

Airspace

Module 1

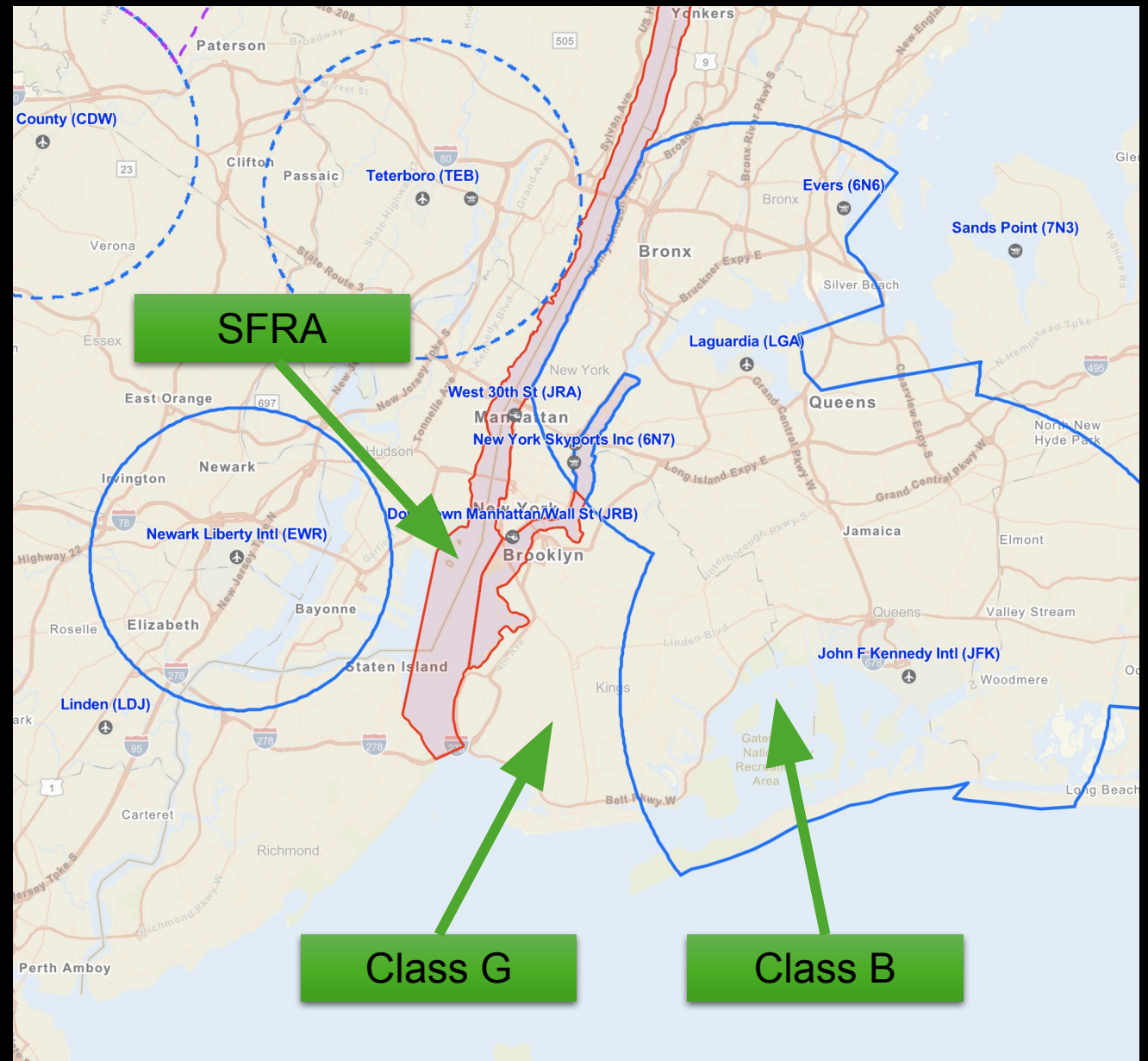
Ground Lesson 3

Lesson Objective

- The student shall gain knowledge of airspace in New York City, airports and heliports, and Temporary Flight Restrictions.
 - Types of airspace
 - UAS Facility Maps
 - Airports
 - Heliports and helicopter activity
 - TFRs

Types of airspace

What kind of airspace will operators encounter in New York City?



General Types of Airspace

- There are multiple categories of airspace

Controlled Airspace	Uncontrolled Airspace	Special Airspace
Term for airspace where Air Traffic Control service is provided to crewed aircraft	Term for airspace where Air Traffic Control service is not provided to crewed aircraft	Term for airspace where special activities occur and often unique limitations are imposed
• Class A • Class B • Class C • Class D • Class E	• Class G	• Special Flight Rules Areas • Prohibited Airspace • Restricted Airspace • National Security UAS Flight Restrictions
Generally surrounds airports	Fills all the gaps between airports	

Class B Airspace

- Class B airspace is a type of controlled airspace.
 - Generally surrounds the busiest airports in the US
 - Each Class B airspace is tailored to the airport's configuration
- A remote pilot must receive authorization from Air Traffic Control before operating in Class B airspace, we'll talk more about this soon.

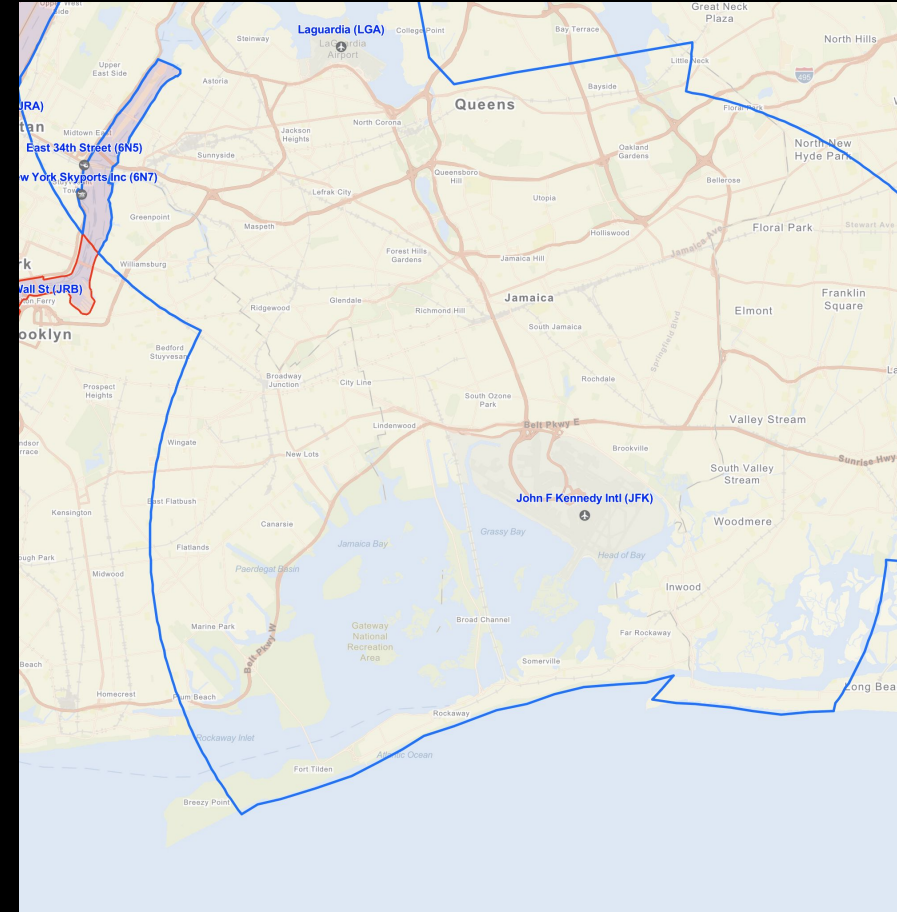
New York City Class B airspace

- Laguardia Airport (LGA)
- LGA Class B
 - Overlaps every borough except Staten Island
 - Joins the JFK Class B to the south



