Design and Analysis of Corridors for UAM Operations

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Abstract— **Urban Air Mobility (UAM) is predicted to provide alternate modes of transportation for cargo and passengers in the urban areas. Integration of UAM operations into the National Airspace System is a challenge especially around large airport. The Federal Aviation Administration's (FAA) UAM Concept of Operations (ConOps) suggests new airspace structures for UAM operations such as corridors where FAA air traffic control (ATC) will not be expected to provide services. This paper presents a design for corridors in the Dallas Fort Worth (DFW) area that attempts to minimize air traffic controller interactions with UAM pilots and operators. The corridor and vertiports are then analyzed with respect to Class B separation criteria and wake advisory criteria. The results show that for the corridors designed for the DFW area and presented in this research, in some cases Class B separation criteria are not available between UAM corridors and legacy traffic due to the geometry of the airport. It shows that wake advisory criteria were not met for some segments in North Flow traffic but were generally met in South Flow. This means that some corridor segments at DFW airport will not be available for a given airport flow and may need new placements, which need further investigation.**

Keywords—UAM, Corridors, Urban Air Mobility, Advanced Air Mobility

I. Introduction

Urban Air Mobility (UAM) is a part of Advanced Air Mobility (AAM), a joint initiative between the Federal Aviation Administration (FAA), the National Aeronautics and Space Administration (NASA), and industry to develop an air transportation system that uses new air vehicles in geographical areas previously underserved by traditional aviation. Market forecast studies [1] predict that there will be demand for alternate modes of air transportation using electric vertical take-off and landing (eVTOL) aircraft. UAM expands transportation networks by introducing short flights to move people and goods around metropolitan areas [2,3]. UAM is expected to improve mobility for the public, alleviate road traffic, reduce trip time, and decrease strain on existing public transportation networks.

Various challenges exist to make the introduction of UAM feasible in the U.S. National Airspace System (NAS). These include integration with existing airports and airspace, provision of air traffic services (e.g., separation), vehicle design and certification, and community acceptance. The focus of this paper is on integration of UAM operations into the NAS via the introduction of new airspace structures.

UAM will function within a regulatory, operational, and technical environment that is incorporated into the NAS. In the UAM Concept of Operations (ConOps) [3], the FAA retains regulatory authority and is responsible for establishing operational parameters for UAM. The FAA's UAM ConOps describes UAM flights at altitudes below 5,000 ft with minimal disruption to established conventional aircraft traffic and limited interactions with air traffic control (ATC). Early stages of UAM may use existing procedures to safely operate with conventional flights. This would involve flying under Part 91 visual flight rules (VFR) and using voice for communications. The initial UAM ecosystem will utilize the current infrastructure such as helicopter routes, helipads, and ATC services, where practicable.

A NASA study explored the use of existing helicopter routes in Dallas Fort Worth (DFW) airspace for initial UAM operations using a Letter of Agreement (LOA) that included procedures to request a Class B (controlled airspace) clearance [4,5]. The research showed that this approach was feasible for near-term, low-demand UAM traffic, but was not scalable due to the impact on ATC workload.

The growth of air traffic in today's aviation system has resulted in new airspace reorganization and procedures to ensure safety and efficiency. One proposed innovation that can help with the introduction of UAM is establishing routes and corridors [3]. While such routes and corridors are similar to the area navigation procedures used today at busy airports, instead of ATC managing the flow of traffic, some UAM concepts envision a third-party service provider performing this role as the Provider of Services for UAM (PSU) Network [3,6].

The FAA's UAM ConOps [4] suggests that new airspace structures such as UAM corridors include the following criteria: 1) minimal impact on existing NAS operations, 2) minimal additional ATC services, 3) include public interest considerations such as noise, safety, and security, and 4) address customer demand The airspace available in urban environments is limited by the height of buildings, the effect of weather (including wind gusts), privacy needs, and existing air traffic flows. New airspace structures would need to be located near large airports and urban areas where the initial market demand is likely to exist [1].

The primary function of corridors in controlled airspace is to facilitate separation of UAM aircraft from other conventional traffic [3]. This has the result of limiting controller workload since UAM aircraft will be self-managed inside corridors. Corridors will also simplify maintaining separation between UAM flights by constraining their direction, speed, and altitude within the corridor boundaries, like the automobile freeway system.

