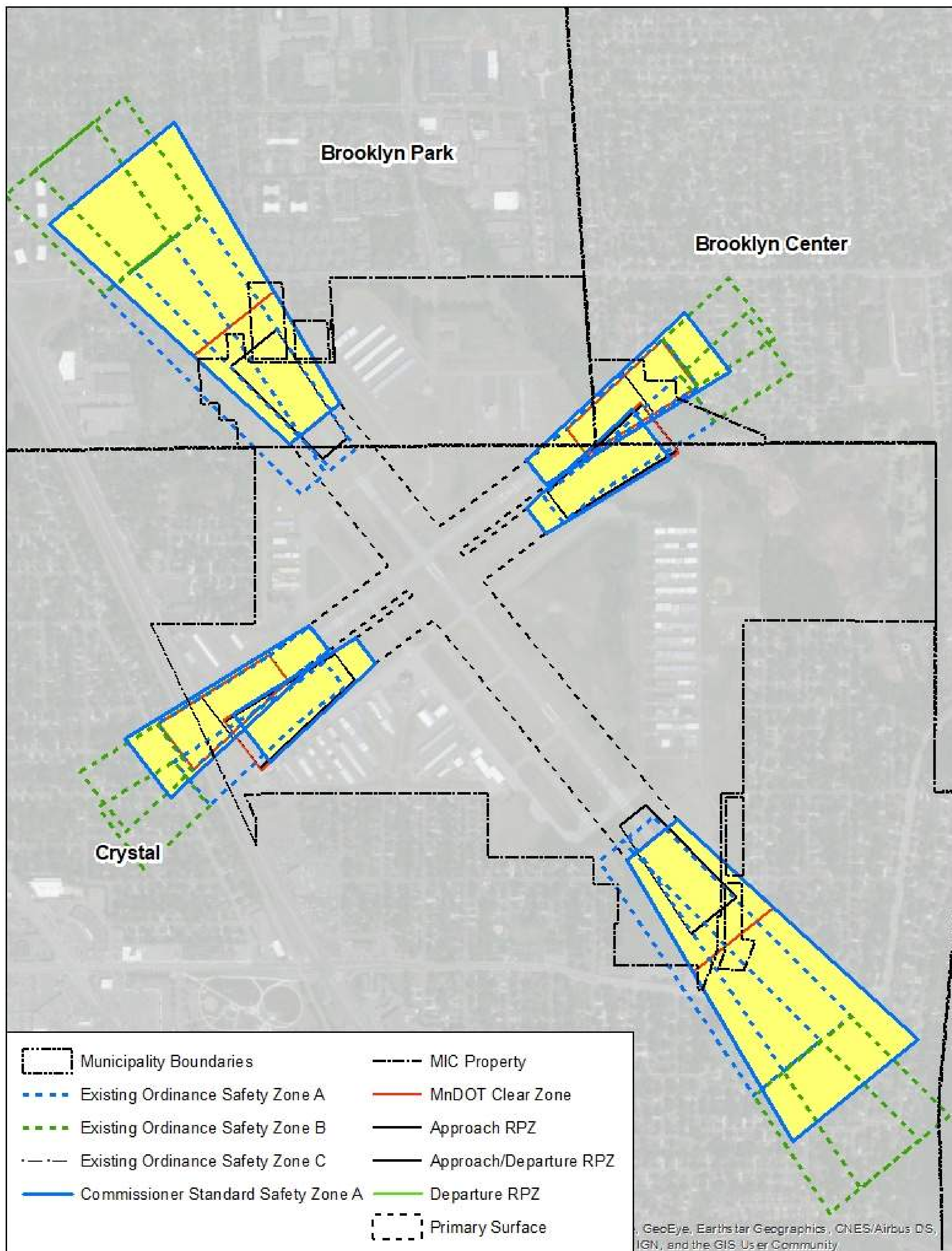
Current FAR Part 77 Surfaces



Commissioner Standard Zone A

Comparison to Existing Ordinance

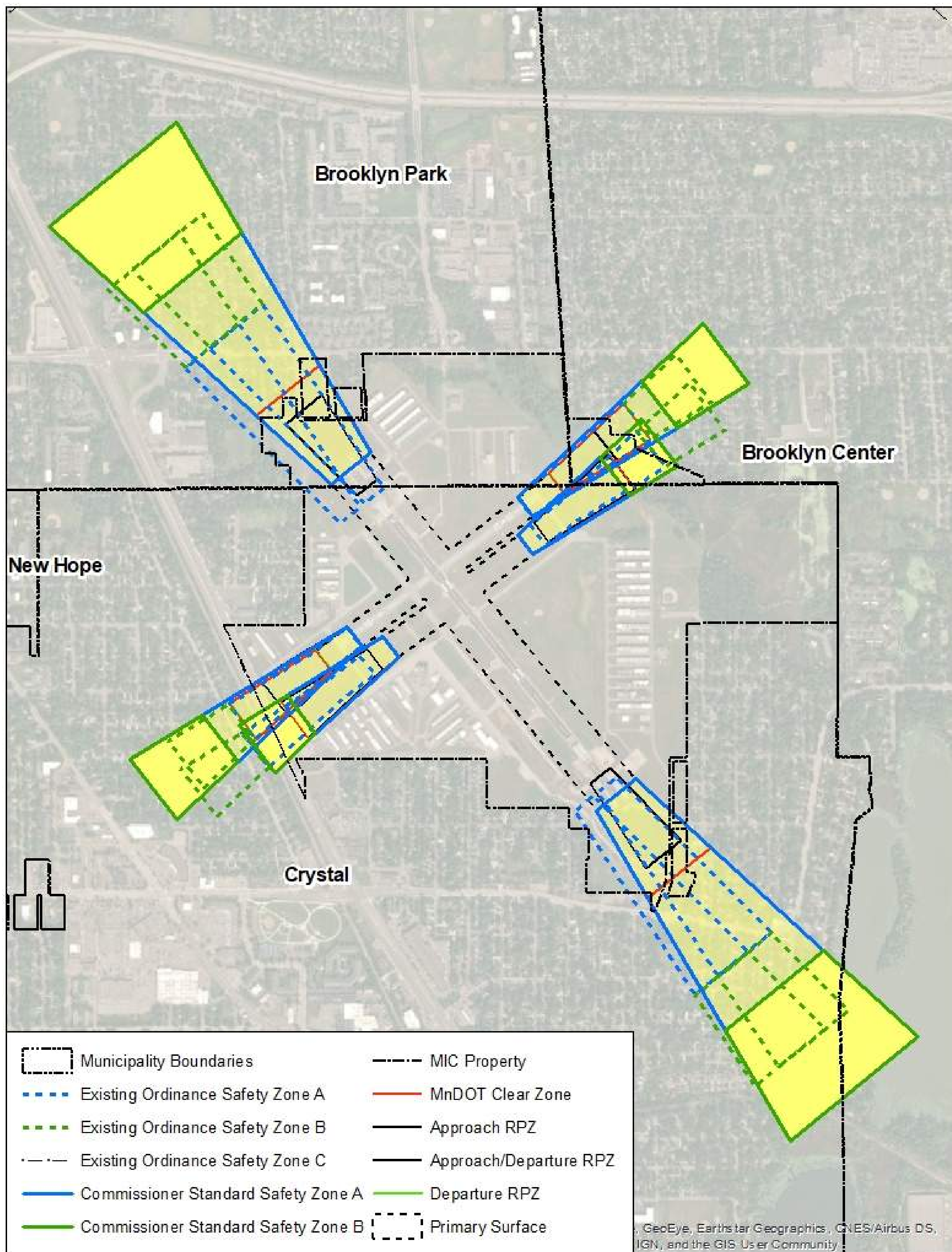
Dimension	Source	14-32	6L-24R	6R-24L
Primary Surface Width	Existing Ordinance	250'	250'	250'
	Commissioner Standard	500'	Same	Same
Safety Zone A Length	Existing Ordinance	2,167'	1,400'	1,400'
	Commissioner Standard	2,500'	1,667'	1,113'



Commissioner Standard Zone B

Comparison to Existing Ordinance

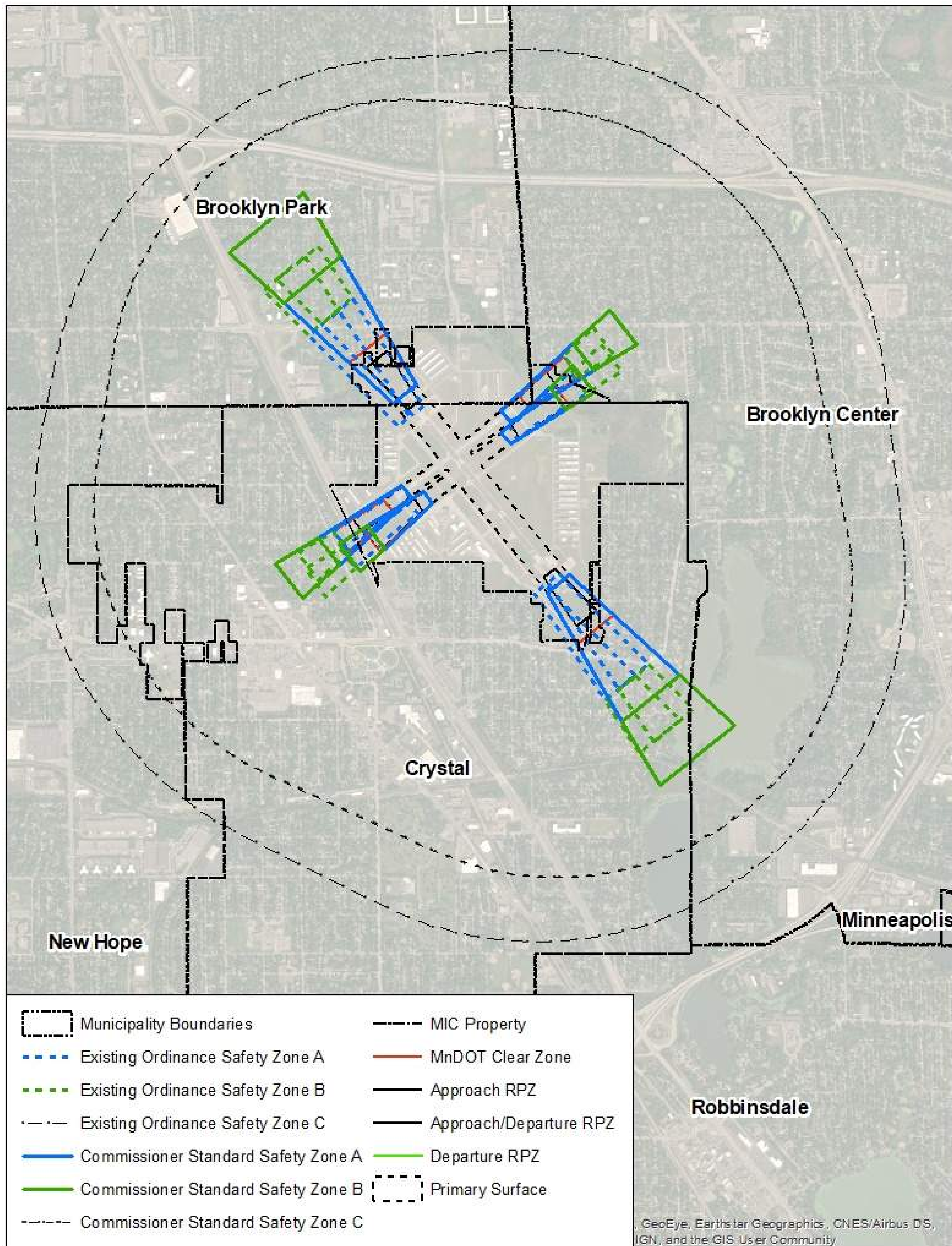
Dimension	Source	14-32	6L-24R	6R-24L
Safety Zone B Outer Width	Existing Ordinance	900'	590'	590'
	Commissioner Standard	1,625'	750'	584'
Safety Zone B Length	Existing Ordinance	1,083'	700'	700'
	Commissioner Standard	1,250'	833'	556'



Commissioner Standard Zone C

Radius

- Existing Ordinance: 6,000 feet
- Commissioner Standard: 5,000 feet



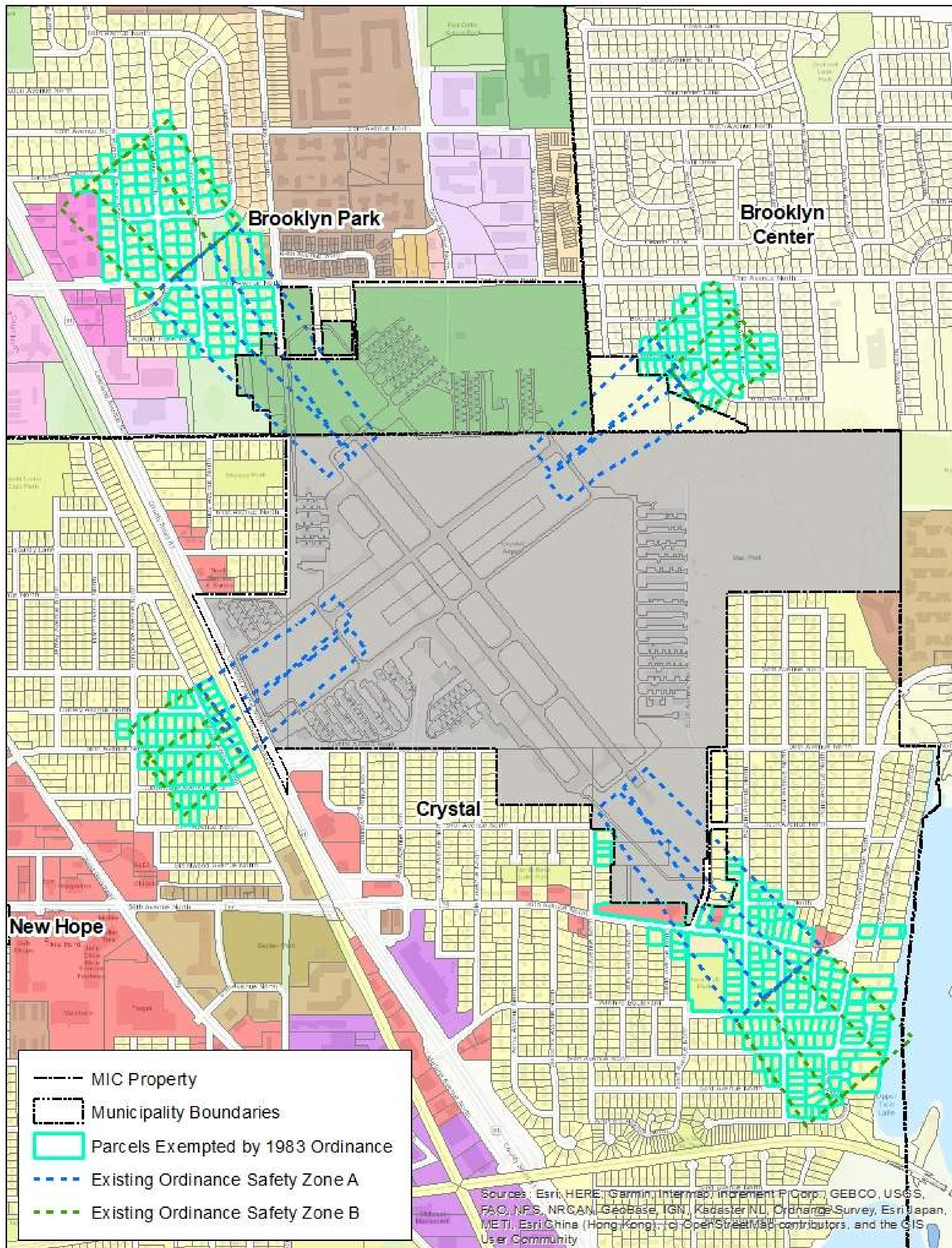
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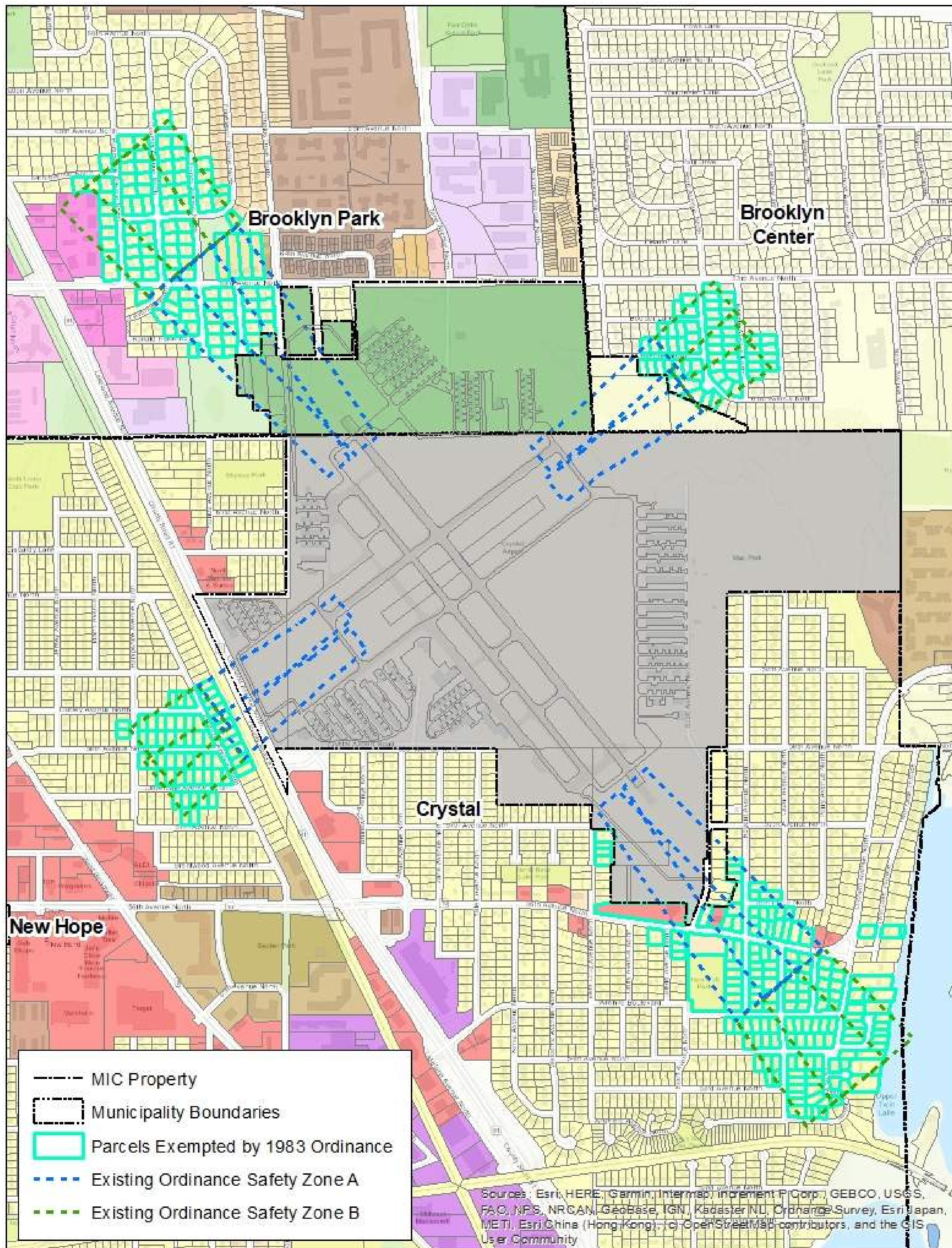
Established Residential Neighborhoods