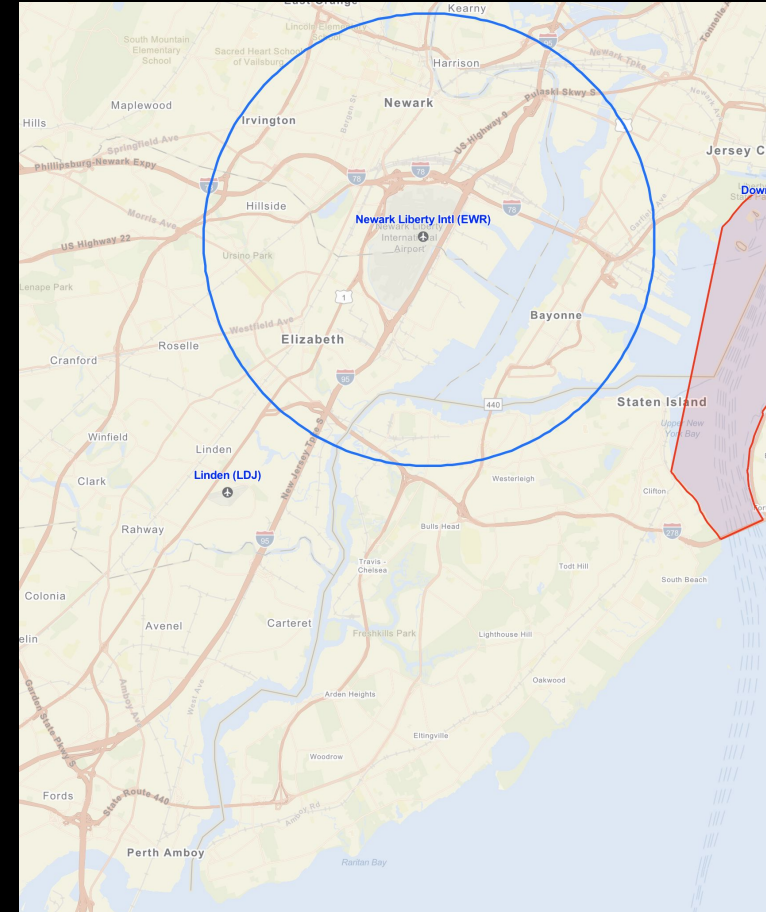
New York City Class B airspace

- John F Kennedy International Airport (JFK)
- JFK Class B
 - Primarily impacts Brooklyn and Queens



New York City Class B airspace

- Newark Liberty International Airport (EWR)
- EWR Class B
 - Small impact to Staten Island

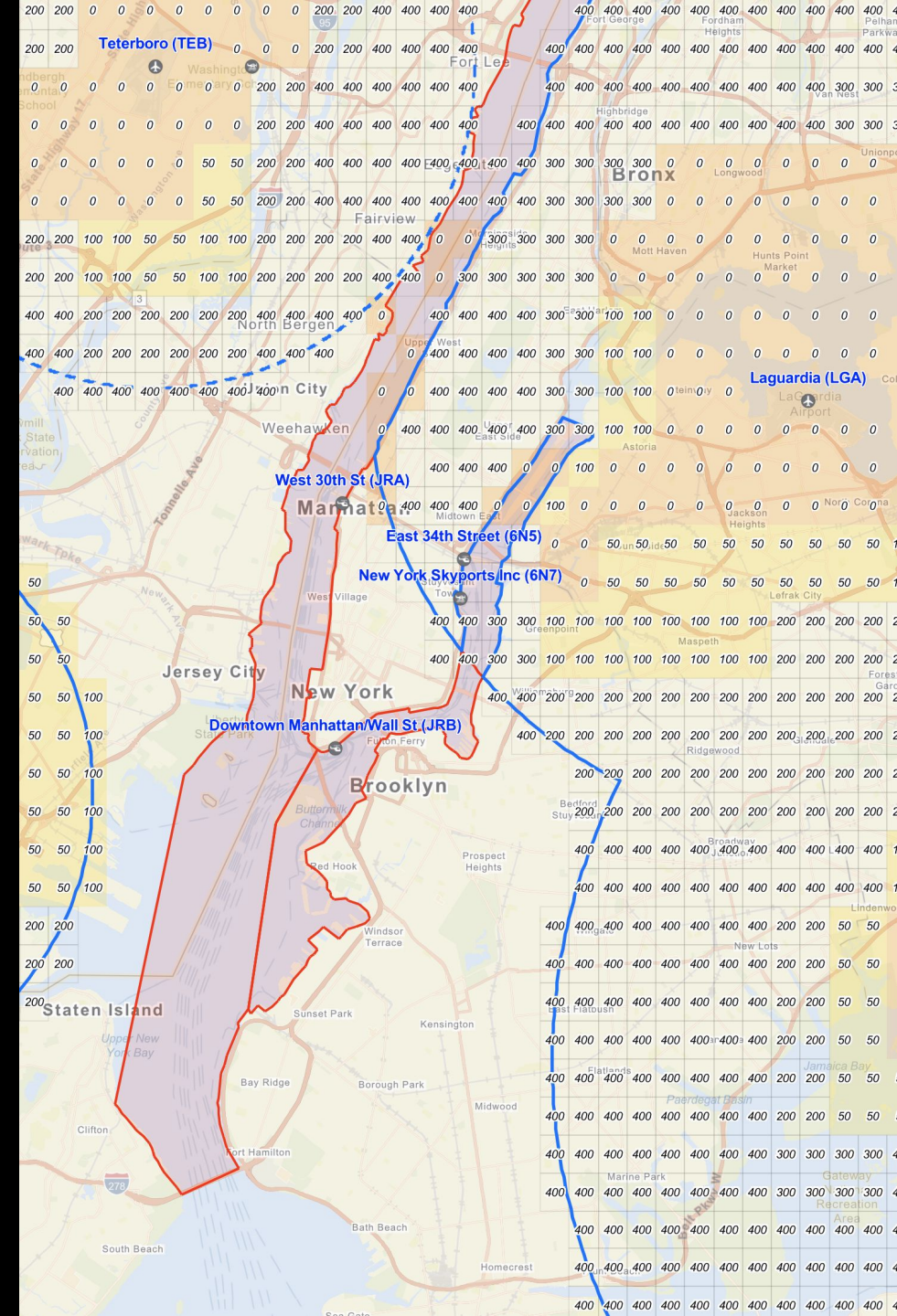


Class G Airspace

- The areas outside of the Class B airspace (outside the blue boundaries) is called Class G airspace
- Class G airspace is a type of uncontrolled airspace
 - A remote pilot does not need authorization to fly in Class G airspace

Special Use Airspace

- New York City has a “one of a kind” airspace feature called the Hudson River and East River Exclusion Special Flight Rules Area (SFRA)
 - Area in red to the right
- This airspace was created to safely manage a high number of low altitude helicopter operations



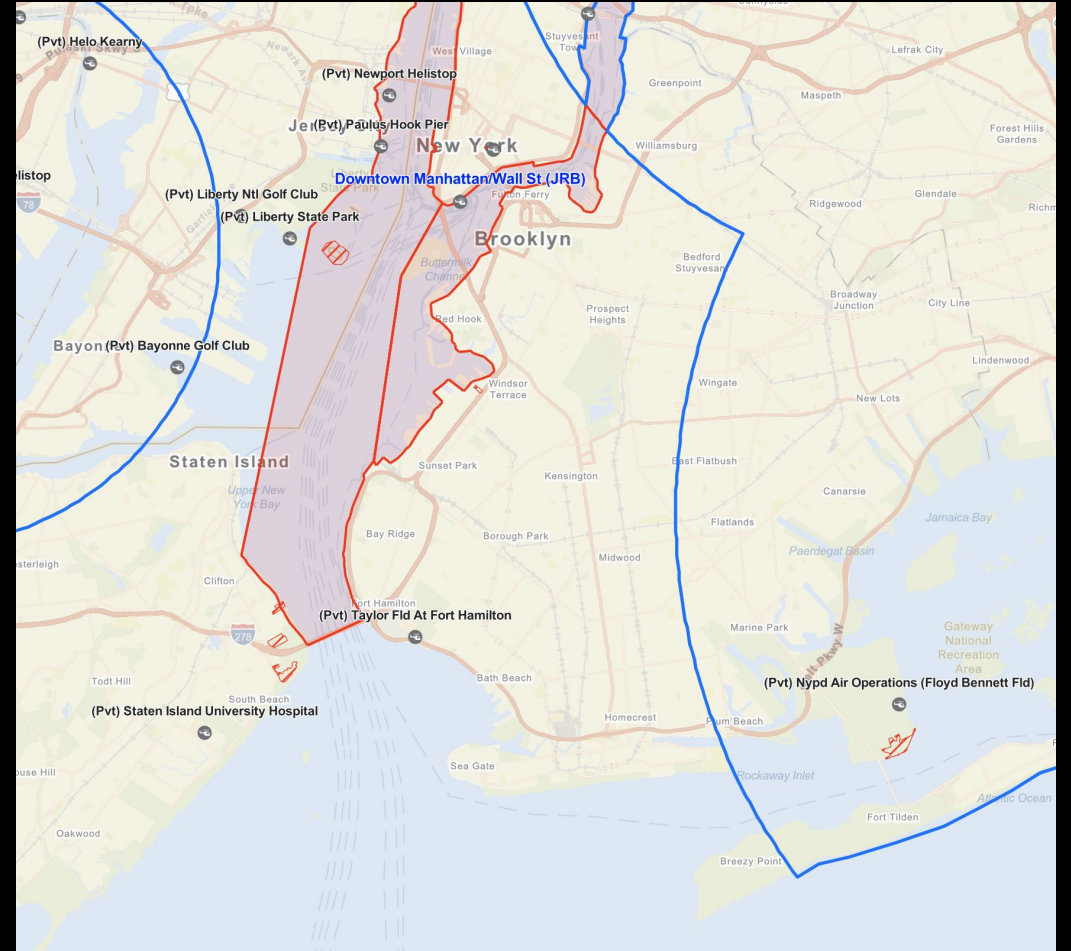
Helicopter Activity in the SFRA

- Expect helicopter traffic between 0 and 1000' MSL over the rivers
 - Air tours of Manhattan and the Statute of Liberty
 - Helicopter takeoff and departure at numerous helipads on the shores of Manhattan