The FAA UAM ConOps states that corridors will have minimum operational performance requirements for aircraft. Corridor availability will be managed by the FAA and communicated to operators through the PSU Network. Corridors may have an internal structure of tracks that consist of laterally and vertically separate pathways for UAM aircraft. This will allow increased capacity and safety.

There is an existing precedent for UAM corridors in VFR corridors. A VFR corridor is defined as a segment of Class B airspace with defined vertical and lateral boundaries in which aircraft may operate without an ATC clearance or communication with ATC. An example is a corridor through the Los Angeles Class B airspace, which has been reclassified as a special flight rules area (SFRA). An SFRA allows pilots to fly through Class B airspace without contacting ATC if they follow certain procedures. In addition to this example, the Hudson River Flyway SFRA allows traffic to transit down the Hudson River between Teterboro and Newark to the west, and LaGuardia and Kennedy to the east.

NASA has been evaluating airspace in the DFW area for the design of new airspace structures for UAM. It is assumed that there will be an on-board pilot-in-command and the flights will operate under VFR in visual meteorological conditions. Corridors may be required in controlled airspace, although UAM operations can fly in uncontrolled Class G and E airspace using current day rules. Keeler et al. [6] identified factors and heuristics for development of routes for UAM operations close to large airports such as DFW and Dallas Love Field (DAL). This paper describes the heuristics applied to define the corridors, analyzes them with respect to legacy traffic, and presents key results.

II. Design of Corridors

Corridors were designed for the Dallas airspace that would have minimal impact on ATC services. The process of designing corridors started with a search for unused airspace that was around DFW Airport, DAL, and Addison Airport.

The researchers started by evaluating Standard Instrument Departures (SIDs) and Instrument Approach Procedures (IAP) to identify the airspace demands of traditional traffic around DFW (Fig. 1 and Fig. 2) in South Flow only, since DFW operates predominantly in South flow. The analysis required identifying airspace that was 2,500 ft laterally or 1,000 ft vertically separated from traditional traffic. These separation criteria were selected because there is an FAA requirement that ATC must provide wake turbulence advisories to aircraft with less than 2,500 ft lateral or 1,000 ft vertical separation [7]. With the objective to have the least amount of conflict between UAM operations and legacy traffic, and to minimize UAM aircraft interactions with ATC, these criteria were applied to identify areas where UAM flights in Class B airspace would be separated from SIDs and IAPs and conventional traffic. This led the first iteration of the airspace for UAM (see left side image in Fig. 3). This airspace was not planned to be segregated from aircraft other than traditional traffic.

Fig. 1. shows the approach patterns into DFW in South Flow and the altitude restrictions at different waypoints (e.g., NETEE is 2,400 above mean sea level (MSL)). The airspace identified for UAM operations at 1,100 MSL is about 1,000 ft below what legacy flights are expected to fly (e.g., 2,300 MSL at Hasty or 2,400 MSL at NETEE). Similarly, Fig. 2 shows the expected altitude of the legacy flights from the departure end of the runway in South Flow. The green band of airspace identified in Fig. 3 shows that UAM flights would be flying at 1,100 MSL while the legacy flights would be at 2,166 MSL at that location, providing 1,000 ft separation between the legacy and UAM flights.

The corridor airspace was further evaluated using historical track data to ensure that most of the UAM flights were outside the wake turbulence advisory criteria. The right-side image of **Error! Reference source not found.** shows the revisions made based on historical tracks that led to defining UAM operations at different altitudes (Fig. 4). For the purpose of this research, all the UAM operations were planned to fly at 500 ft above ground level (AGL). The result was airspace identified for UAM flights at different altitudes around the DFW area, as shown in Fig. 4, that is separated (about 95% of the time) from legacy traffic.

A UNICOM (Universal Communications) area is a non-government communication facility, which provides airport information at certain non-towered airports. UAM pilots would switch to a common frequency before they enter and use this while inside the UNICOM area to coordinate with other traffic. The researchers proposed a candidate UNICOM area over Dallas Downtown (Fig. 4) 1,500 MSL to avoid other VFR traffic. The proposed UNICOM area is a relatively small portion of the DFW Class B surface area that could be used by UAM flights without requiring ATC communications or clearances.