- The 1983 ordinance exempted nearly 400 off-airport properties from Safety Zone A & B land use restrictions based on criteria identified in Minnesota Administrative Rules 8800.2400.
- The State legislature mandated special provisions for existing land uses in “established residential neighborhoods in built up urban areas”.
- ERN designation did not exempt properties from height restrictions or Zone C land use restrictions.
- ERN was replaced with “existing land use” by recent State statute update, allowing for broader exemptions. Future rulemaking is envisioned to define “existing land use”.



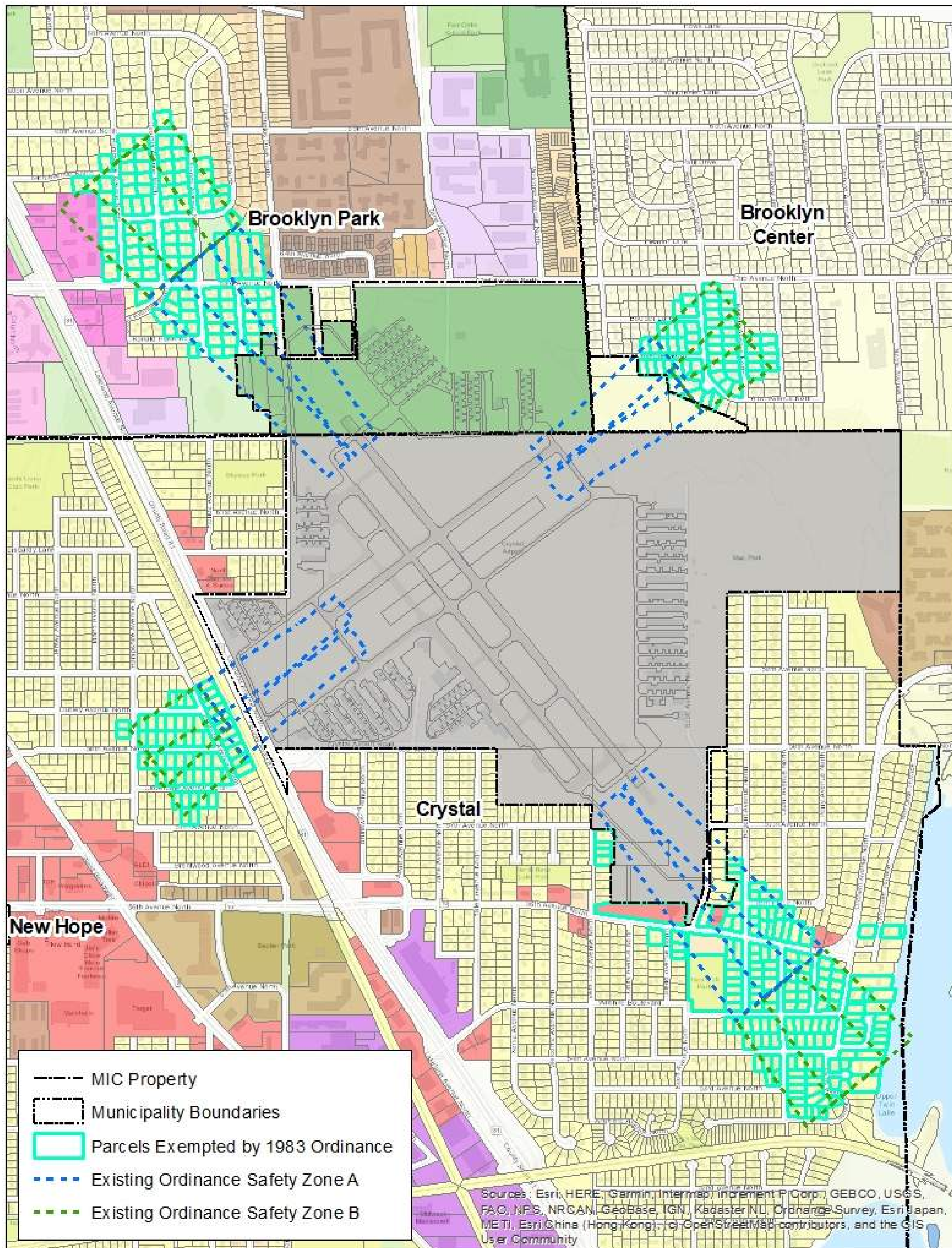
Established Residential Neighborhoods

- Under the previous statute, low-density residential building lots or structures which existed in an ERN on January 1, 1978, “must either be allowed to continue as a conforming use under the terms of the local zoning ordinance or must be acquired, altered, or removed” at public expense.
- ERN criteria did not apply to commercial or industrial properties, or residential properties zoned for greater than two family residences.
- The 1983 ordinance extended ERN status to those lots or structures which existing on July 2, 1979.



Established Residential Neighborhoods

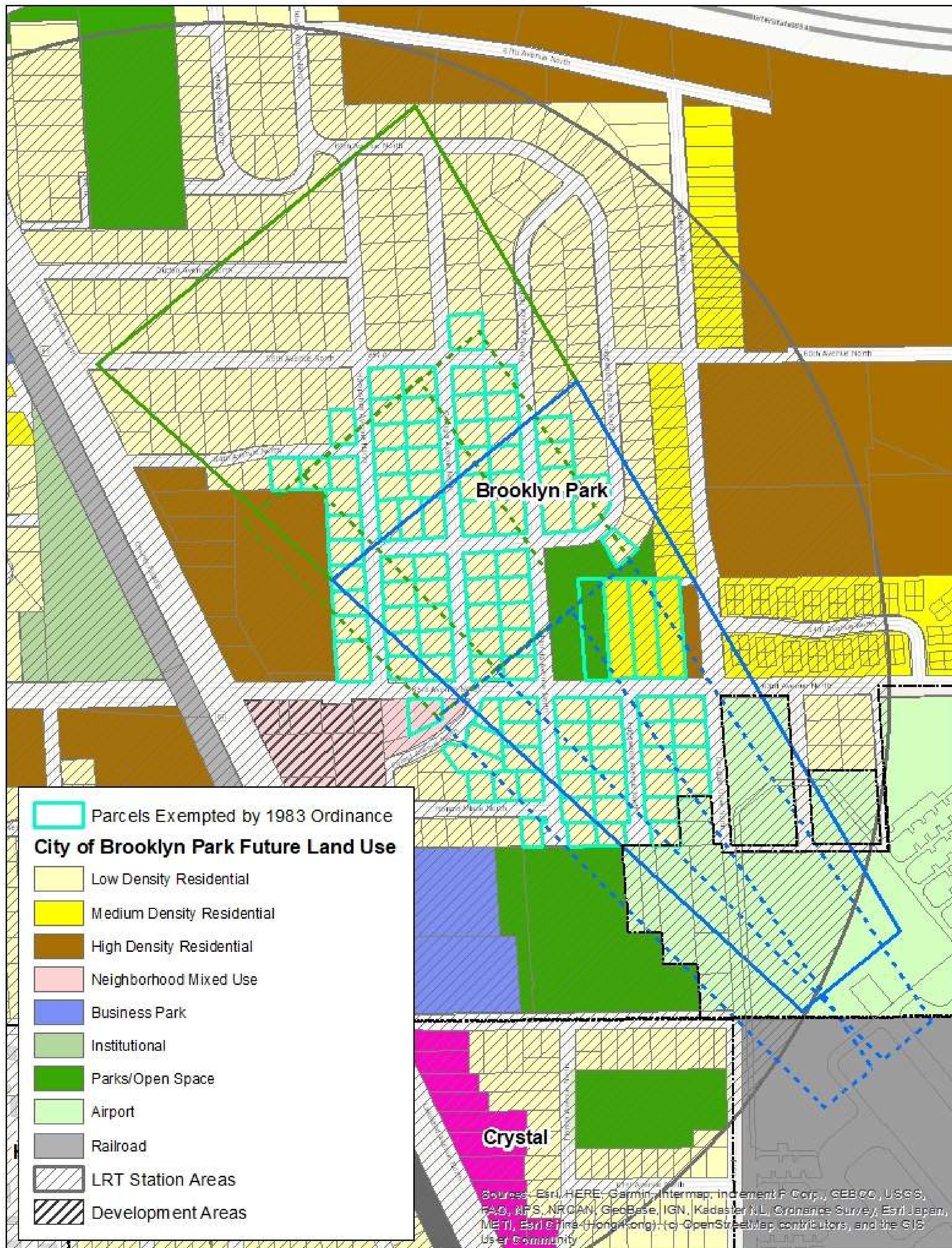
- No material change may be made in the use of land and no structure may be erected, altered, or otherwise established unless a permit is applied for and granted.
- No permit may be granted that would allow the establishment or creation of an airport hazard or permit a nonconforming use, structure, or tree to become a greater hazard to air navigation than it was on the effective date of the ordinance, or than it is when the application for a permit is made.



Runway 14 Planned Future Land Use

Affected Future Land Uses

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Parks/Open Space
- LRT Station Area