Avoid drone operations over the rivers

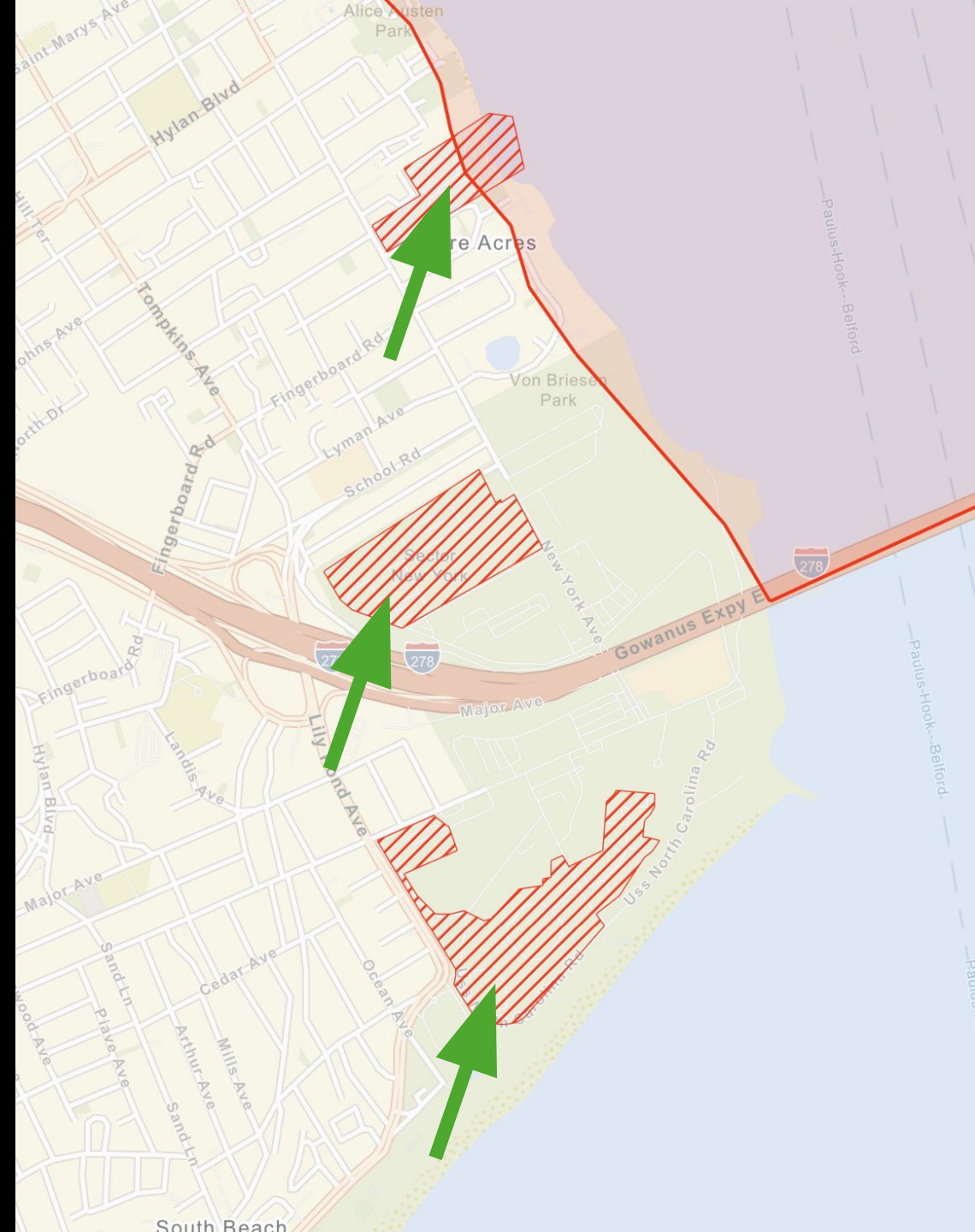
National Security UAS Flight Restrictions

- The FAA has implemented flight restrictions over sensitive facilities located throughout the U.S. at the request of DoD and US Federal security and intelligence agencies.
- The restrictions go from surface to 400' AGL and flights may not occur in these areas without additional authorization.

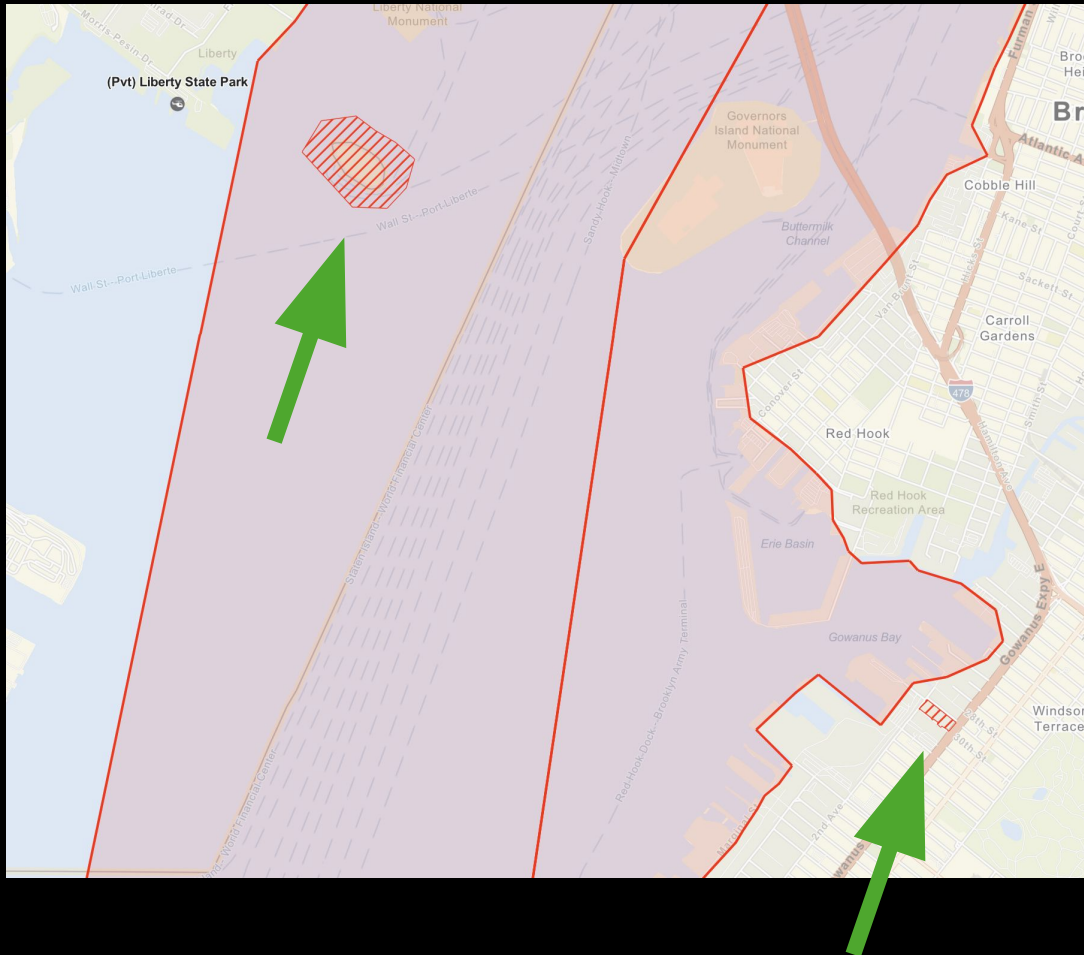


Coast Guard Facilities

- Restrictions in place over Coast Guard facilities on Staten Island side of the Verrazzano Bridge



