



MAYFLOWER WIND

Appendix Y2. Air Traffic Flow Analysis

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Mayflower Wind Offshore Wind Project

Mayflower Wind Energy LLC
Offshore Massachusetts

Air Traffic Flow Analysis

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Summary

Capitol Airspace conducted an air traffic flow analysis for the Mayflower Wind project (Lease Area OCS-A 0521; black outline, [Figure 1](#)) located off the coast of Massachusetts. At the time of this analysis, specific locations where wind turbine generators (WTGs) will be installed have not been identified. However, at 1,067 feet above mean sea level (AMSL), the highest possible wind turbine in the project envelope, proposed wind turbines in the northern section of the study area would require an increase to Boston Consolidated (A90) Terminal Radar Approach Control (TRACON) minimum vectoring altitudes (MVA). The purpose for this analysis was to determine the number of operations potentially affected by the airspace changes required to accommodate wind development up to 1,067 feet AMSL within the OCS-A0521 Lease Area.

The Federal Aviation Administration (FAA) conducts aeronautical studies to ensure that proposed structures do not affect the safety of air navigation and the efficient utilization of navigable airspace by aircraft. Proposed structures undergoing aeronautical study that exceed obstacle clearance surfaces will be identified as having an adverse effect. If the FAA determines that the adverse effect would impact a significant volume of operations, it could be used as the basis for determinations of hazard. For instrument flight rules (IFR) operations the significant volume threshold is one per week; for visual flight rules (VFR) operations the threshold is one per day.

Historical air traffic data indicates that the required changes to Boston Consolidated (A90) TRACON MVA Sector U should not affect a significant volume of radar vectoring operations. As a result, it is possible that Boston Consolidated (A90) TRACON would be willing to increase the affected MVA in order to accommodate wind development up to 1,067 feet AMSL. This mitigation option is subject to FAA approval.

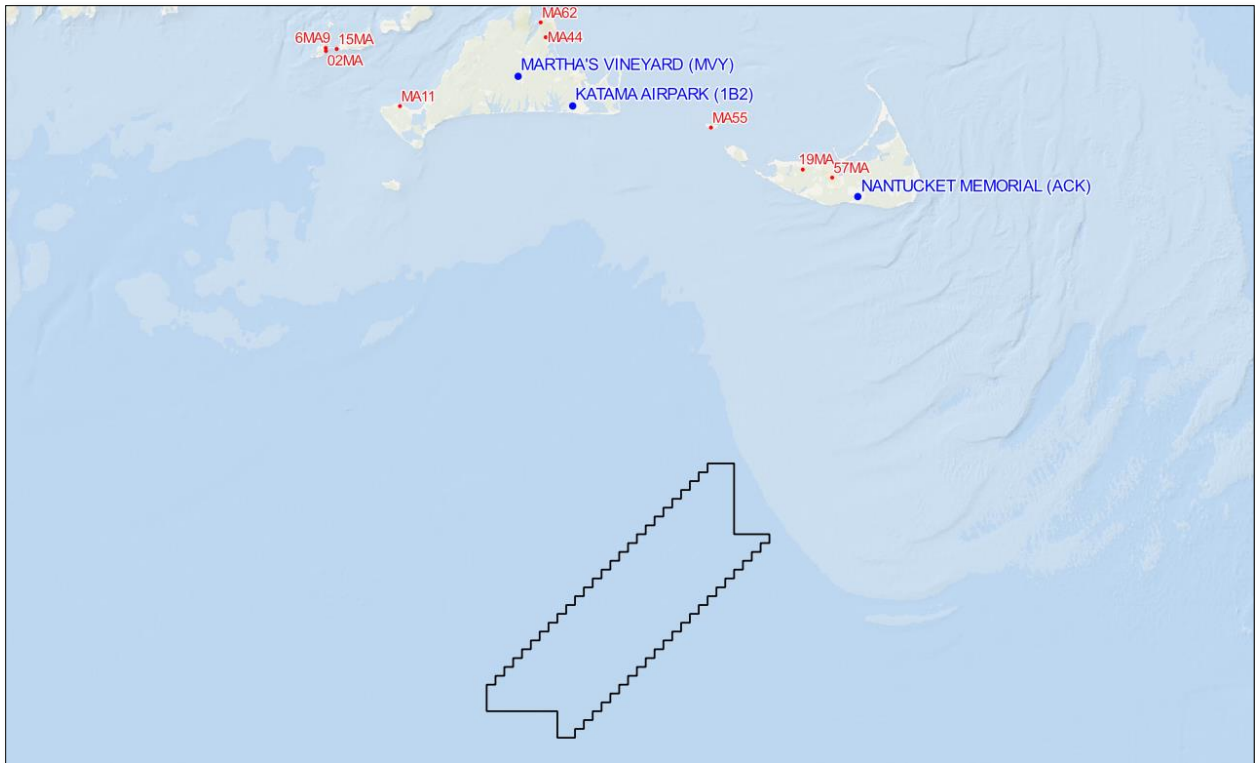


Figure 1: Public-use (blue) and private-use (red) airports in proximity to the Mayflower Wind project