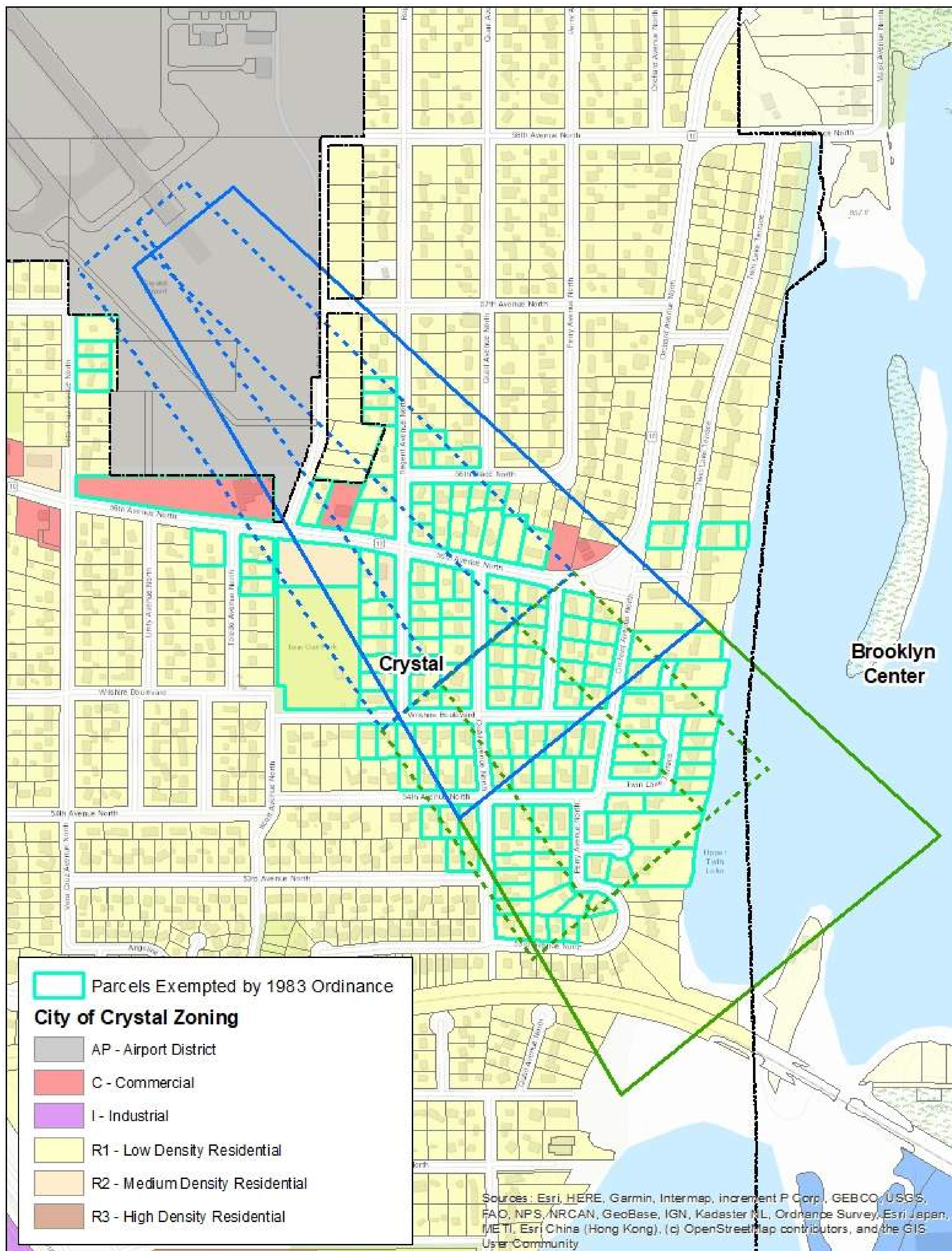
Runway 32 City Zoning

Affected Zoning Districts

- Low Density Residential
- Commercial

Existing Ordinance vs. Commissioner Standard

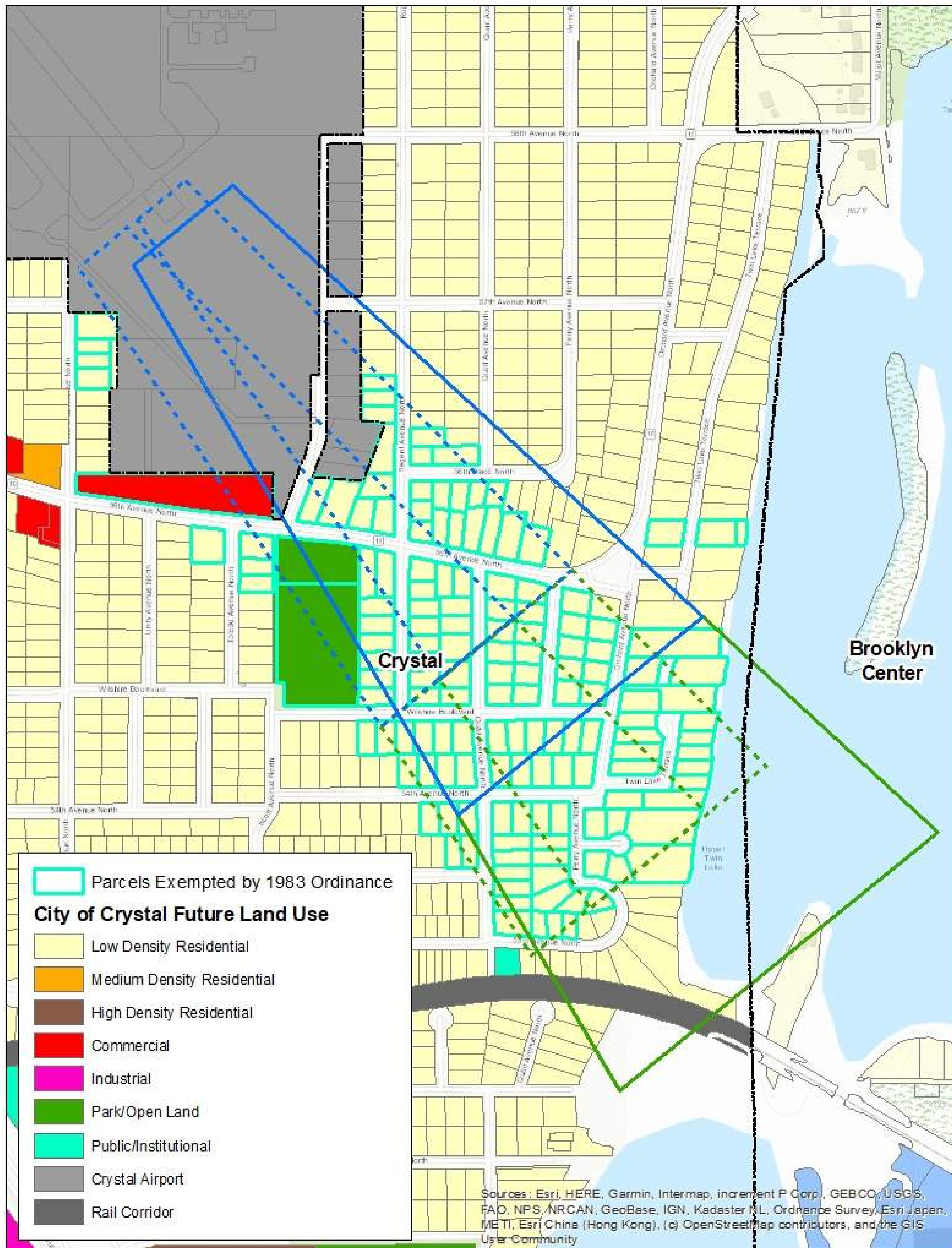
- 150 exempt parcels under 1983 ordinance
- 115 parcels in Commissioner Standard Zone A
- 59 parcels in Commissioner Standard Zone B



Runway 32 Planned Future Land Use

Affected Future Land Uses

- Low Density Residential
- Commercial
- Park/Open Land
- Right-of-Way



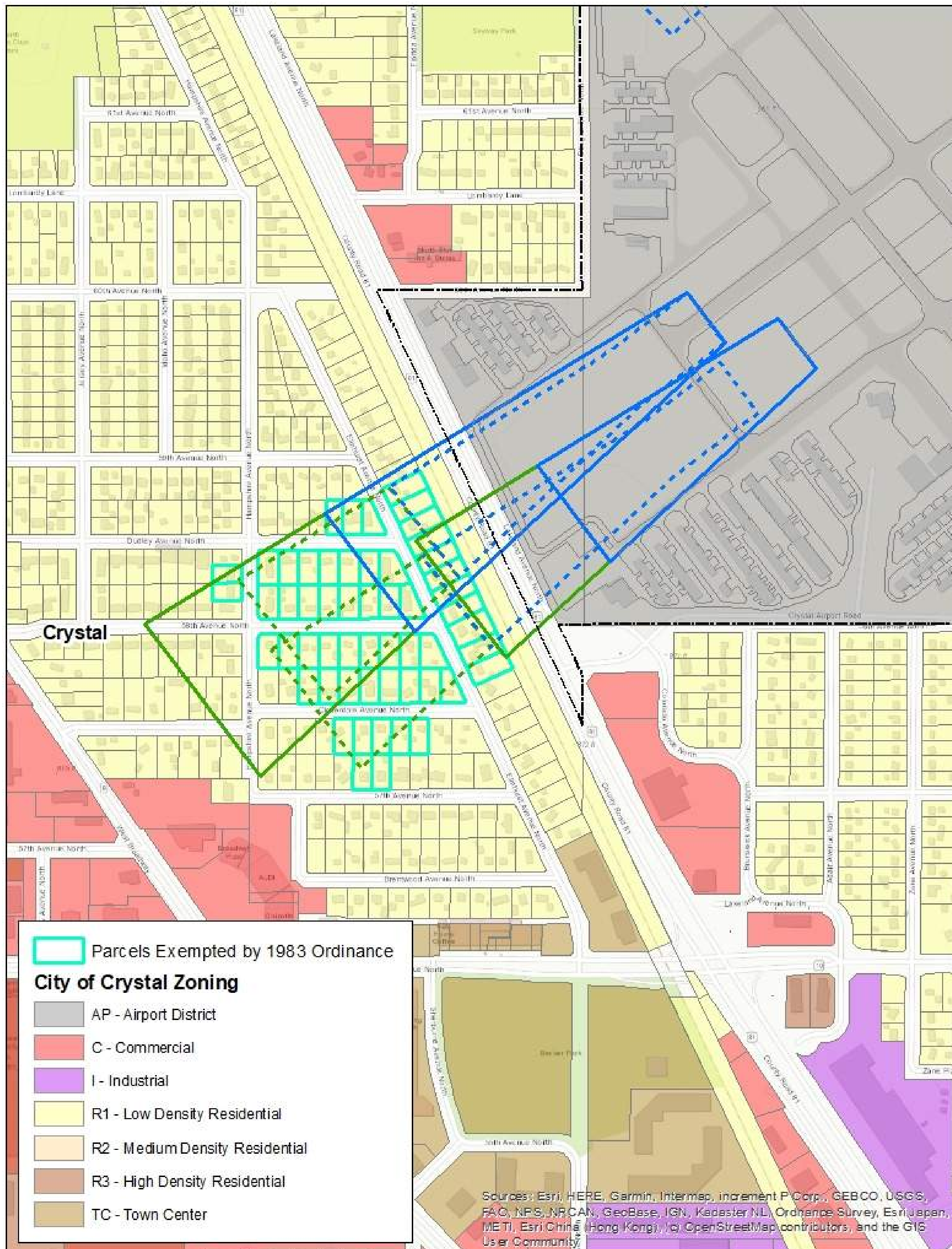
Runway 6L/6R City Zoning

Affected Zoning Districts

- Low Density Residential

Existing Ordinance vs. Commissioner Standard

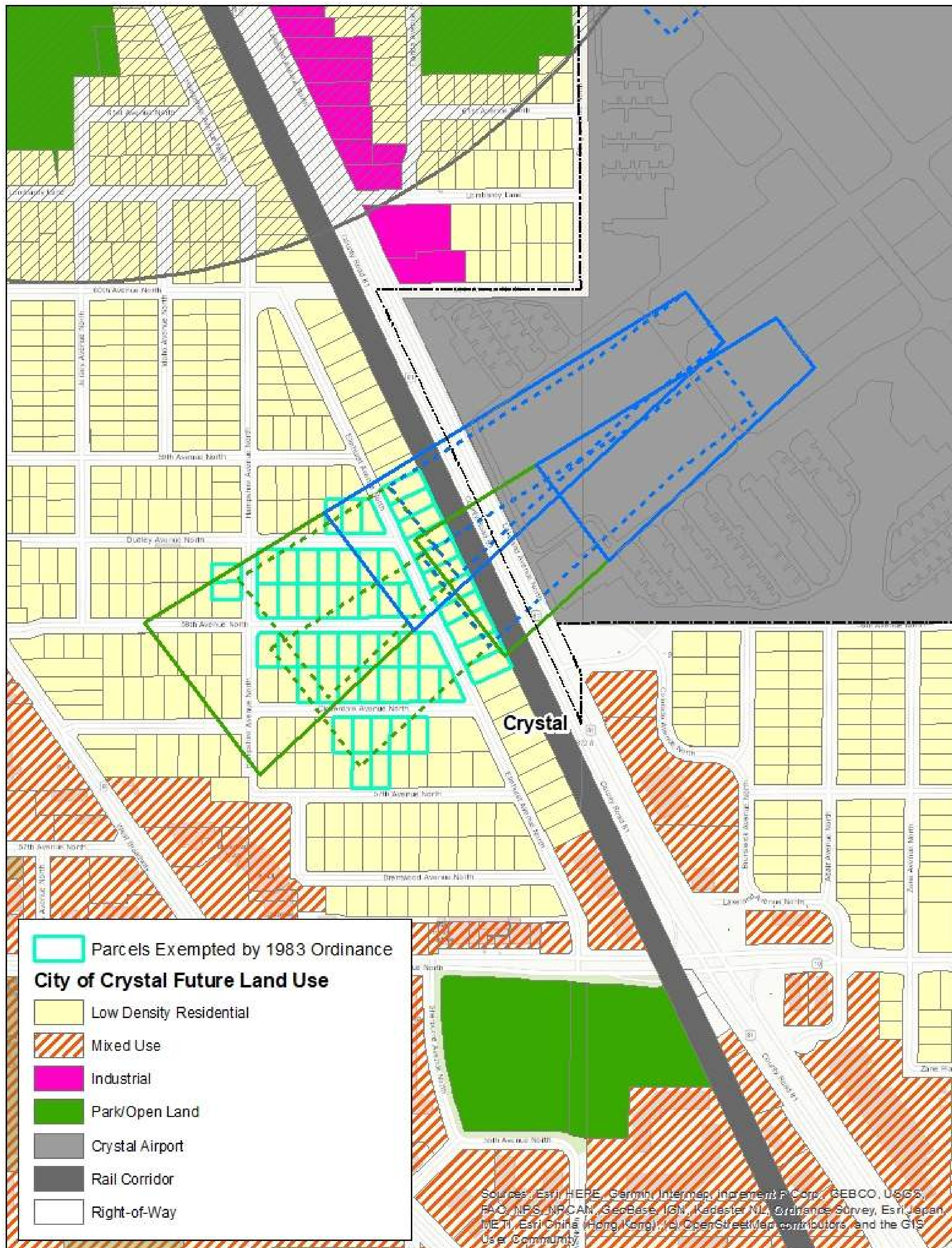
- 65 exempt parcels under 1983 ordinance
- 16 parcels in Commissioner Standard Zone A
- 51 parcels in Commissioner Standard Zone B



Runway 6L/6R Planned Future Land Use

Affected Future Land Uses

- Low Density Residential
- Rail Corridor
- Right-of-Way



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Custom Ordinance Case Studies