Statute of Liberty



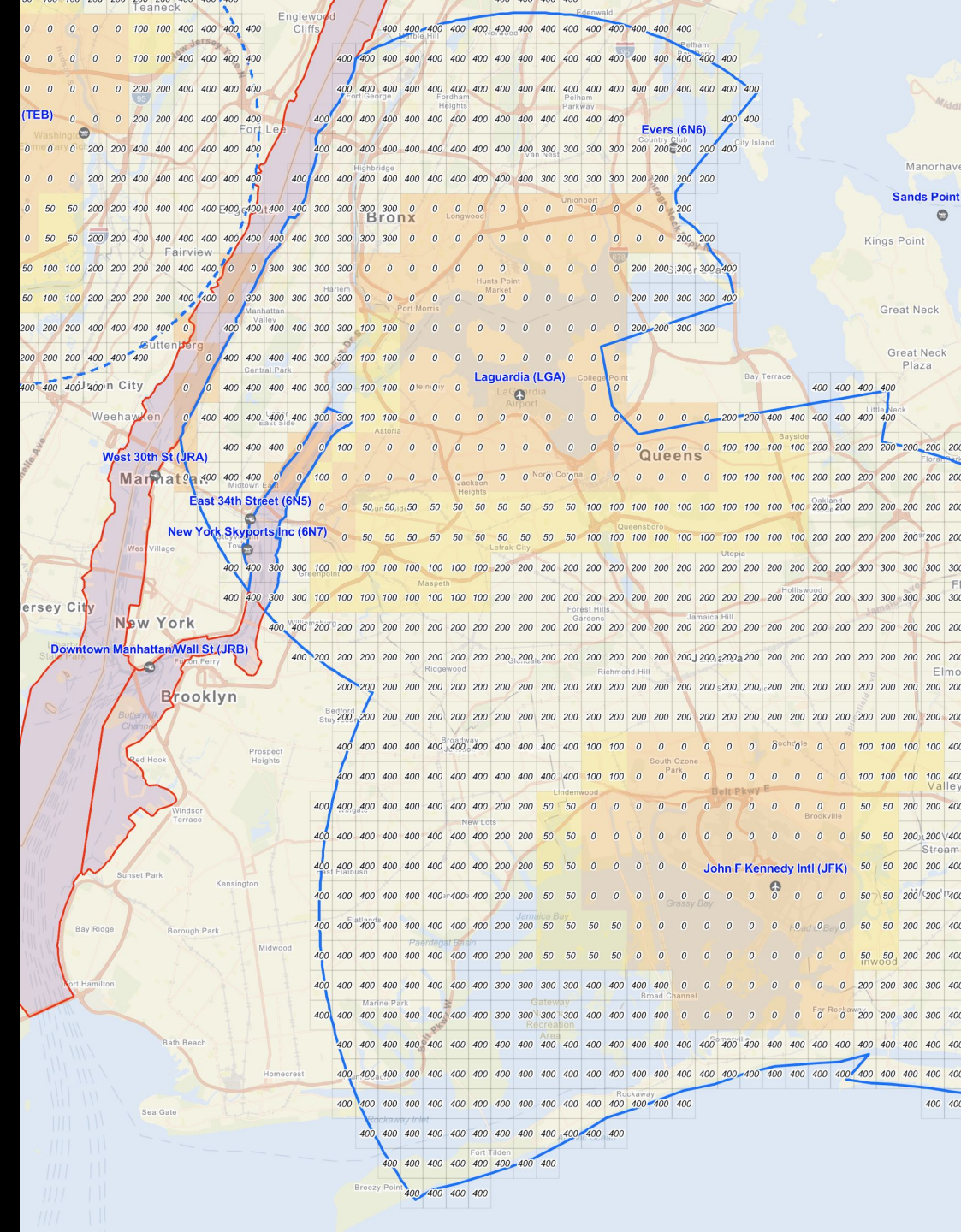
- Statue of Liberty is covered
- Prisons such as the MDC Brooklyn Prison

Airspace can change

- Include airspace reviews as part of your preflight procedures, as airspace can change!

UAS Facility Maps

When operating in controlled airspace of LGA, JFK, EWR



UAS Facility Map Overview

- UAS Facility Maps show the maximum altitudes around airports (in controlled airspace) where the FAA may authorize UAS operations without additional safety analysis.
- Recall that operations in Class B airspace require authorization from Air Traffic Control
 - Waiver {REF NUMBER} authorizes flight in Class B airspace up to the UAS Facility Map altitude. No additional authorization or ATC notification required

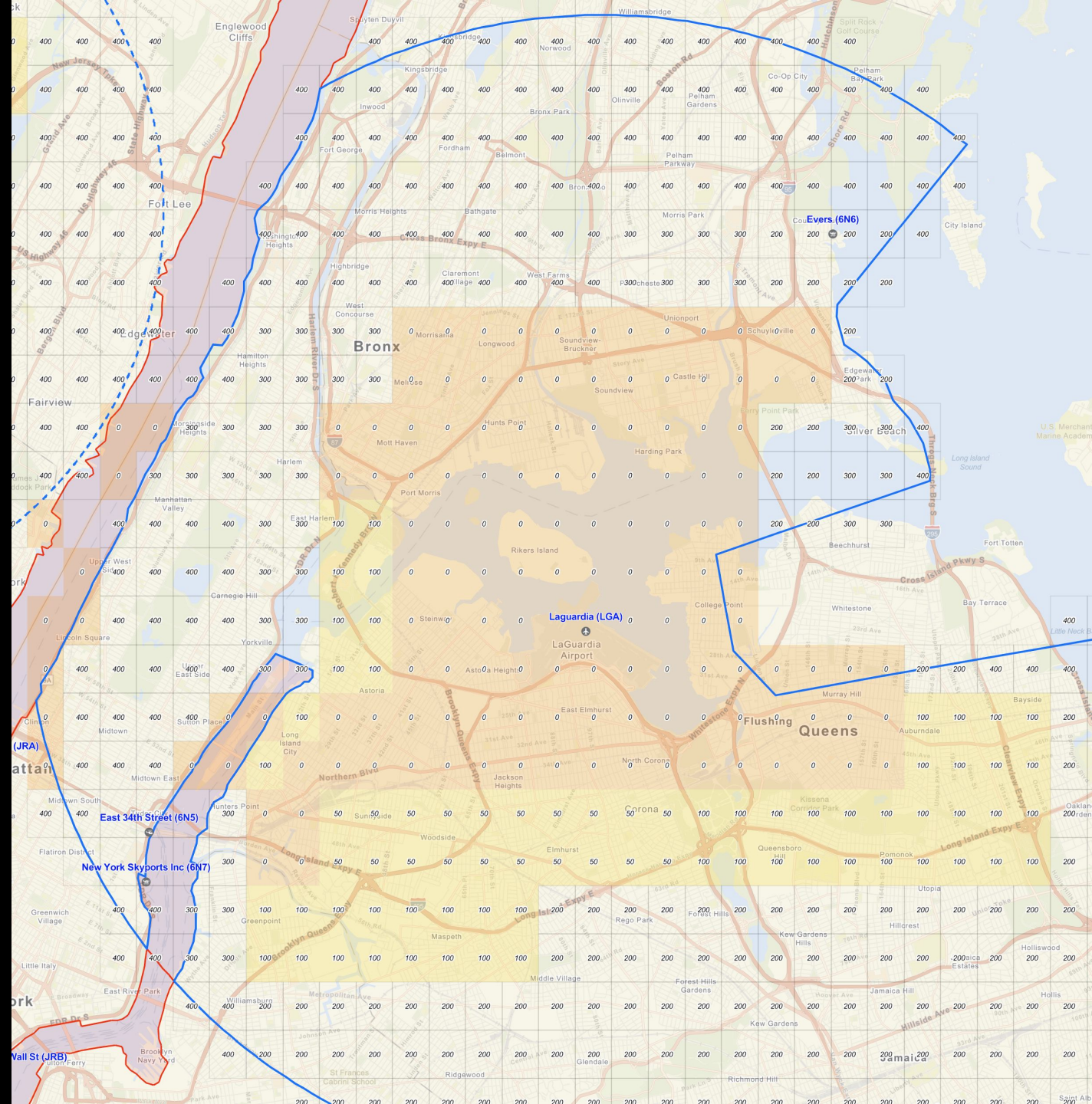
Let's look at some examples

Laguardia Class B

- The FAA publishes a grid for each airport / controlled airspace
 - In each grid is a number
 - This number represents the maximum altitude **above ground level** that is permitted in that grid