Methodology

At 1,067 feet AMSL, proposed wind turbines in the northern section of the study area (red area, **Figure 2**) will exceed MVA sector obstacle clearance surfaces (hatched purple, **Figure 2**). As a result, the FAA must modify sector boundaries or establish isolation areas with increased MVAs. These sector modifications result in a three-dimensional volume of affected airspace where radar vectoring would be unavailable. If the FAA determines that this impact would affect as few as one radar vectoring operation per week, it could result in determinations of hazard.

In order to quantify the number of radar vectoring operations potentially affected by MVA sector modifications, Capitol Airspace evaluated FAA National Offload Program (NOP) radar returns covering the period between February 1, 2019 and January 31, 2020. The FAA NOP data contained 128,719,577 radar returns associated with 591,680 flights receiving air traffic control services.¹ Each flight that had at least one radar return within the affected airspace was analyzed for altitude and direction trends.

Flights that maintained one or more specific headings within the affected airspace operated in a manner consistent with receiving radar vectoring services. These flights also maintained or climbed/descended to maintain an altitude within the affected airspace. The historical presence of flights within the affected airspace is an indicator that the required MVA sector modifications could affect future air traffic control operations.

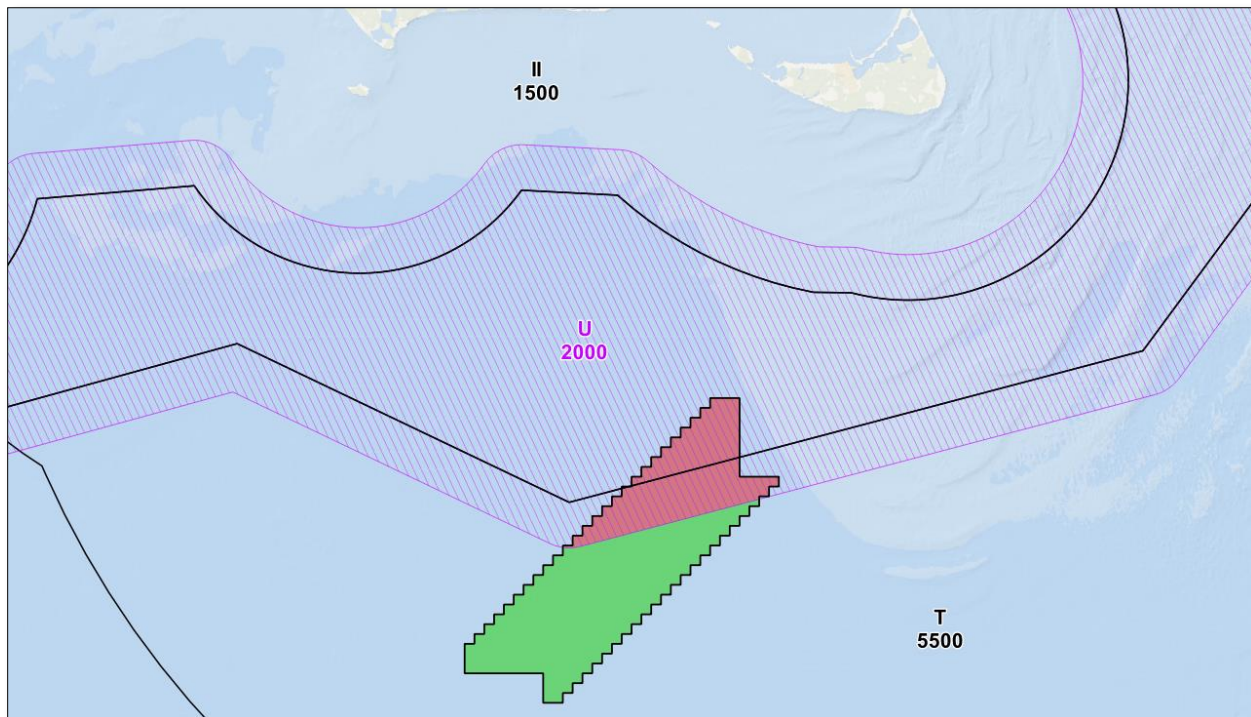


Figure 2: Boston Consolidated (A90) TRACON FUSION 3 MVA sectors (black) with Sector U obstacle evaluation area (hatched purple)

¹ NOP data excludes certain military flights due to the sensitive nature of some operations.



Findings

Boston Consolidated (A90) TRACON

FUSION 3 (A90_MVA_FUS3_2020)

Sector U

In order to accommodate wind development up to 1,067 feet AMSL, the FAA must increase the existing MVA from 2,000 feet AMSL up to 2,100 feet AMSL. Flight track data indicates that no flights operated within the affected airspace (dashed purple outline, **Figure 3**). This flight total represents an average of *0.00 flights per week* which is below the FAA's threshold for a significant volume of operations.