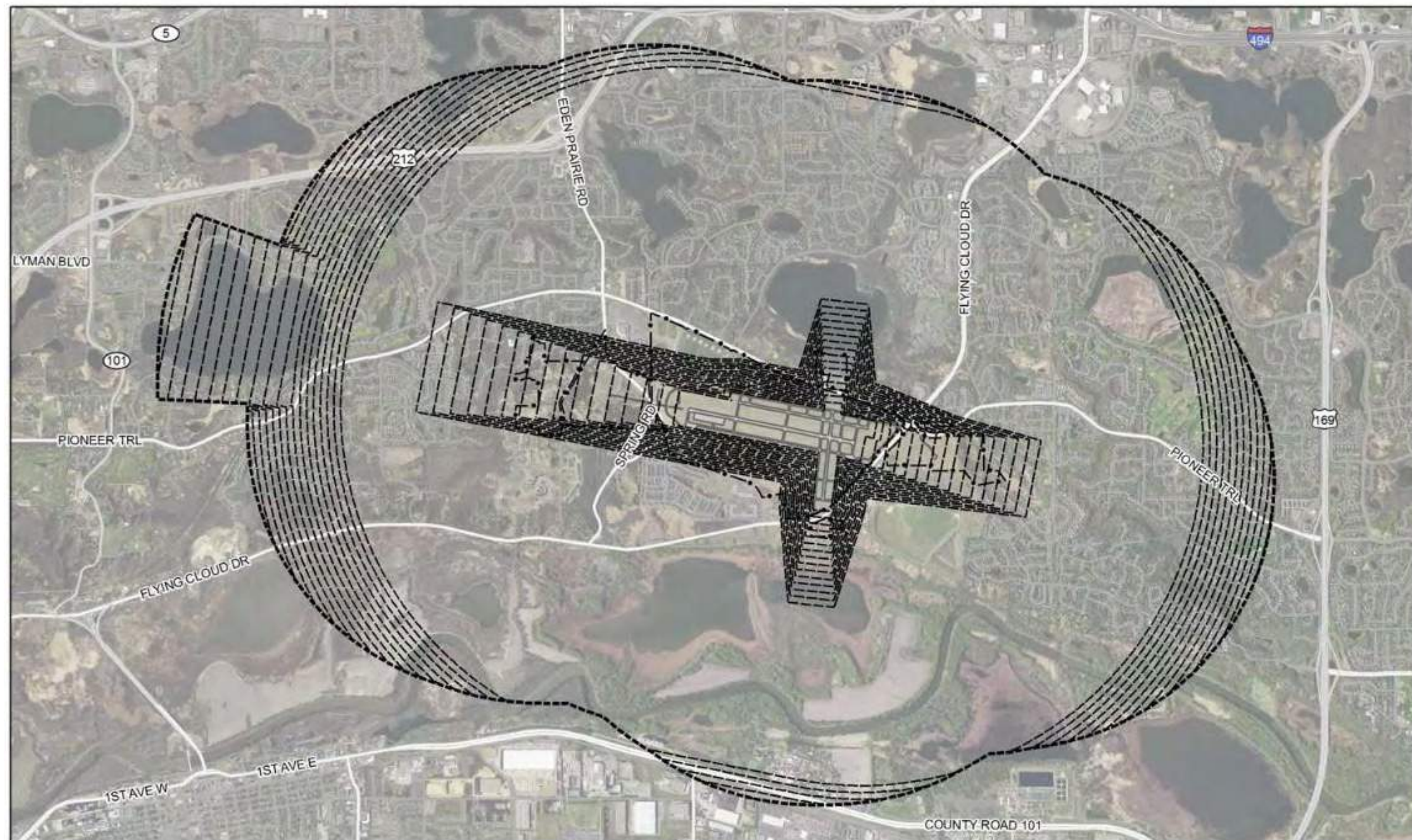
Flying Cloud Airport



Lake Elmo Airport



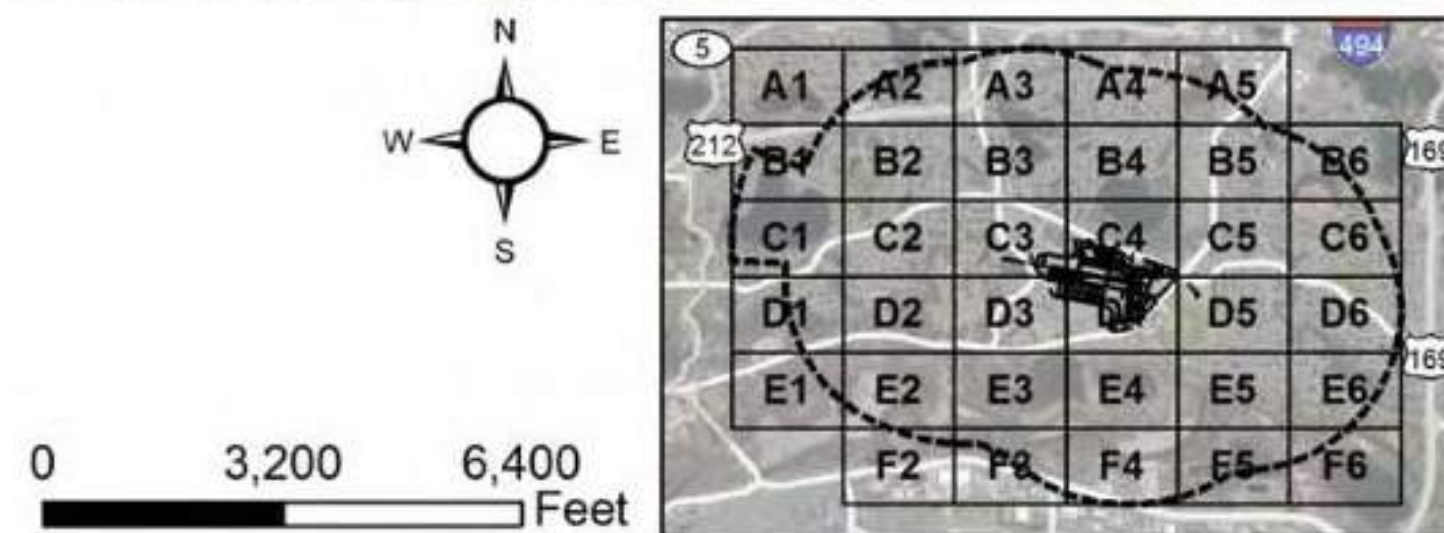
Flying Cloud Airport Zoning – Case Study



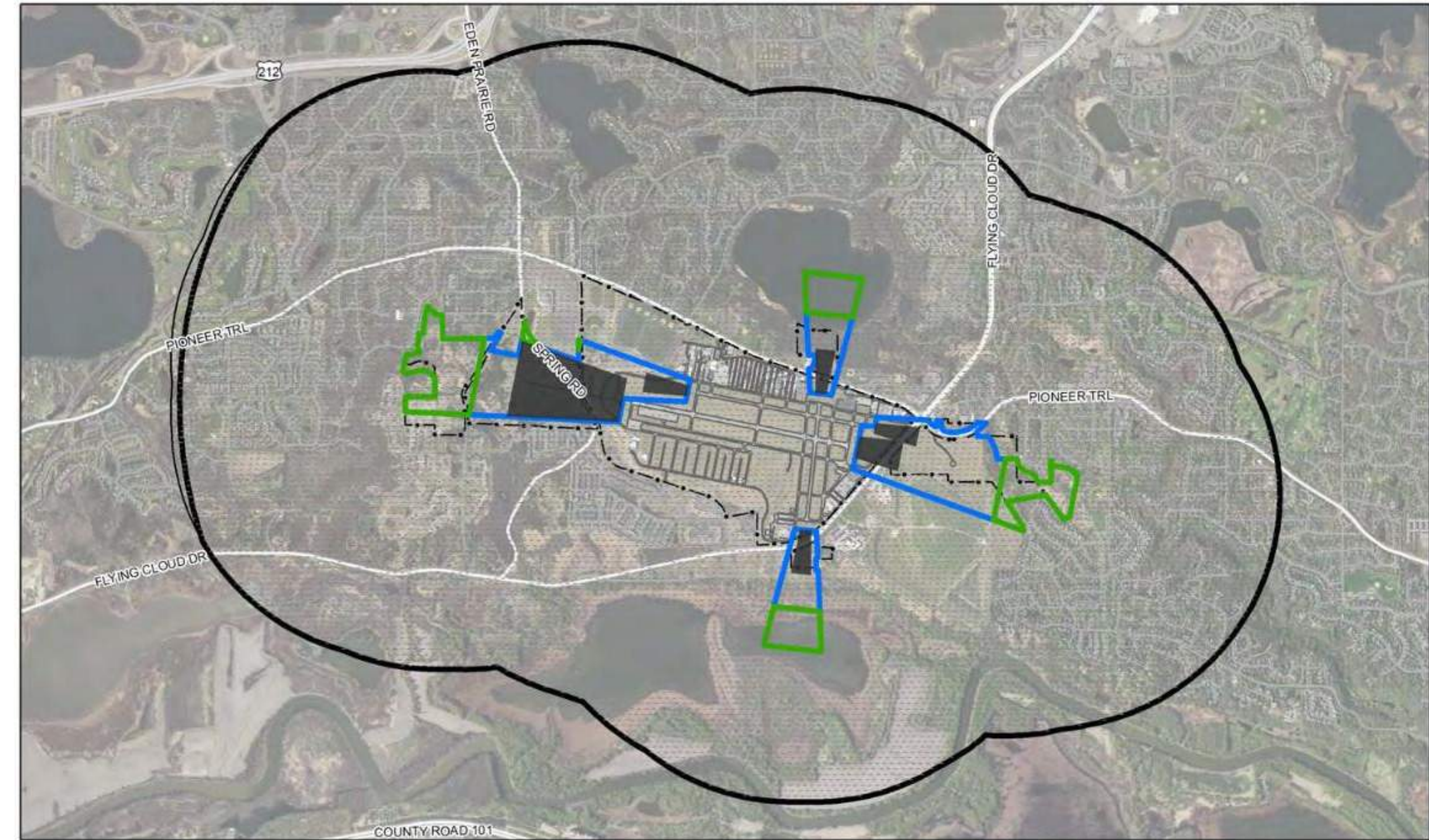
FCM Airspace Zones Within Zoning Limits

A - Index Sheet

- FCM Property Line
- Airspace Zoning Limit
- Part 77 Contours



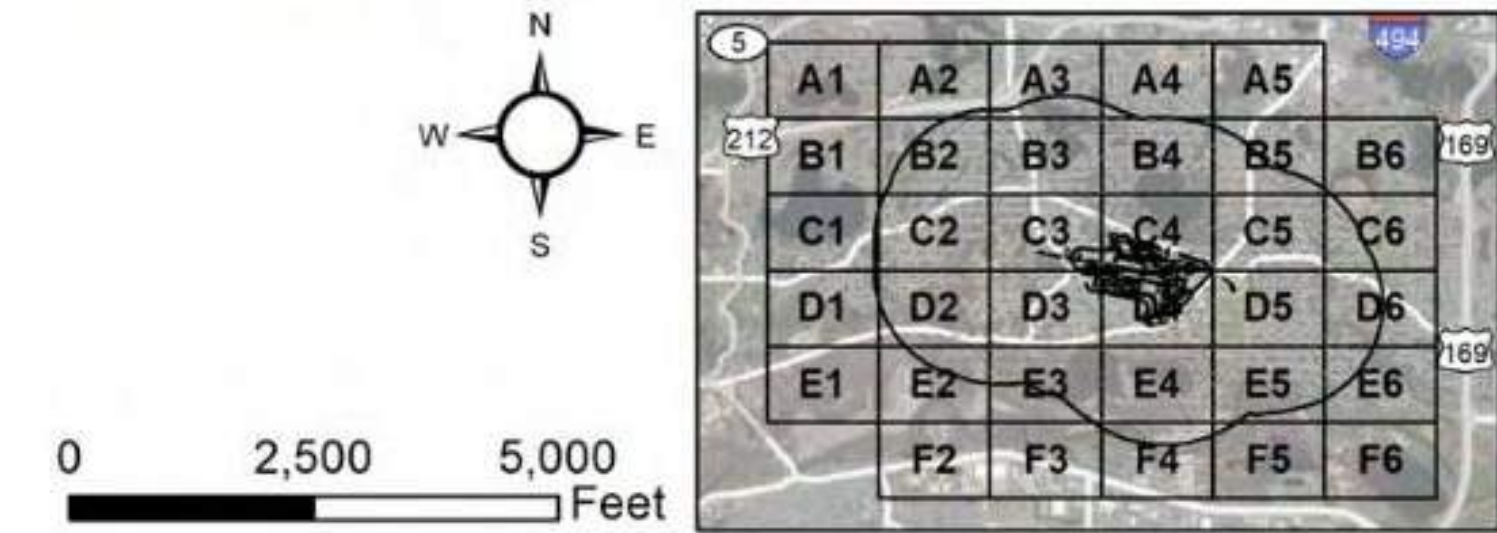
Height Limitations



FCM Safety Zones Within Zoning Limits

SZ - INDEX SHEET

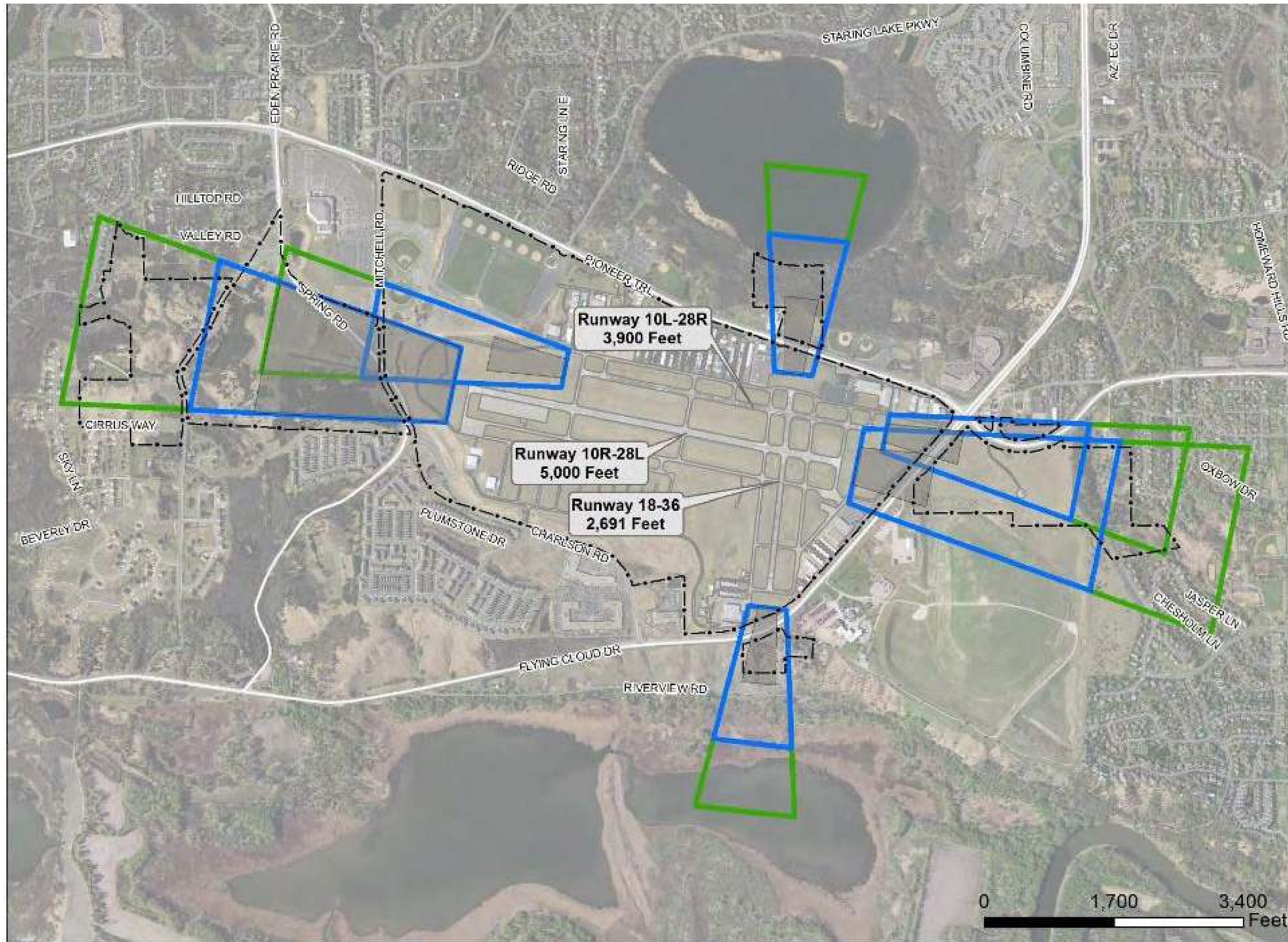
- FCM Property Line
- Safety Zoning Limit
- RPZ
- JAZB Zone A
- JAZB Zone B
- JAZB Zone C