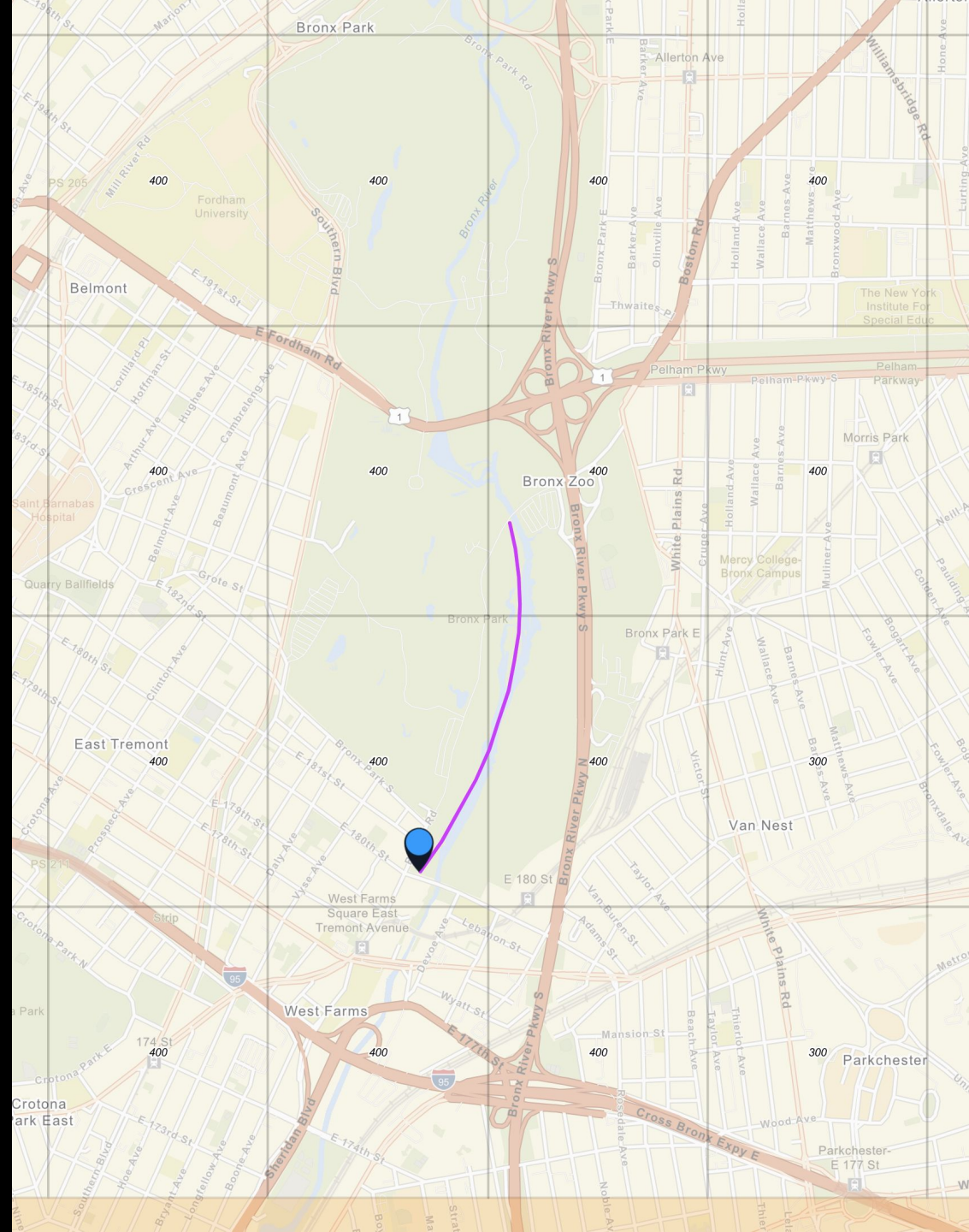
FAA UAS Visualize It:

<https://www.arcgis.com/apps/webappviewer/index.html?id=9c2e4406710048e19806ebf6a06754ad>



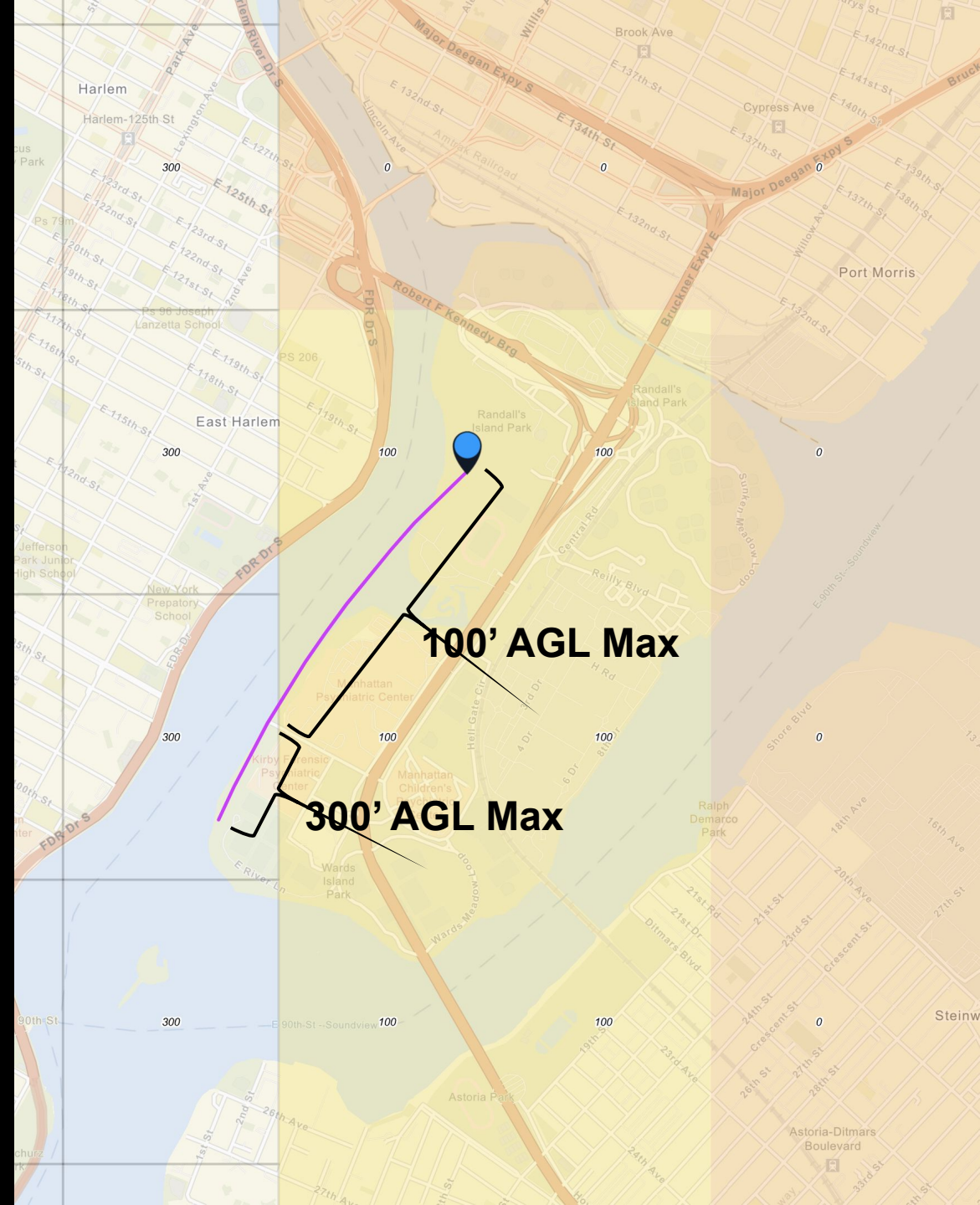
Example #1

- Flight starts at the blue pin and goes out and back along the magenta line
- Per waiver {REF NUMBER}
 - VLOS flights are allowed up to 400' AGL (number in the grids)
 - BVLOS flight is allowed up to 200' AGL
 - Or within 100' of an obstruction up to a maximum of 400' AGL