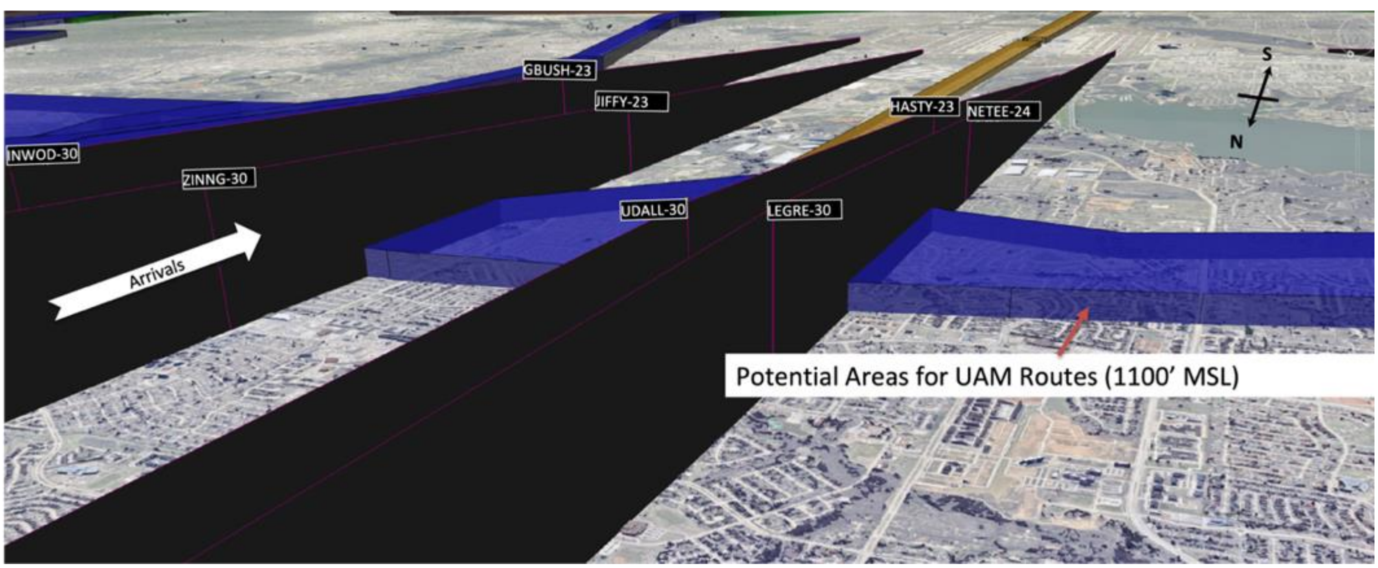

Fig. 1. DFW Arrival Procedures. Fixes and altitude restrictions for the South approaches to East Complex of DFW.

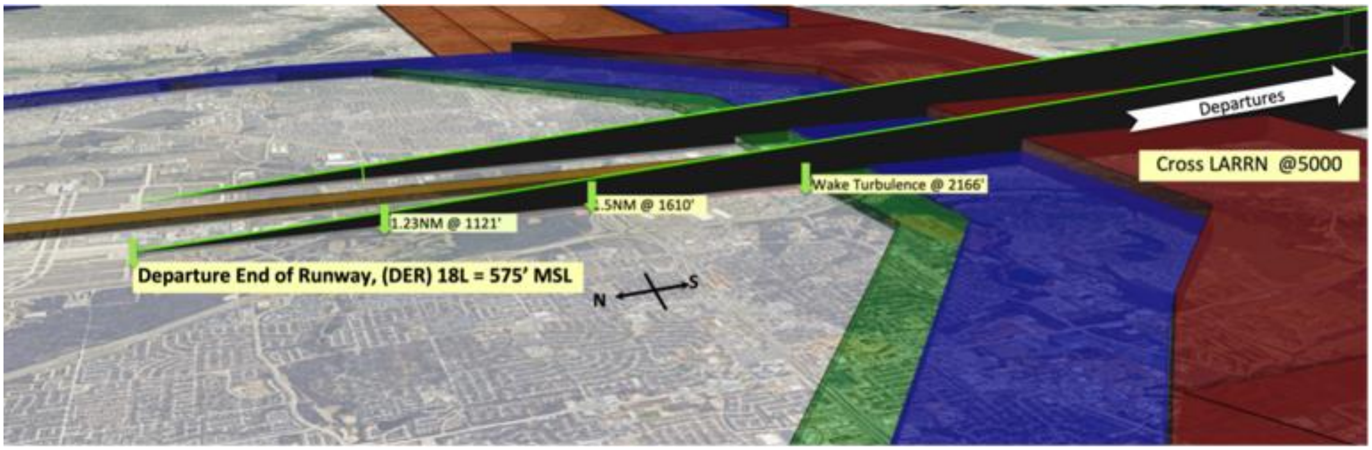

Fig. 2. DARTZ Departure. The departure procedure depicts the expected path of 18L departure traffic