Land Use Limitations



Flying Cloud Airport Zoning – Case Study

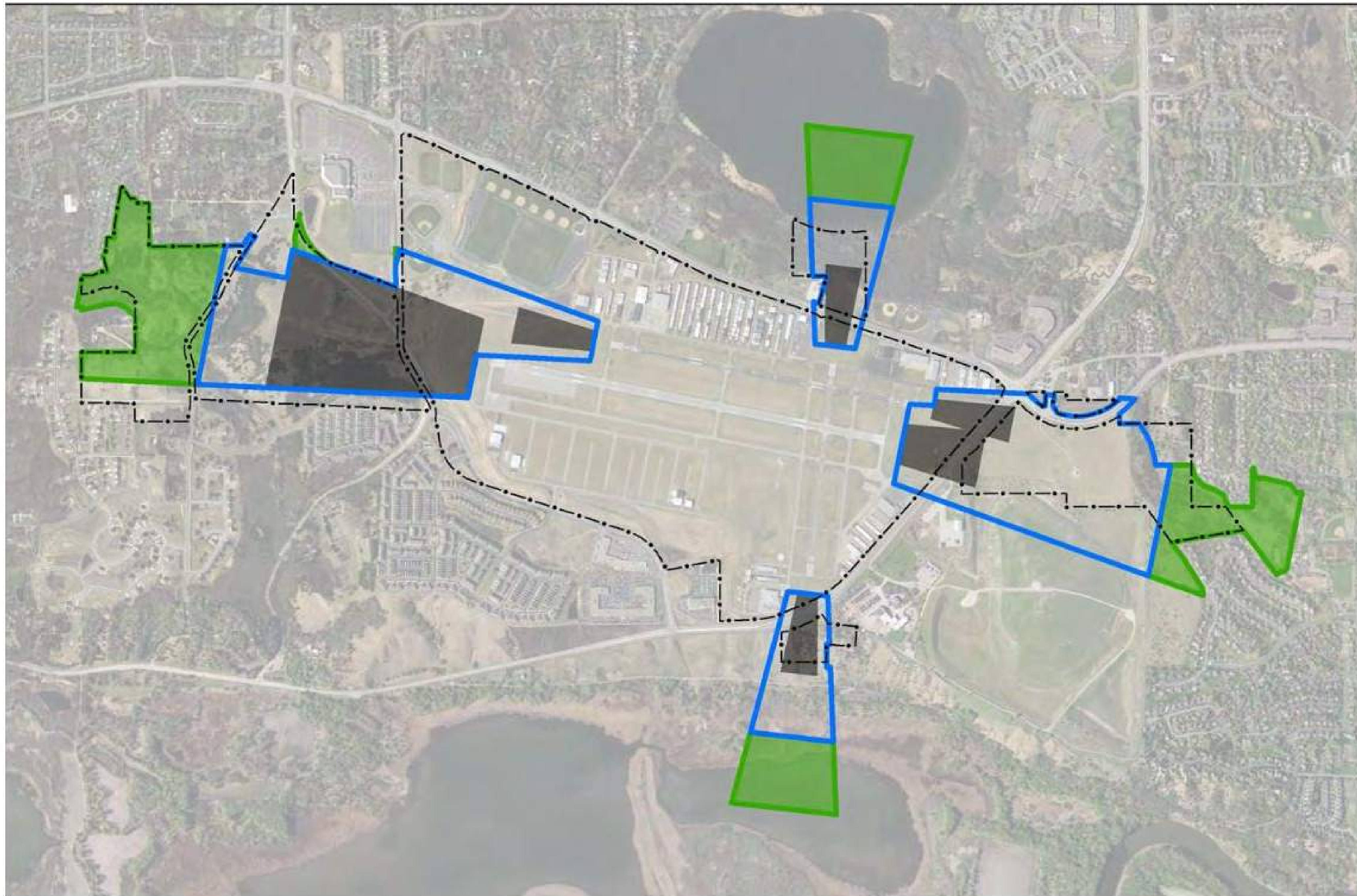


FCM Property Line Runway Protection Zones (RPZ) Model Zone A Model Zone B

**MnDOT Commissioner Standard
Safety Zones A & B**



Flying Cloud Airport Zoning – Case Study



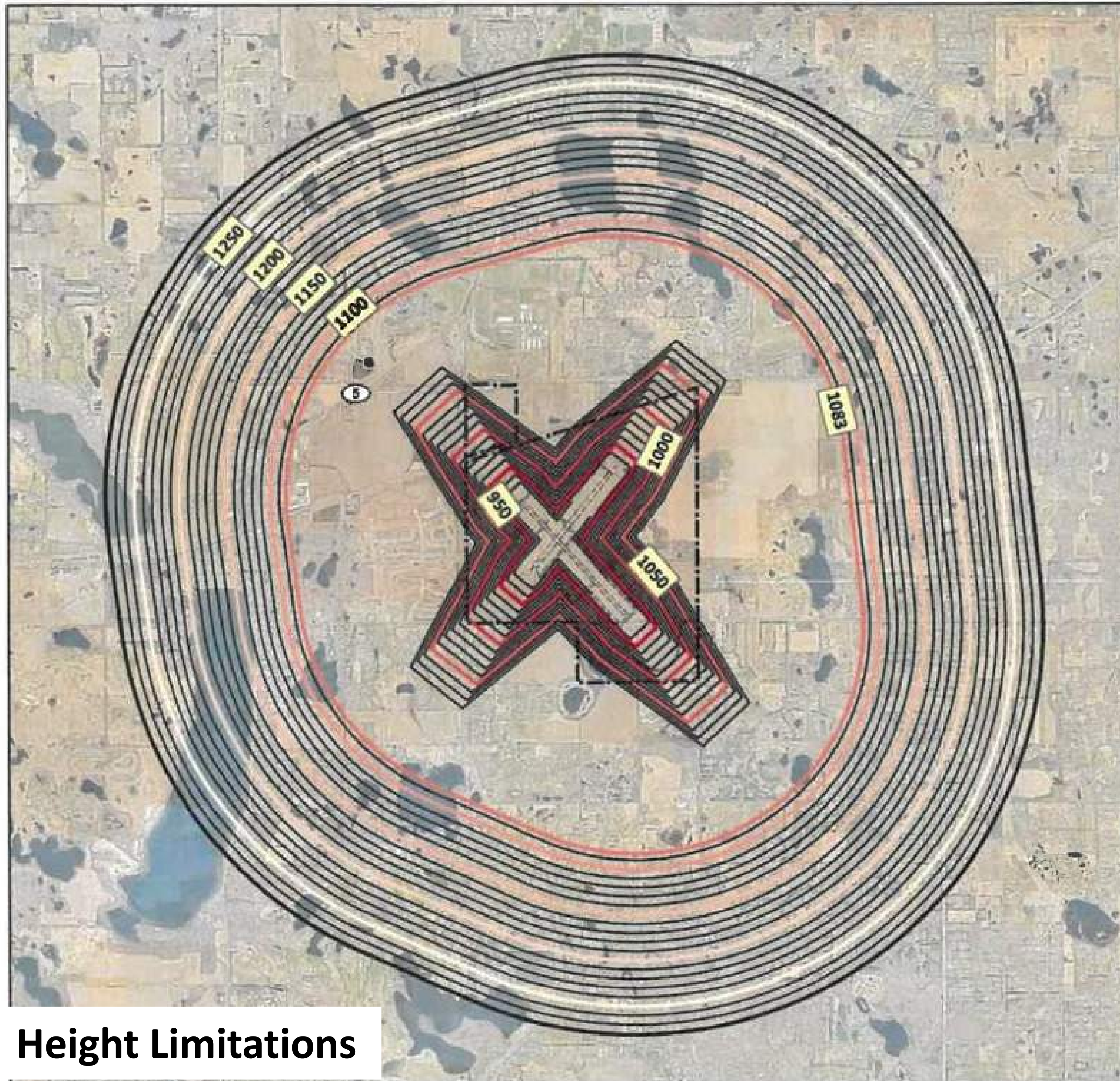
JAZB Final Safety Zones A & B

FCM Property Line Runway Protection Zones (RPZ) Zone A Zone B

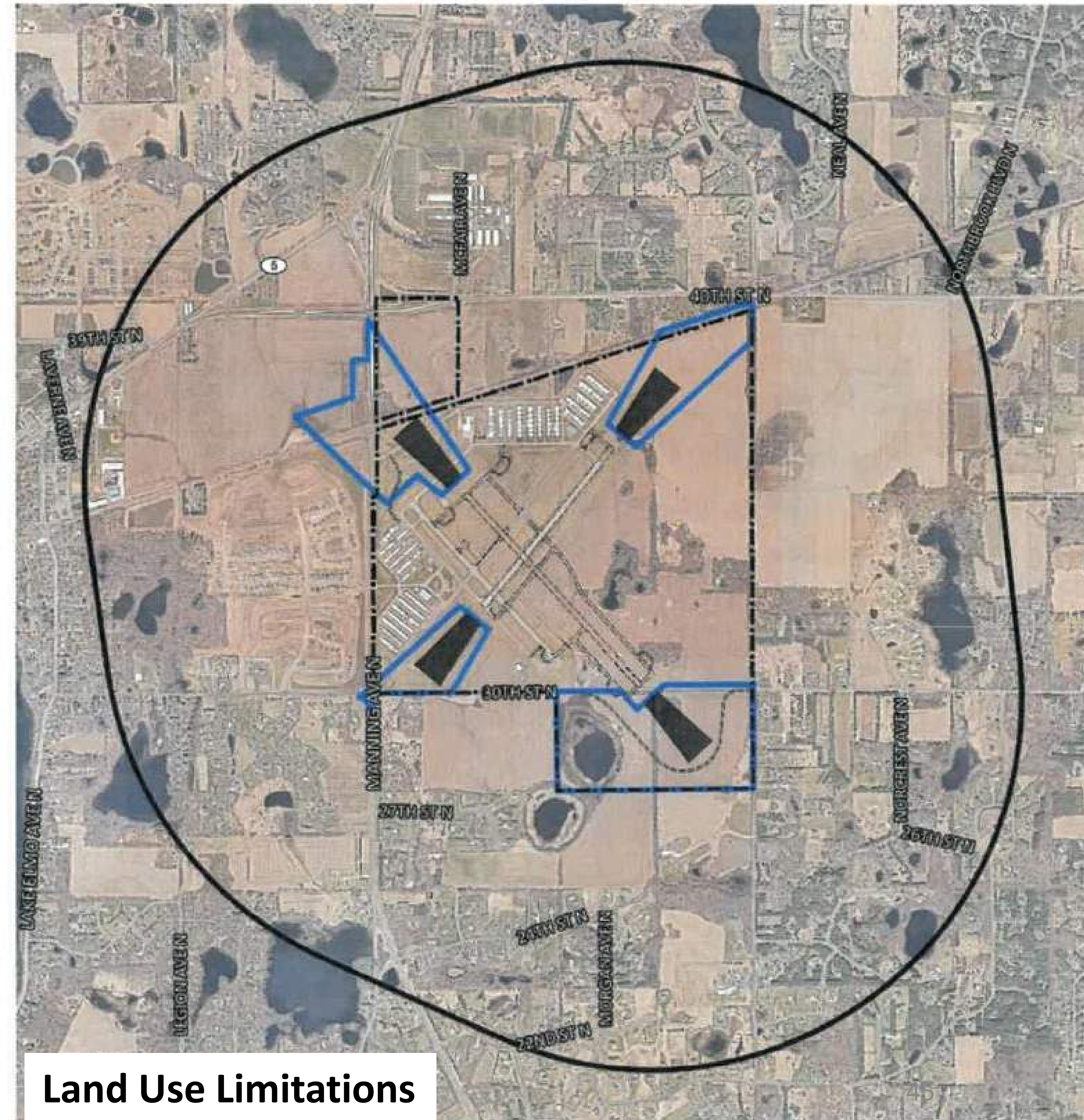
0 750 1,500 3,000
Feet



Lake Elmo Airport Zoning – Case Study



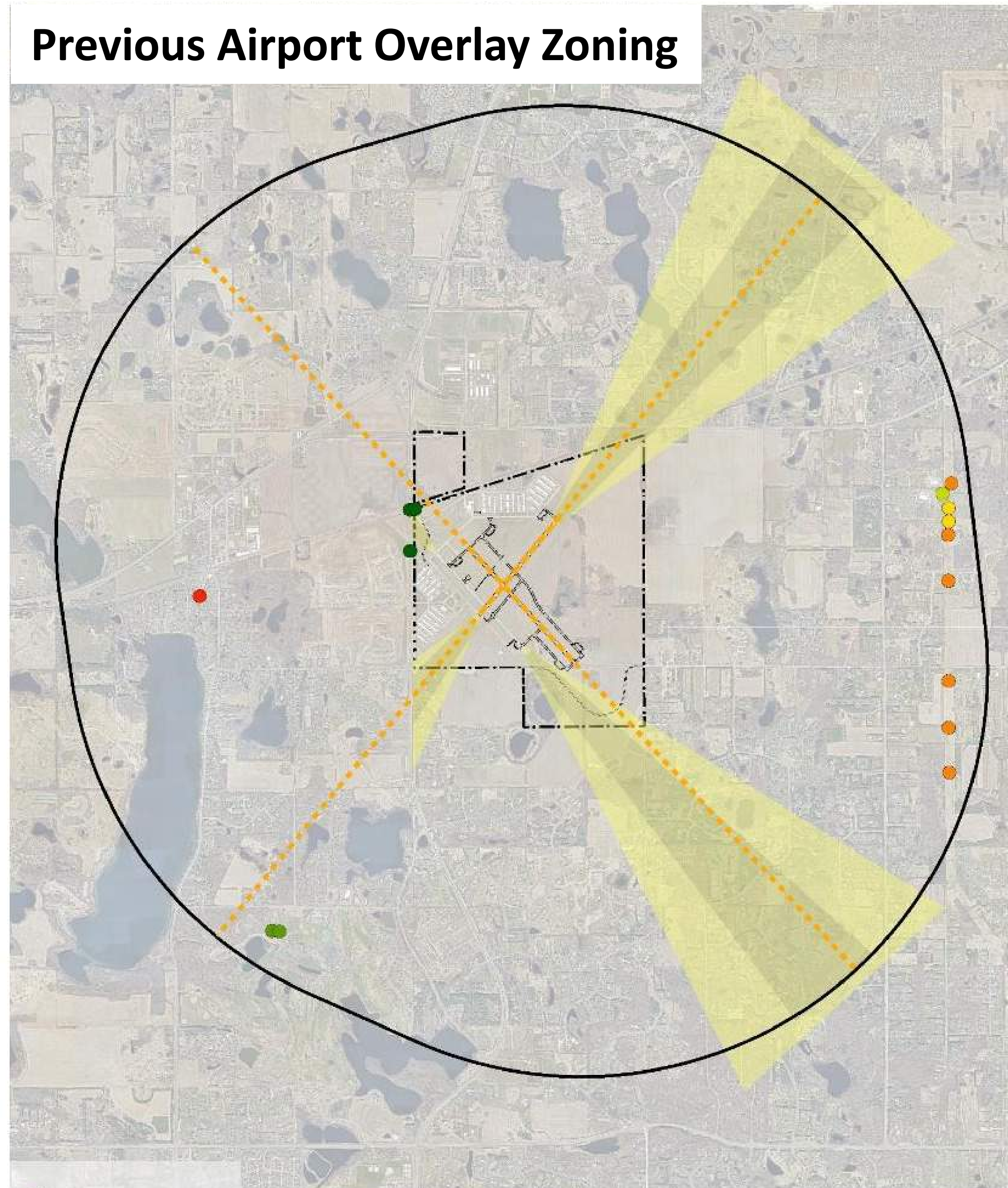
Height Limitations



Land Use Limitations

Lake Elmo Airport Zoning – Case Study

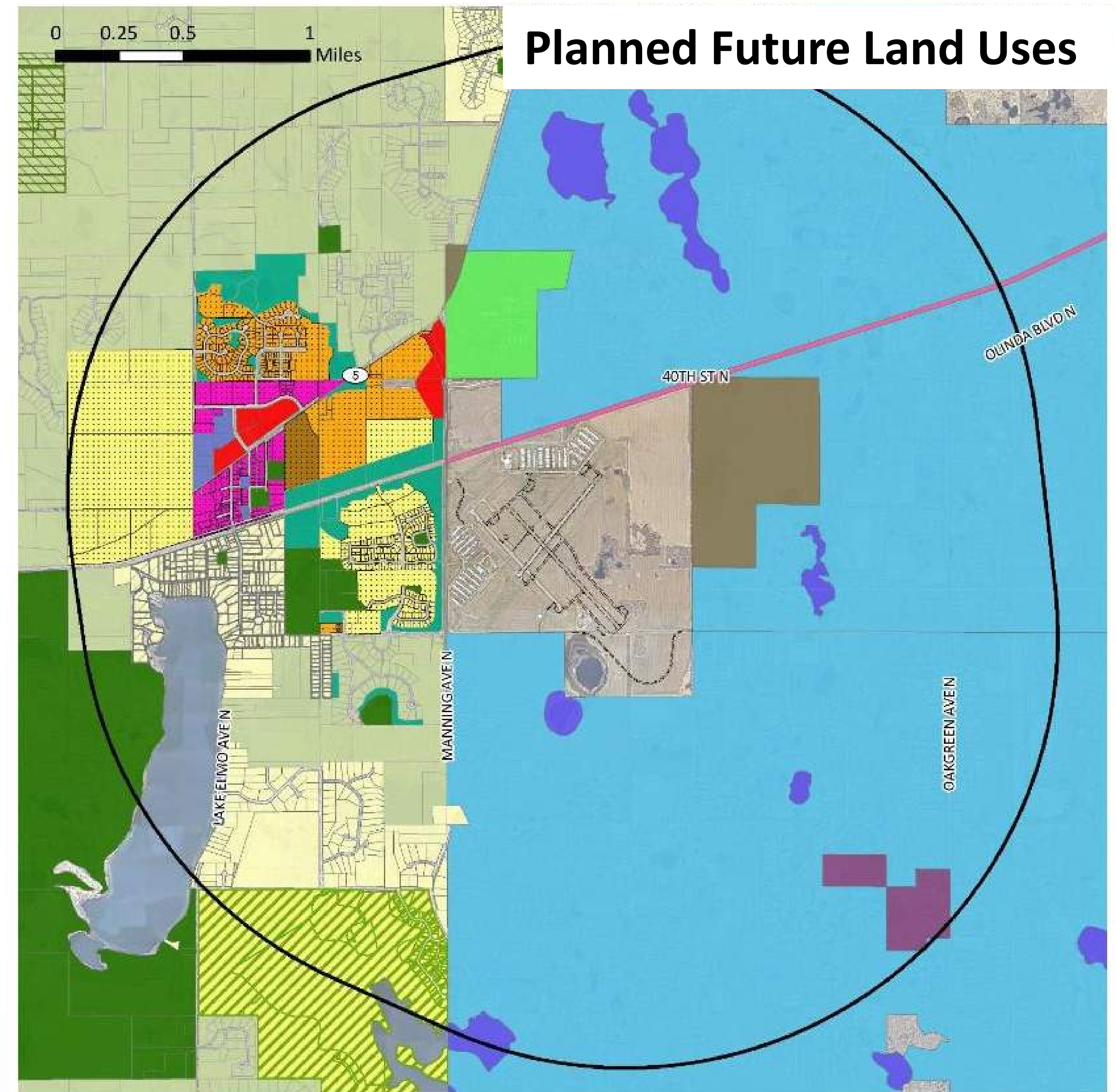
Previous Airport Overlay Zoning



- POLE - EXISTING OBSTRUCTION
- ANTENNA
- CELL TOWER
- POWER TRANSMISSION LINE
- POWER TRANSMISSION PYLON
- WATER TOWER
- Runway Centerline
- Overlay District/Airport Zone
- Overlay District/Qualified Land Use Zone
- Airport Hazard Area
- 21D Property