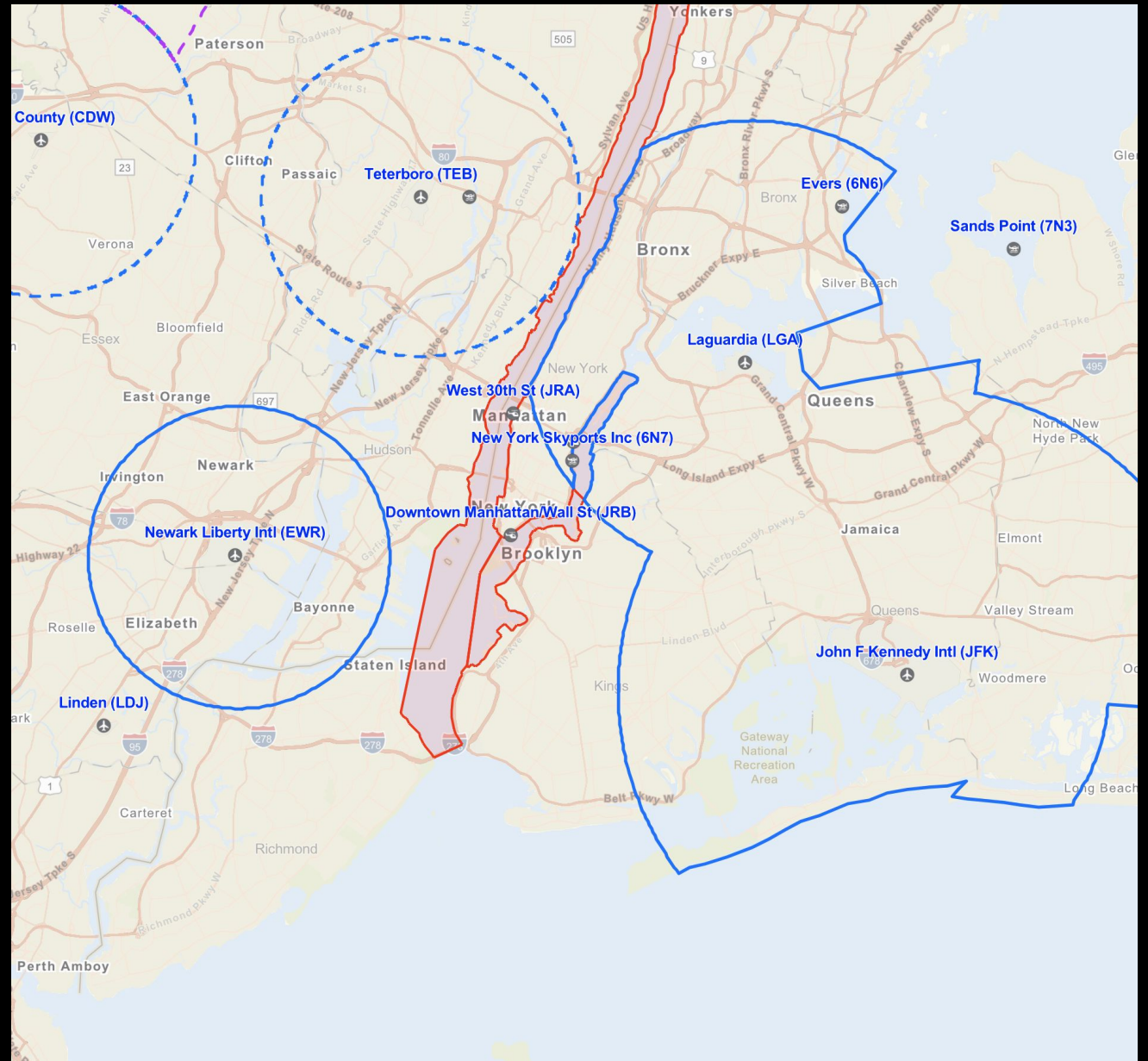
Example #2

- Flight starts at the blue pin and goes out and back along the magenta line
- Per waiver {REF NUMBER}
 - VLOS flights are allowed up to 100' AGL in the yellow shaded area and 300' AGL at the end
 - BVLOS flight is allowed up to 100' AGL in the yellow shaded area and 200' AGL at the end



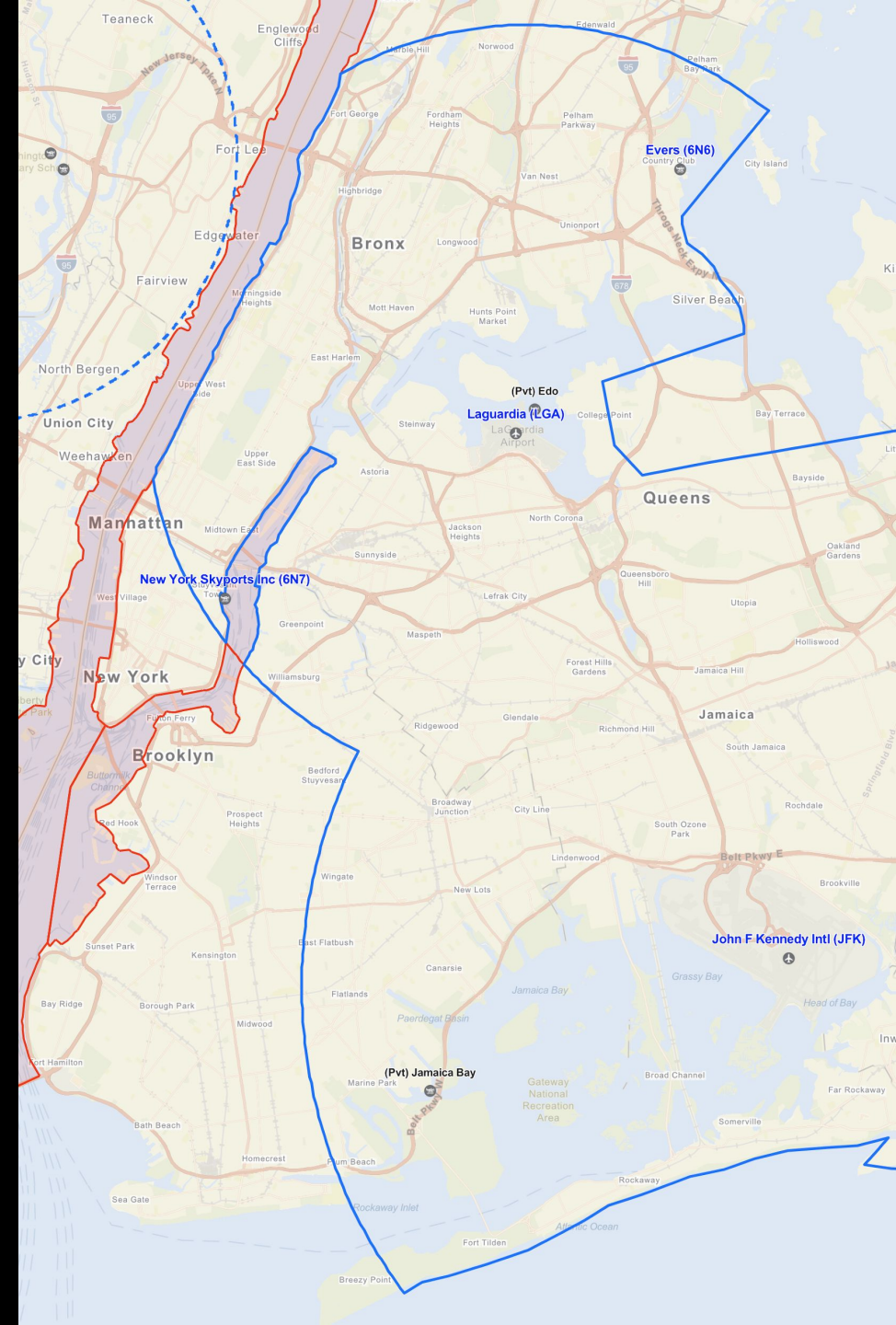
Other airports and heliports

There are other airports and heliports to consider besides the big 3 (LGA, JFK, EW)



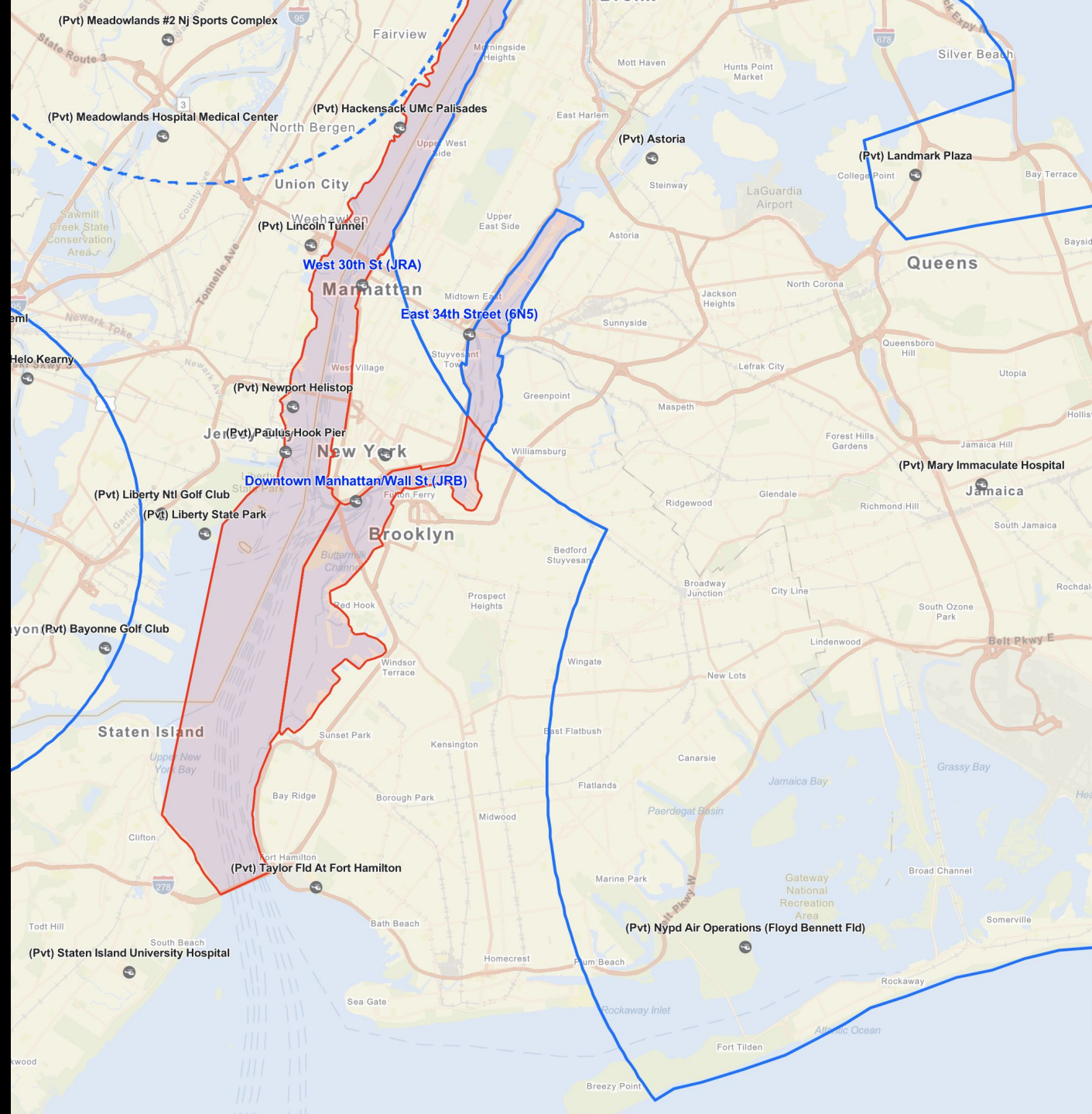
Airports

- 2 seaports to be mindful of:
 - Evers (6N6)
 - New York Skyports Inc (6N7)
- Edo and Jamaica Bay are also shown but are privately owned and closed to the public