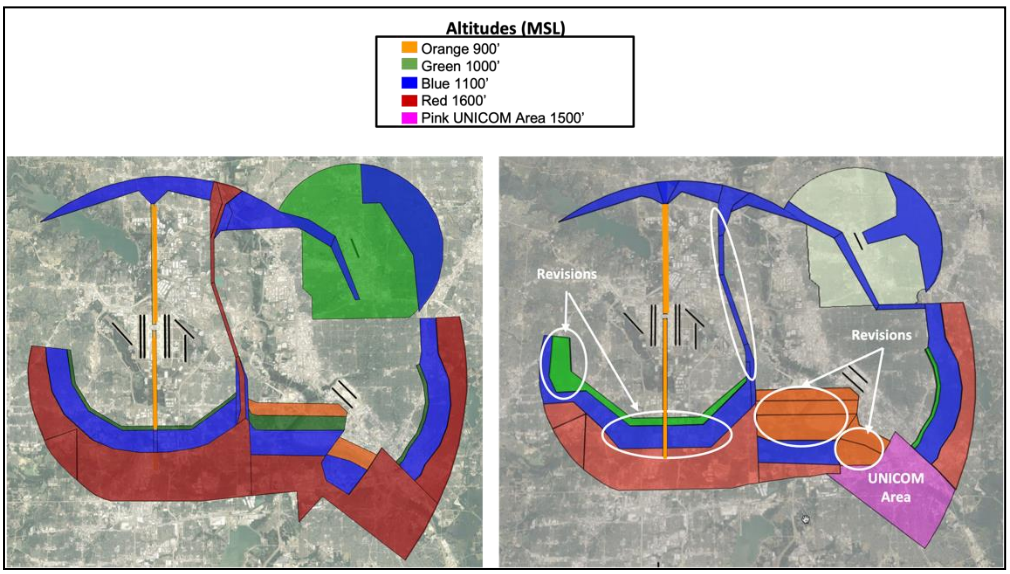

Fig. 3. Iterative design of airspace for UAM operations. The left side of the figure shows the initial design using SIDs as restrictions. The right side of the figure shows changes made to the initial design based on historical track data to ensure that UAM routes were deconflicted from 99% of traditional traffic, and the UNICOM Area is also added.

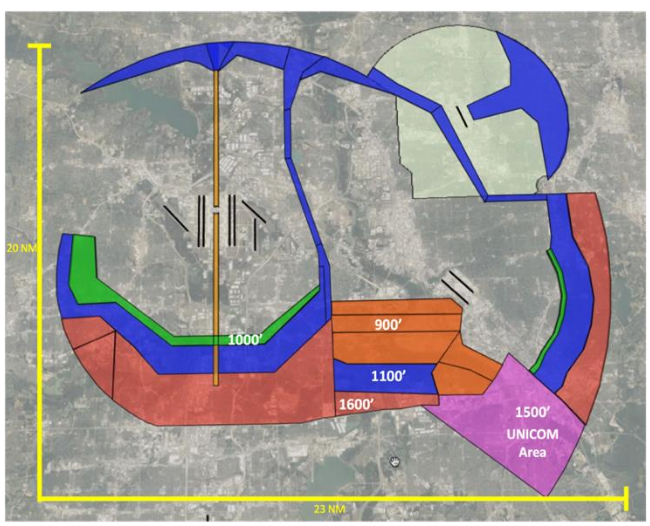

Fig. 4. Class B and D airspace designed to minimize interactions with conventional aircraft.