0 1,300 2,600 5,200 Feet

Planned Future Land Uses



Met Council Future Land Use

- Agricultural Preserve (1du per 40 acres)
- Open Water
- Public
- Railway
- Single Family Residential (1 unit per 2.5 acres or more)
- Undeveloped / Agriculture

Lake Elmo 2040 Future Land Use





- Commercial (C)
- Public / Semi-Public (PSP)
- Park
- Rural Area Development (RAD), .1 units per acre
- Right of Way (ROW)
- Rural Single Family (RSF), 0.1 - 2.0 units per acre
- Village Low Density Residential (V-LDR), 1.5 - 3.0 units per acre
- Village Medium Density Residential (V-MDR), 3.0 - 8.0 units per acre

Airport Vicinity Land Uses







Acres below reflect land uses in Commissioner Standard Zones

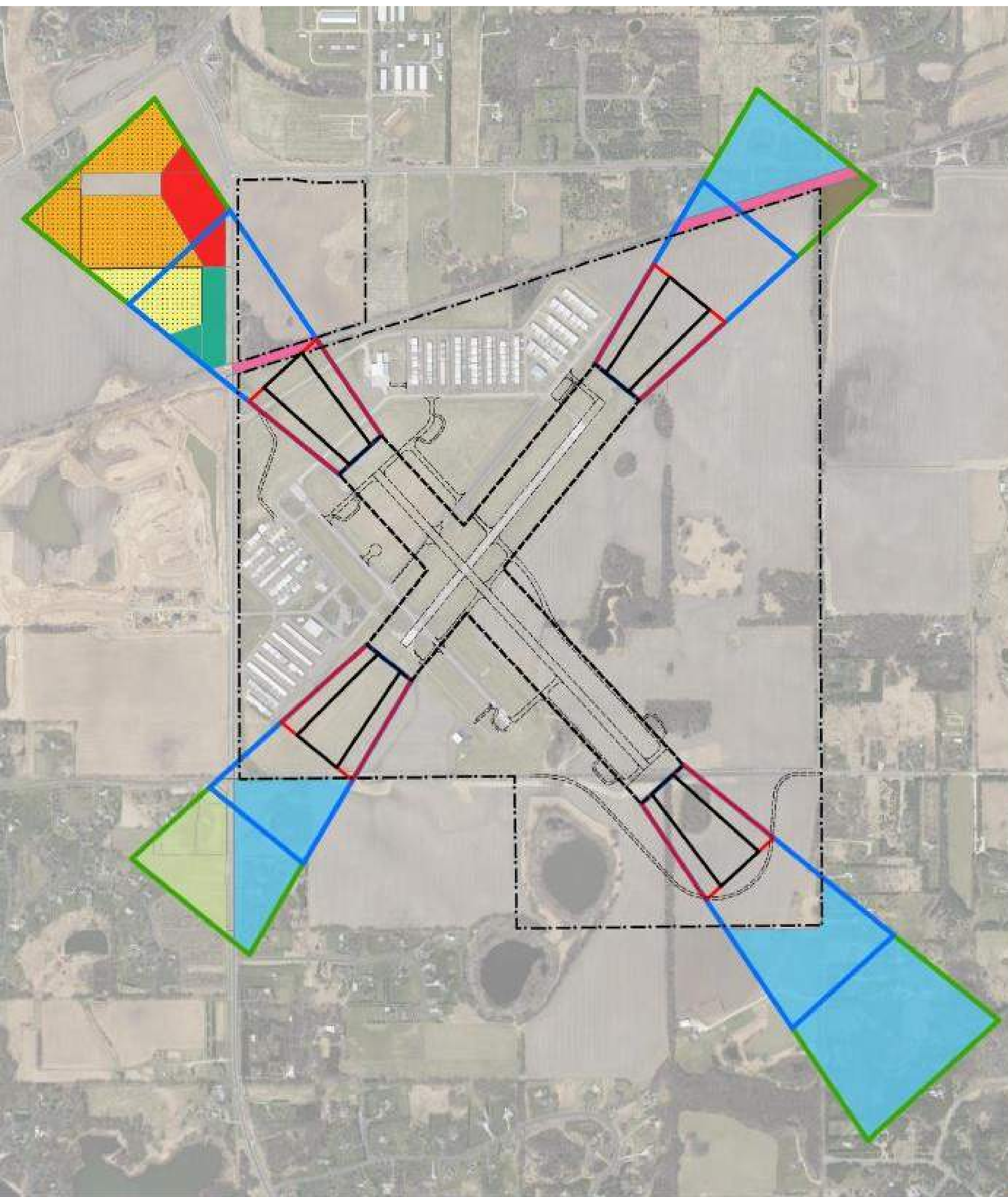
FUTURE LAND USE

Met Council Future Land Use

-  Agricultural, 4 unit per 40 acres, 2.8 acres
-  Public, 3.8 acres
-  Railway, 5.4 acres
-  Single Family Residential, 1 unit per 2.5 acres, 91.4 acres

Lake Elmo 2040 Future Land Use

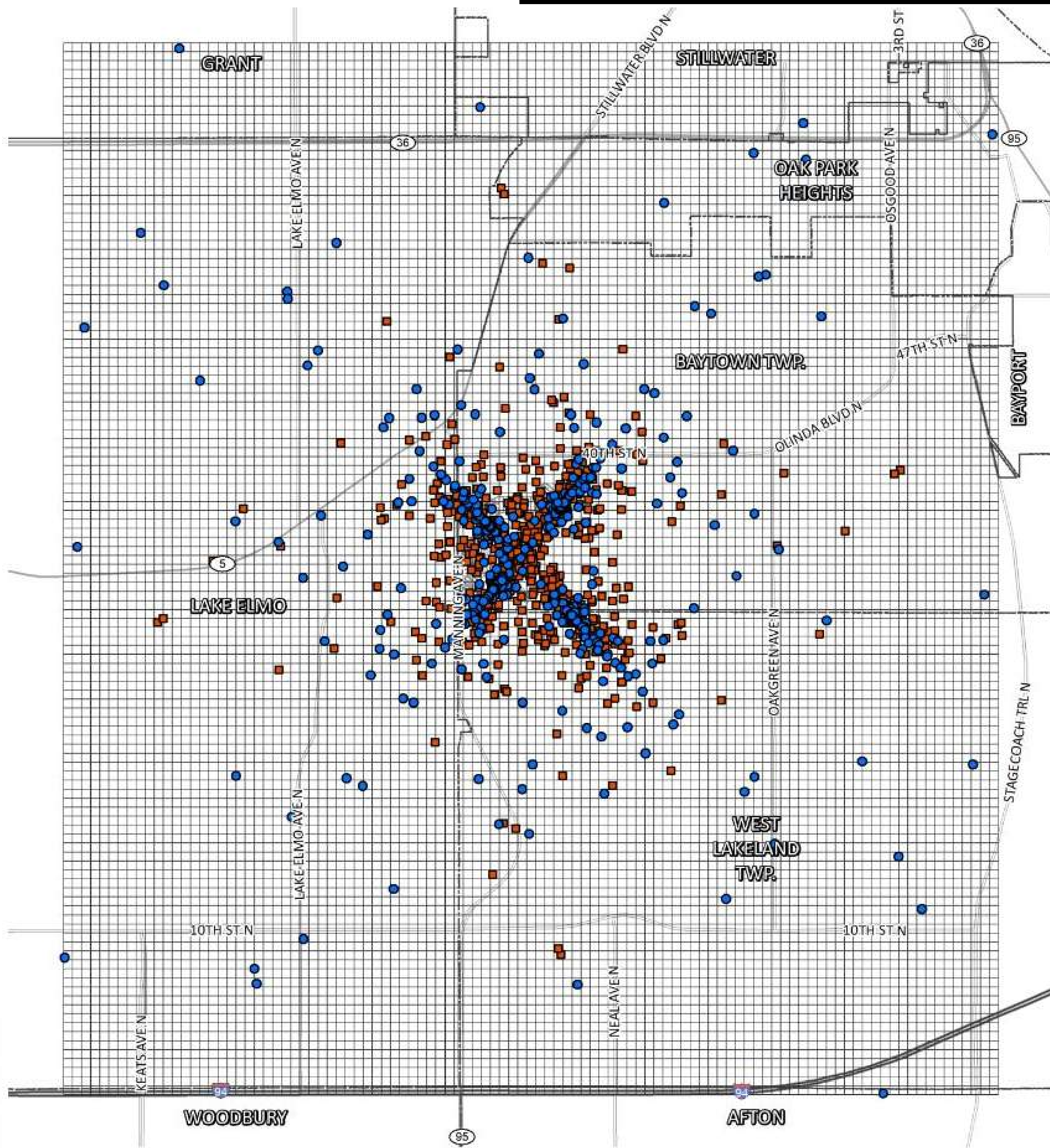
-  Commercial (C), 8.5 acres
-  Public / Semi-Public (PSP), 5.4 acres
-  Rural Area Development (RAD), .1 units per acre, 13.4 acres
-  Right of Way (ROW), 7.2 acres
-  Village Low Density Residential (V-LDR), 1.5 - 3.0 units per acre, 8.6 acres
-  Village Medium Density Residential (V-MDR), 3.0 - 8.0 units per acre, 25.1 acres



-  21D Property
-  MnDOT Clear Zone
-  Primary Surface
-  State Safety Zone A
-  RPZ
-  State Safety Zone B

0 500 1,000 2,000 Feet

Lake Elmo Airport Zoning – Case Study

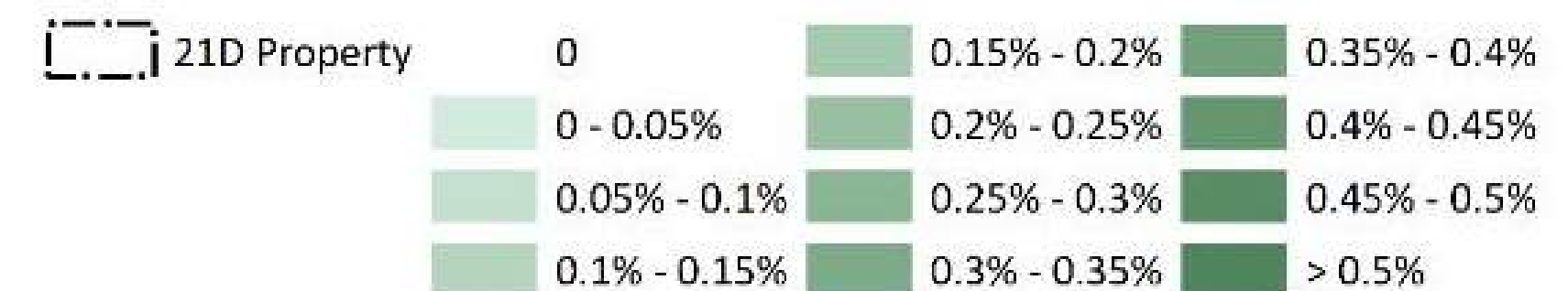
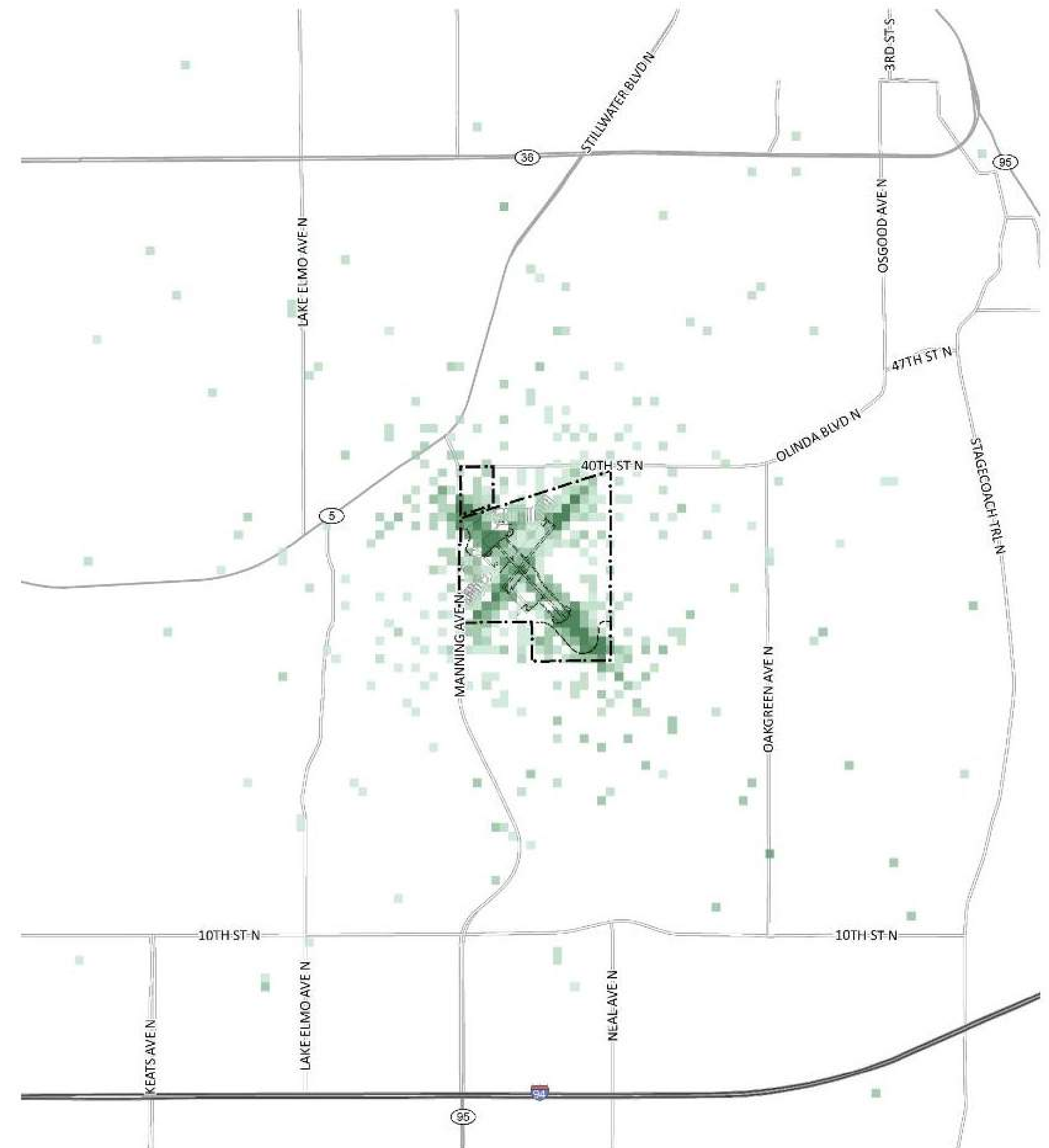