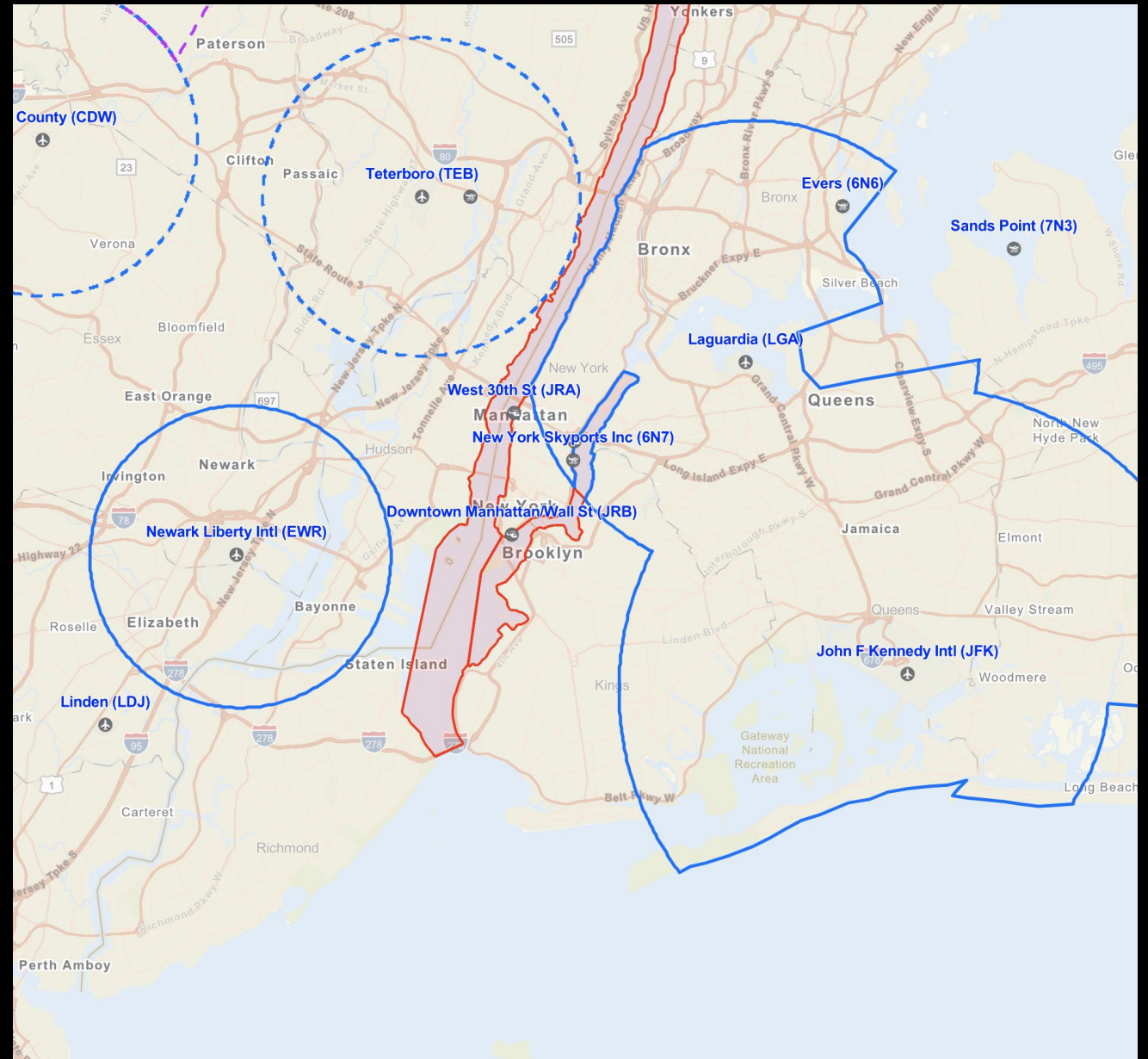
Heliports

- Numerous heliports to be mindful of:
 - NYPD Air Operations at Floyd Bennett Field
 - Heliports along Hudson and East River
 - 2 hospitals
 - Staten Island University Hospital
 - Mary Immaculate Hospital