III. Method

The objectives of this analysis were to apply heuristics to the design of UAM corridors and then analyze them with respect to legacy traffic. Corridors with tracks within them were designed and created for a subset of the airspace identified for UAM operations. These corridors were then divided into segments for ease of analysis, and to identify areas that may require iterative adjustments to refine the airspace (see Fig. 5). The corridors were located only in Class B and Class D airspace and housed tracks or pre-defined routes that connected 34 potential vertiports in the region. All the corridor volumes were assumed to have a floor of 400 AGL and a ceiling of 600 with UAM flights planned to fly at 500 ft AGL or approximately 1,100 ft MSL (the elevation of the terrain in that area is about 600 ft). The width of the corridor was 3000 ft with two routes or tracks planned in opposite directions with 1500 ft between them.

The flight summary and other files used for these analyses were obtained from the NASA Ames Sherlock data warehouse [8]. The files include a one-line summary for each flight flown in the facility in the last 24-hour period. The summary contained data on origin, destination, departure runway, arrival runway, takeoff center, takeoff date, and route.

This DFW area D10 Terminal Radar Control Facility (TRACON) data for the selected days of interest were then filtered to exclude all track points above 3,000 ft MSL since they were unlikely to interact with UAM traffic planned at 1,100 ft MSL.

Analyses were performed on 12 days of D10 TRACON arrival and departure track data from 2018. Six summer and six winter days from 2018 were selected where three days were predominantly in North Flow and other three days were predominantly in South Flow. Analyses for North Flow days were conducted to identify the corridors that did not meet the separation or wake turbulence advisory criteria in both directions so that new corridors could be investigated.

UAM corridor segments and vertiport volumes were evaluated in the DFW airspace (See Fig. 5). The 15 corridors (A through O) were broken into multiple smaller segments for a total of 36 segments. The 36 corridor segments and 20 vertiport volumes were analyzed with respect to the two separation criteria from the legacy air traffic.

The two criteria that were used for this evaluation are the wake advisory and the Class B separation requirements. The wake advisory criteria are defined as a lateral separation of 2,500 ft or a vertical separation of 1,000 ft. The Class B separation criteria are defined as a lateral separation of 1.5 mi or a vertical separation of 500 ft between any VFR and all aircraft that weigh more than 19,000 lb or are turbojets in Class B airspace.