- Arrival Accident
- Departure Accident
- Accident Grid

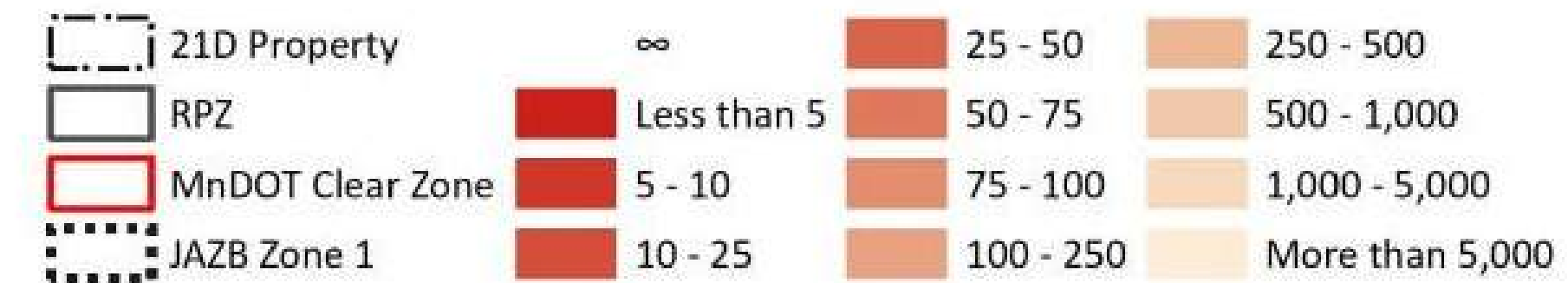
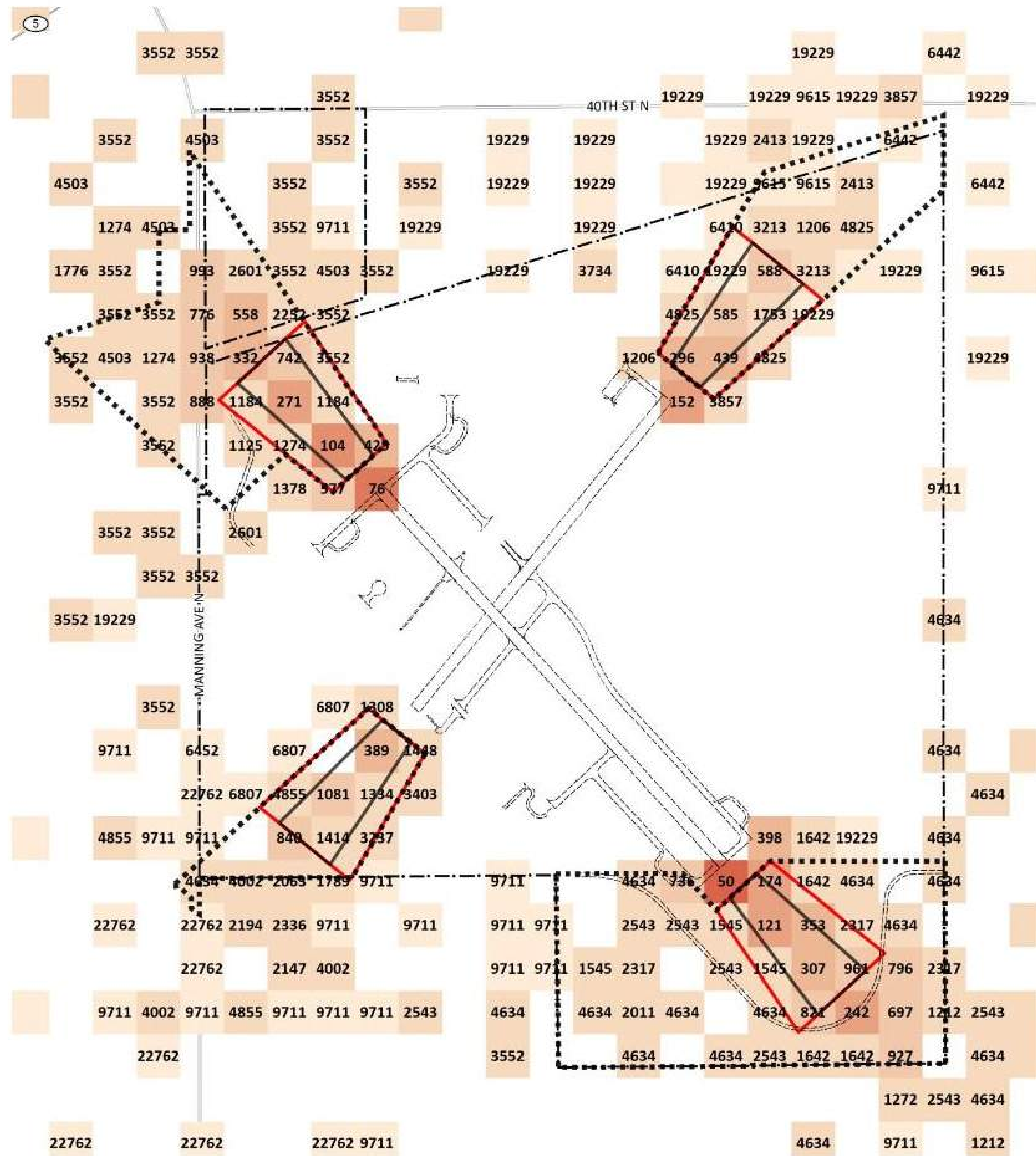
NOT ACTUAL LAKE ELMO AIRPORT ACCIDENT LOCATIONS



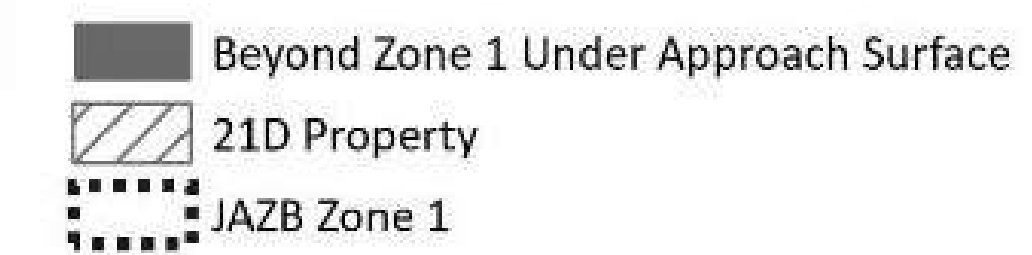
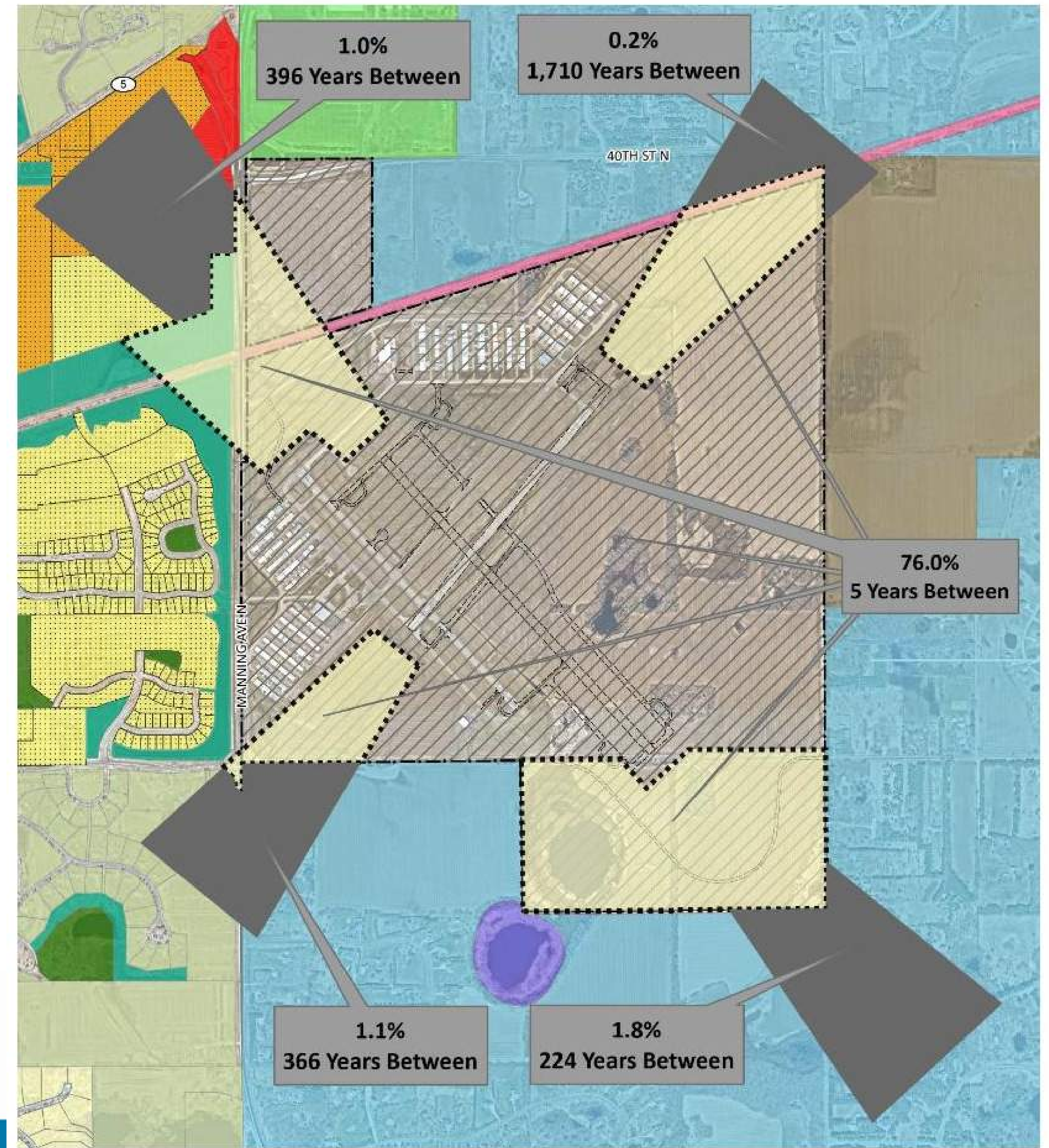
Safety Risk Study



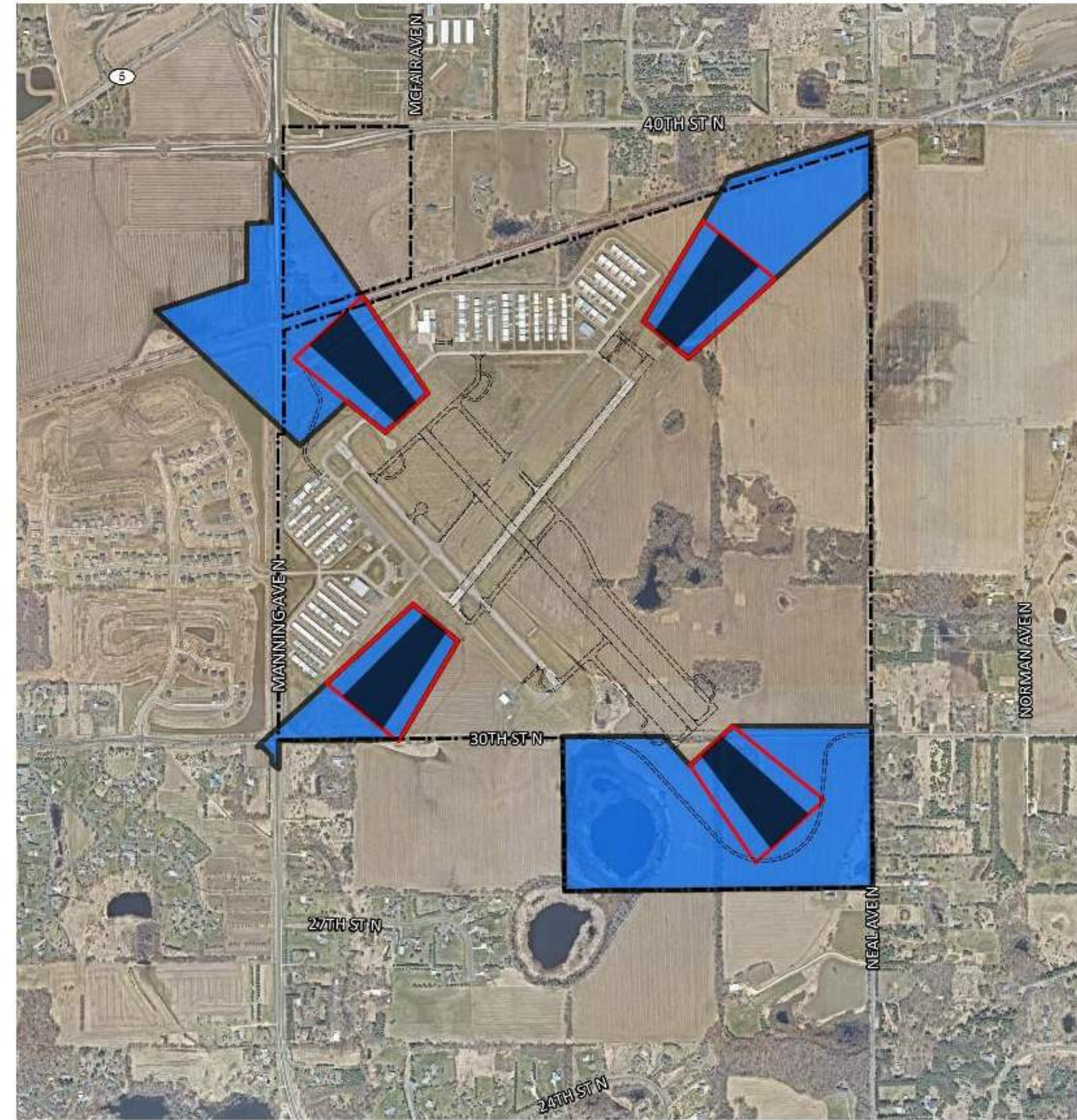
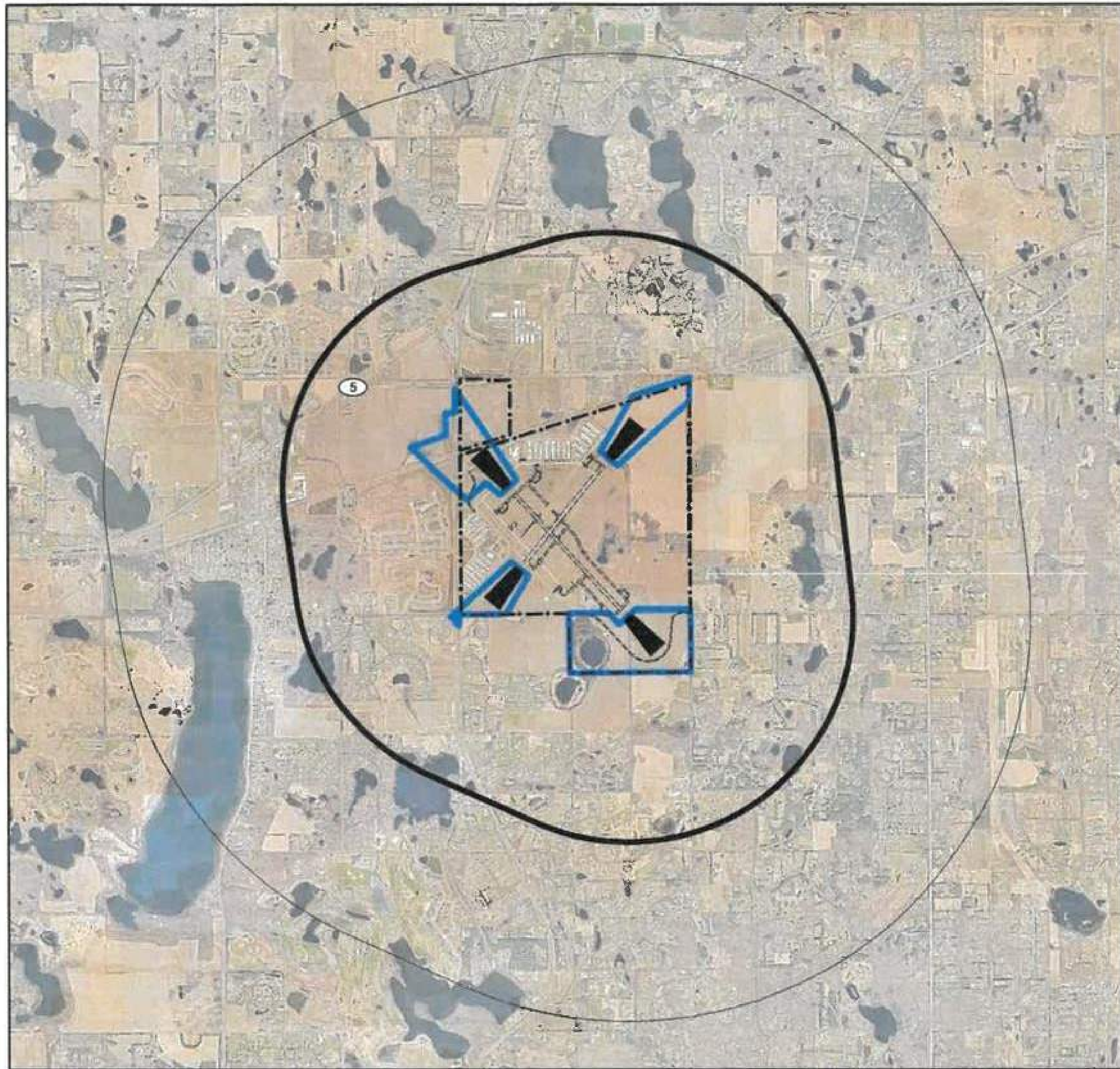
Lake Elmo Airport Zoning – Case Study