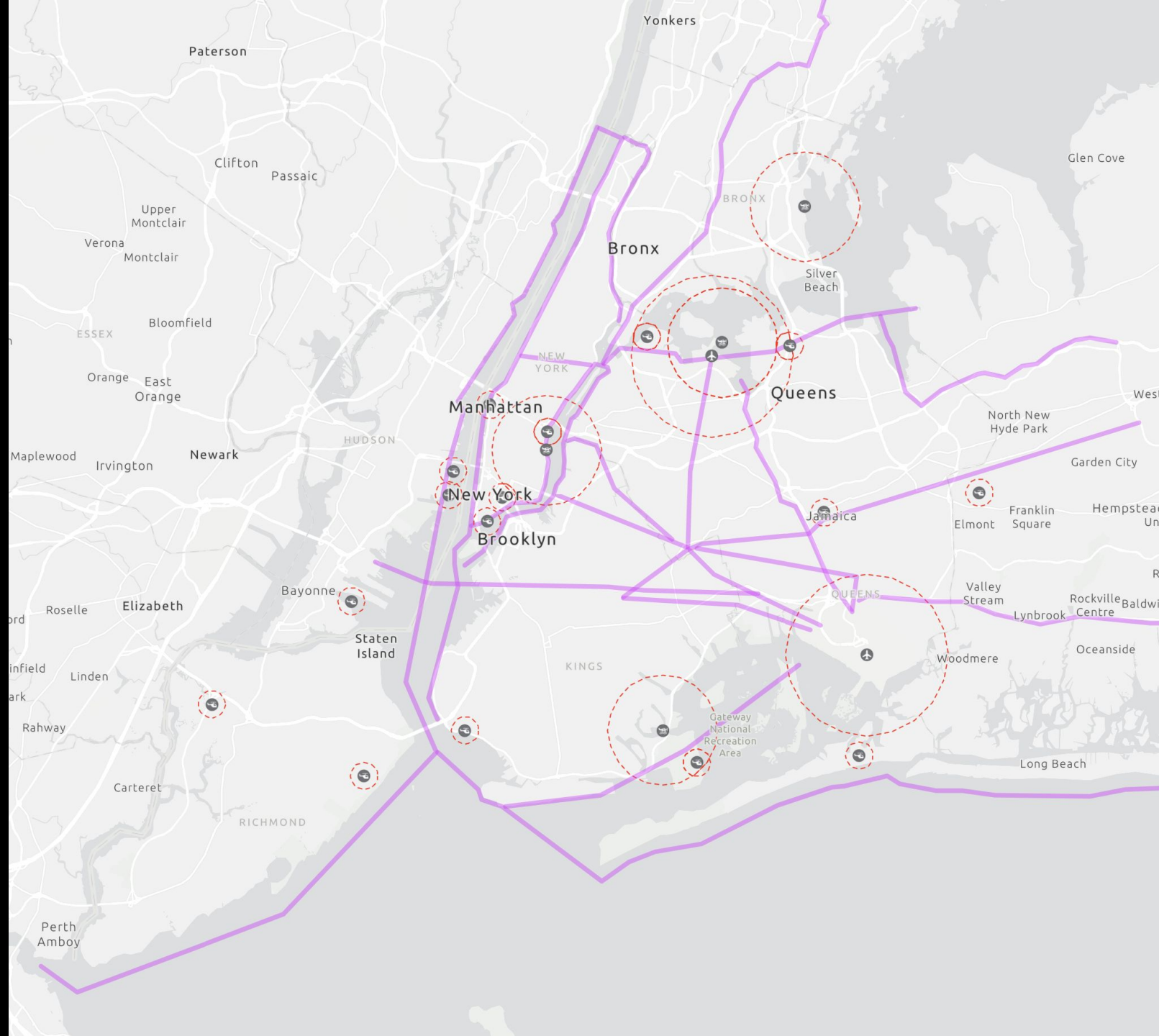


Likely areas of low flying aircraft

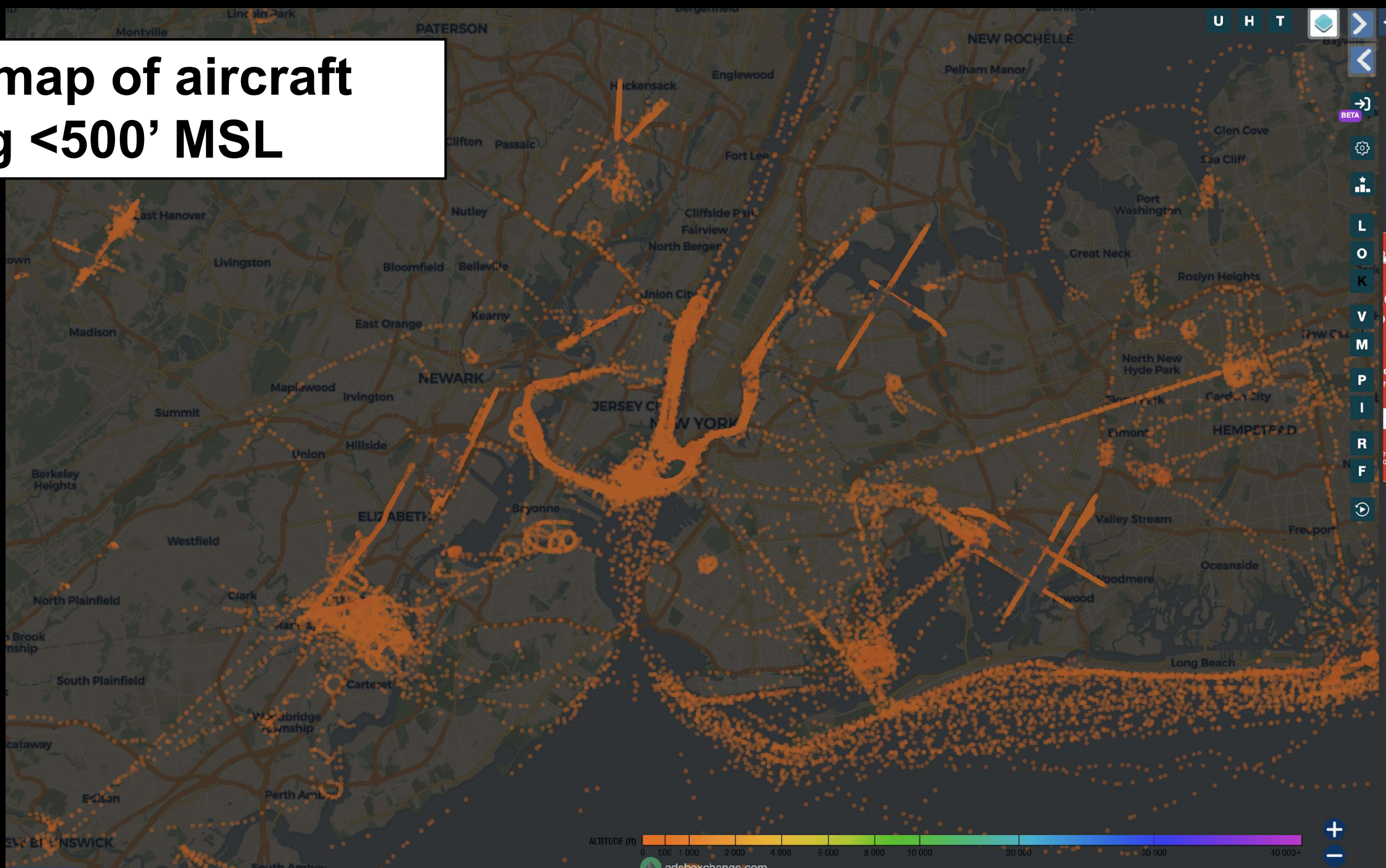
Airports, heliports, and helicopter routes



The following areas are more likely to have low flying aircraft

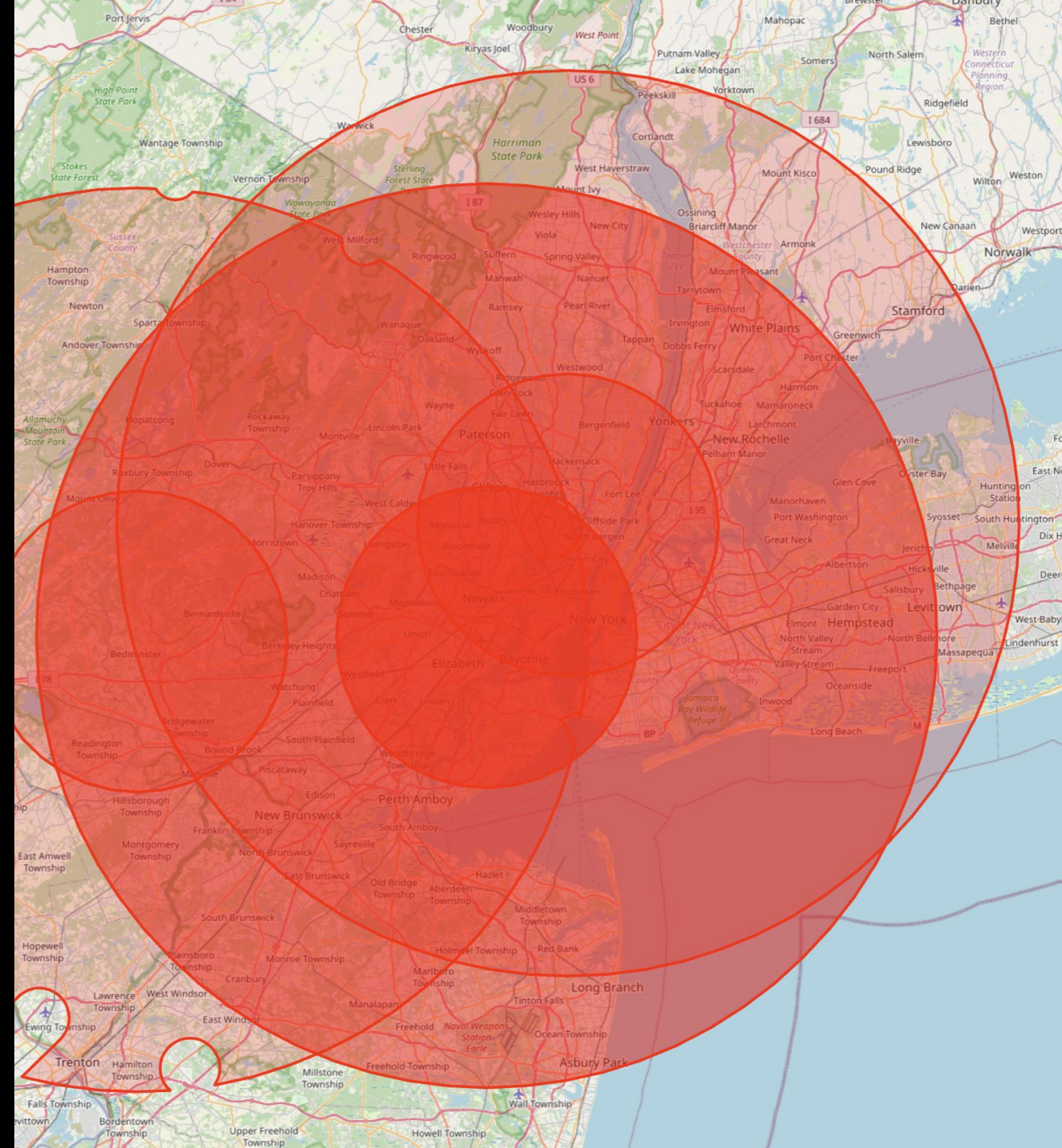


Heatmap of aircraft flying <500' MSL



Temporary Flight Restrictions

TFRs



Temporary Flight Restriction (TFR)

- TFRs are established as needed for reasons such as:
 - Protect persons and property in the air or on the surface from an existing or imminent hazard
 - Provide a safe environment for the operation of disaster relief aircraft
 - Prevent an unsafe congestion of sightseeing aircraft above an incident or event, that may generate a high degree of public interest
 - Protect the President, Vice President, or other public figures
 - Provide a safe environment for space agency operations
- TFRs can also be issued around sports venues (like Yankee Stadium) and large gatherings of people

How to check for TFRs

- <https://tfr.faa.gov/tfr3/?page=map>
- TFRs can change rapidly – it is your responsibility to check for TFRs before every flight!

Can I get approval to fly in a TFR?

- You must receive additional authorization, from the TFR authority, to operate in a TFR.
- Depending on the nature of the TFR, you may or may not obtain authorization
- The Special Government Interest (SGI) process can be used to request authorization:
https://www.faa.gov/uas/advanced_operations/emergency_situations