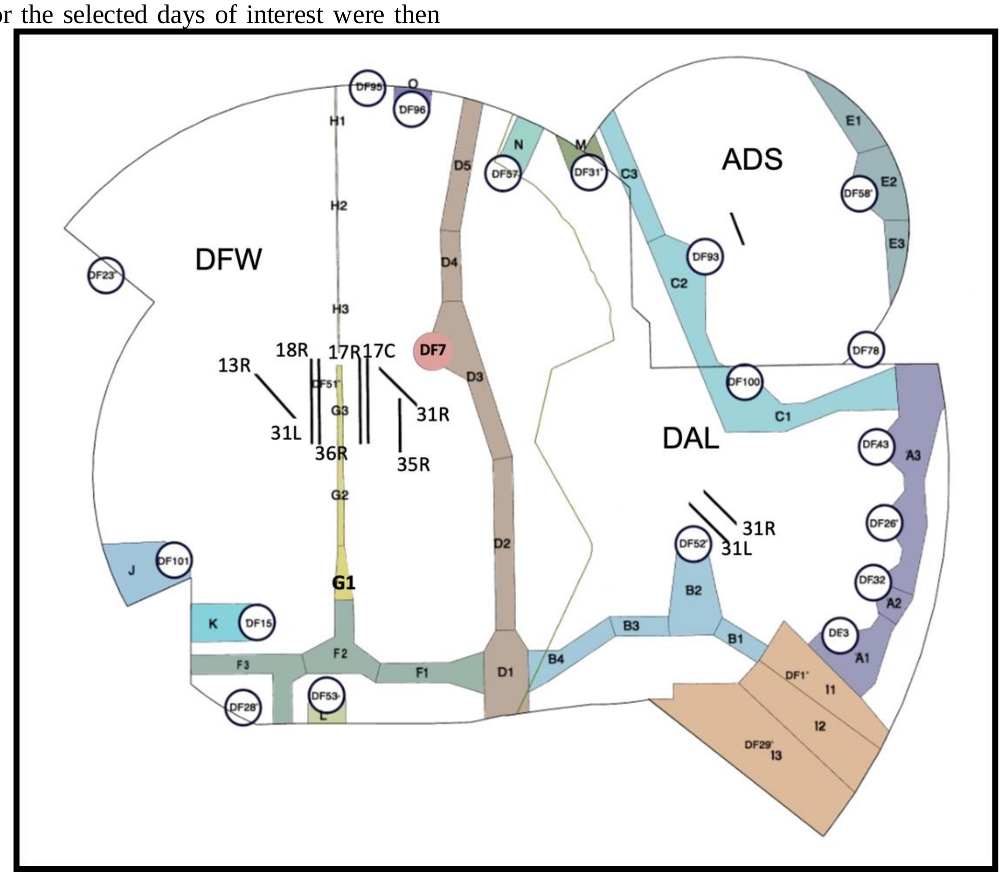

Fig. 5. DFW UAM airspace with corridors and vertiports.

IV. Results

The analysis results for 36 corridors and 20 vertiport volumes with respect to the wake advisory criteria and Class B separation criteria are described in this section. The results will be presented in terms of DFW and DAL arrival and departure traffic for both North and South Flow airport configurations. Based on discussions with SMEs, it was decided that handling greater than 5% of encounters between UAM corridors and traditional traffic tactically would be unacceptable workload for the air traffic controllers. Results showing encounters greater than 5% are described in this section.

A. Segments with encounters due to wake advisory criteria with DFW arrivals and departures

The wake advisory criteria are defined as a lateral separation of 2,500 ft or a vertical separation of 1,000 ft between the corridor and the legacy traffic. All segments except for segments F-1, F-2, and G-1 met the wake advisory criteria for DFW arrival traffic in North Flow (see Fig. 6).

All vertiports met the wake advisory separation criteria except for vertiport DF7 that had encounters with DFW South Flow arrivals. Table I shows the percentage of times the segments had encounters with legacy traffic and Fig. 8 shows the segments and their locations graphically. Fig. 7 illustrates that segments F-1, F-2, and G-1 did not meet the wake criteria for North DFW arrivals since the corridors were designed using the wake advisory criteria for South Flow only. The blue markers on Fig. 9 mean that they have lateral separation even though vertical separation is lost, whereas the red markers mean that both lateral and vertical separation are lost.

TABLE I. DFW North and South Flow encounters using wake advisory criteria

Segment	Arrival/Departure	Percent of N	Total (N)
F-1	North Arrivals	11%	5142
F-2	North Arrivals	25%	5142
G-1	North Arrivals	5%	5142
Vertiport	**Arrival/Departure**	**Percent of N**	**Total (N)**
DF7	South Arrivals	25%	5245