Safety Risk Study



Lake Elmo Airport Zoning – Case Study



**JAZB Final
Safety Zones 1 & 2**



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- **Discussion of Airport Zoning Liability**
- Determine Zoning Procedure
- Meeting Plan
- Public Comments
- Adjourn



Airport Zoning Liability

- DeCook v. Rochester International Airport Joint Zoning Board
 - Test: “When an airport ordinance regulates land use within runway safety zones, ‘there must be compensation to landowners whose property has suffered a substantial and measurable decline in market value as a result of the regulations.’”
- O’Neill, et al. v. Bloomington, et al.
- Revised Airport Zoning Law: Custom Zoning



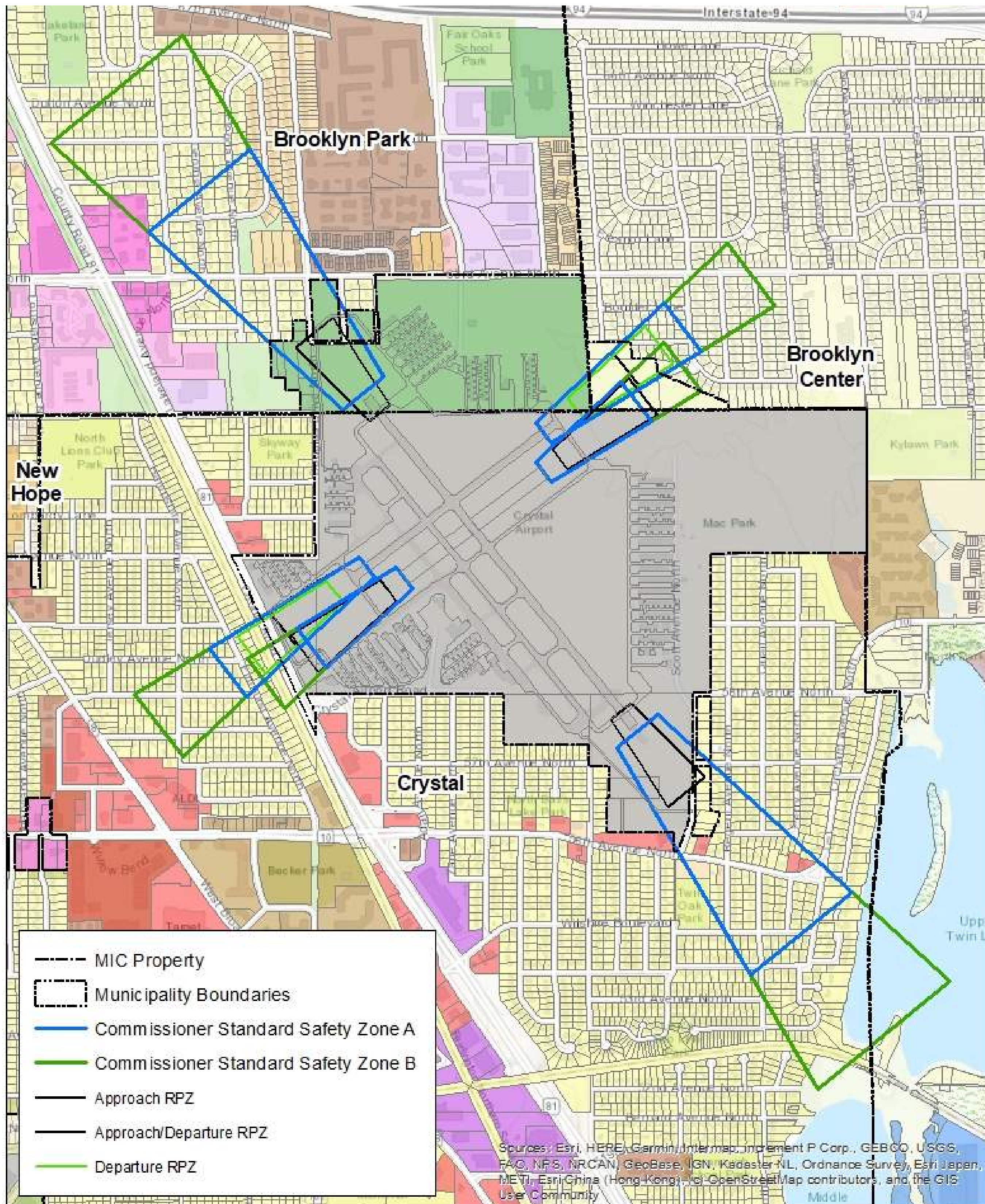
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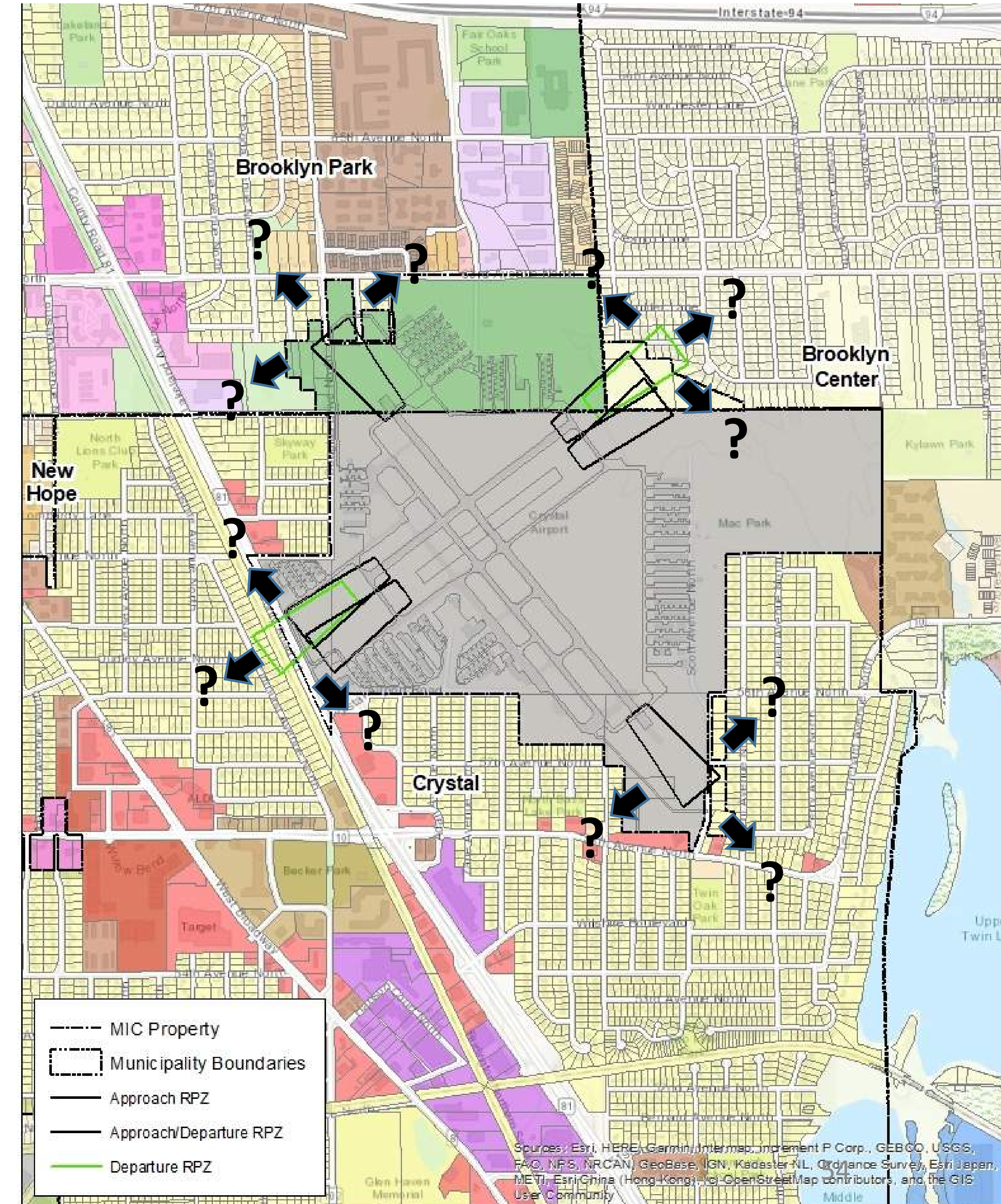


Commissioner Standard

Custom Starting Point



OR

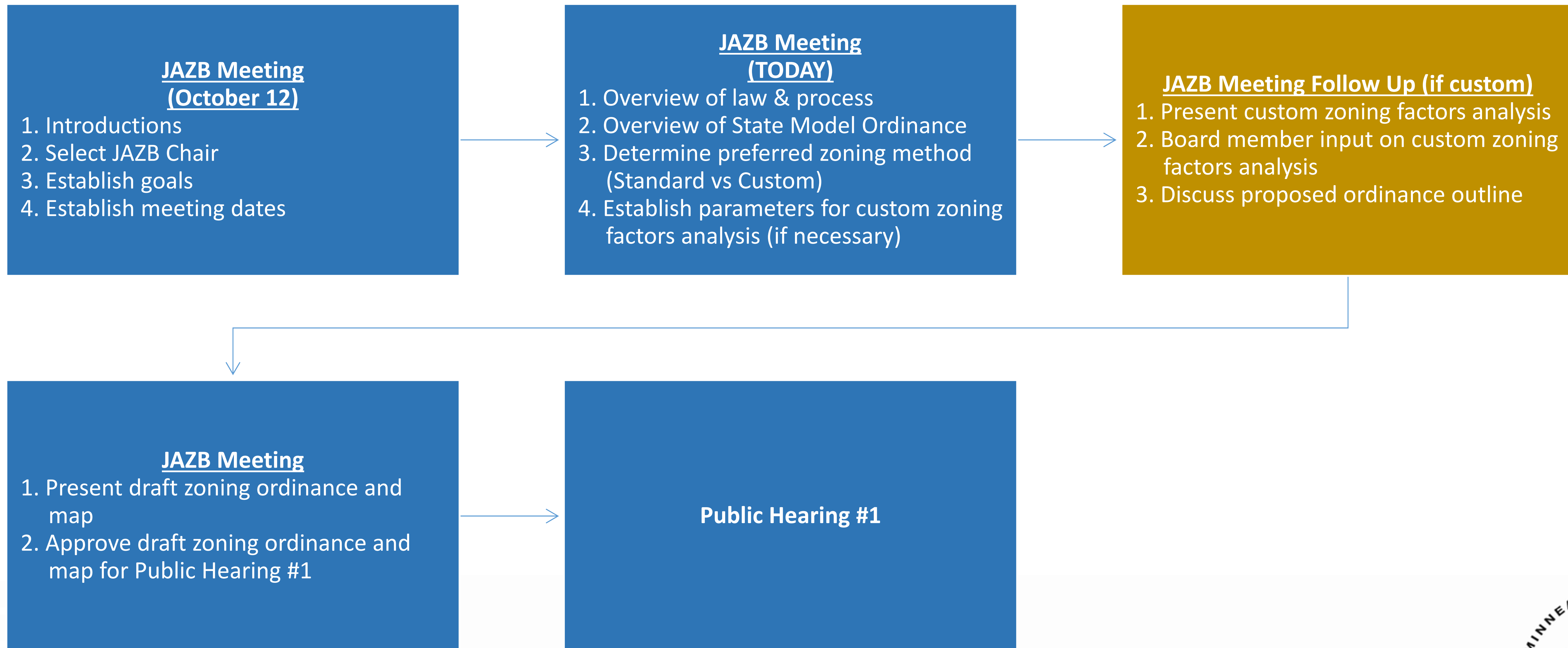


Agenda

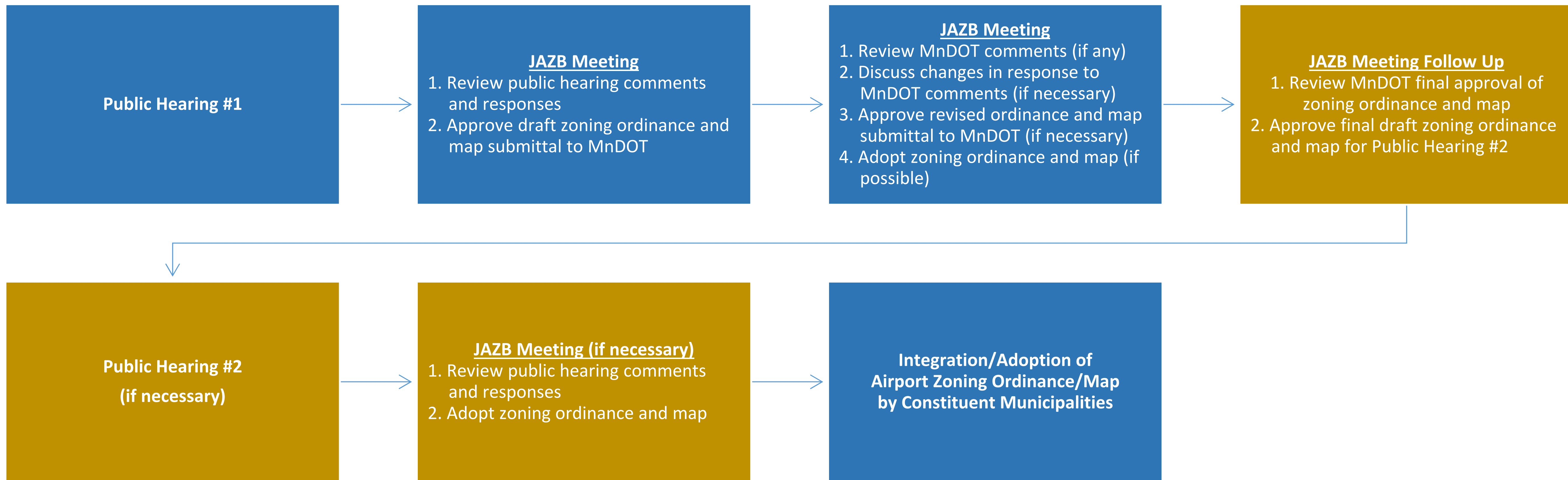
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Airport Zoning Procedural Steps



Airport Zoning Procedural Steps (continued)



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