As a result of these findings, it is possible that Boston Consolidated (A90) TRACON would not object to modifying Sector U in order to accommodate wind development up to 1,067 feet AMSL. This mitigation option is subject to FAA approval.

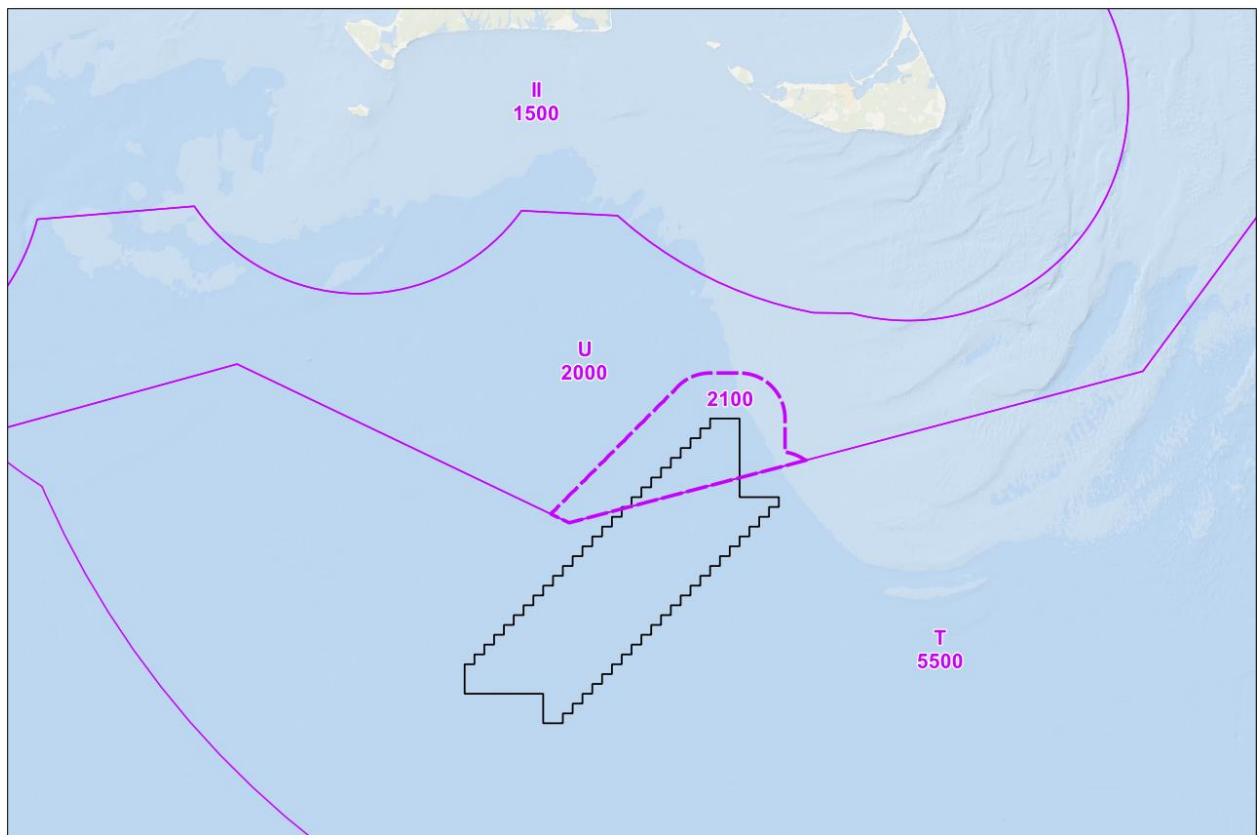


Figure 3: Boston Consolidated (A90) TRACON FUSION 3 MVA sectors (purple) and affected airspace (dashed purple outline)



Conclusion

Capitol Airspace assessed historical FAA radar track data covering the period of one year to determine the number of operations that could be affected by increasing the Boston Consolidated (A90) TRACON Sector U MVA. In order to accommodate wind development up to 1,067 feet AMSL, the affected MVA must be increased from 2,000 to 2,100 feet AMSL.

Historical radar track data indicates that proposed wind turbines should not affect a significant volume of Boston Consolidated (A90) TRACON radar vectoring operations (*0.00 flights per week*). These numbers are below the FAA threshold for a significant volume of operations. As a result of these findings, it is possible that Boston Consolidated (A90) TRACON would not object to modifying Sector U in order to accommodate wind development up to 1,067 feet AMSL. This mitigation option is subject to FAA approval.

Please contact [Dan Underwood](#) or [Candace Childress](#) at (703) 256-2485 with any questions regarding the findings of this analysis.