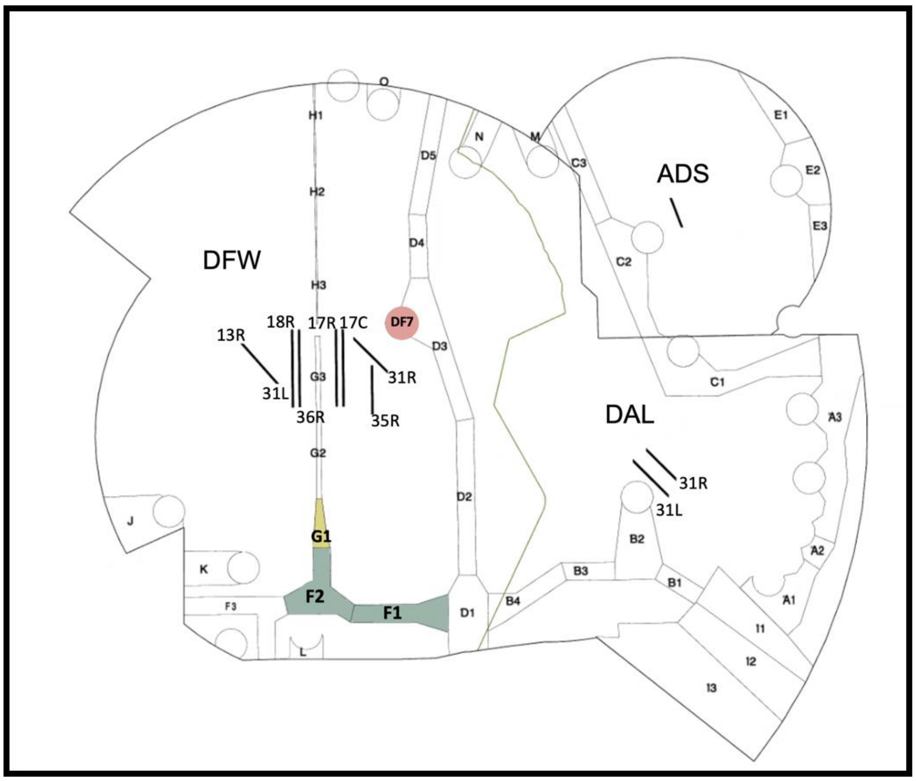

Fig. 6. DFW North and South flow results using wake advisory separation criteria.

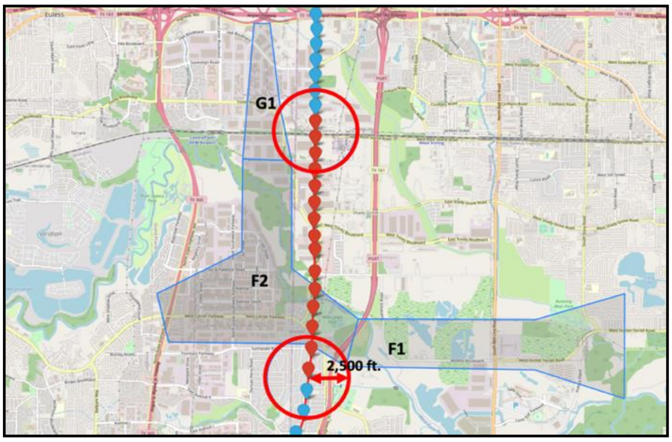

Fig. 7. DFW North Arrivals encounters with F2 and G1.

B. Segments with encounters due to Class B separation criteria with DFW arrivals and departure

The separation criteria of 1.5 mi lateral or 500 ft vertical was not met for several corridor segments. The traffic did not meet the 1.5 mi criteria as the flights descend to runways 31L and 31 R in North Flow. Similarly, segments F-2, G-1, G-2, and G-3 did not meet the criteria for DFW north arrivals. **Error! Reference source not found.**The north arrival segments G-3 and H-3 do not meet the Class B separation criteria for north DFW departures as shown in Table II and Fig. 8*Fig. 8*.

Segments D-3, D-4 and D-5 are important segments that connect the north and south parts of the Dallas area. Table II shows that D-3 and D-4 segments lose 1.5 mi lateral separation for about 30% of the DFW arrivals descending into 17L. Fig. 9 shows encounters for D-3 as indicated by the large red circle and it can be inferred that D-4 would have the same encounters with traffic in South Flow.

Vertiport DF7 is a potential location for UAM flights destined for DFW airport, especially if they are unable to use segments G-2 or G-3 (Spine Road). As shown in Table II, the vertiport loses the 1.5 mi lateral separation (46% of the time) shown as the large red circles (Fig. 9) for both DFW arrivals to runways 17L and 17C. It also loses the 2,500 ft wake advisory separation (25% of the time) shown by the small red circle for DFW arrivals to 17L in South Flow.

Segments G-2 and G-3 are over the Spine Road which is an existing helicopter route that runs between the East and West Complexes of DFW airport. Spine Road is about 1,400 ft wide and it has more than 2,500 ft from the inner runways (17R and 18L) thus it always meets the 2,500 ft lateral wake vortex separation requirement when the flights are descending or climbing in either of the flows. However, given its placement and geometry, it does not meet the Class B separation requirements of 1.5 mi laterally in either of the flows. Table II shows that segment G-2 has encounters with south DFW departures and north DFW arrivals, whereas segment G-3, which is closer to the runways, has encounters for both north DFW arrivals and departures as well as with south DFW arrivals and departures.

TABLE II. DFW NORTH AND SOUTH FLOW ENCOUNTERS USING CLASS B SEPARATION CRITERIA SEGMENTS

	Arrival/Departure	**Percent of N**	**Total (N)**
F-2	North Arrivals	68%	5142
G-1	North Arrivals	77%	5142
G-2	North Arrivals	69%	5142
G-3	North Arrivals	69%	5142
G-3	North Departures	99%	5200
H-3	North Departures	99%	5200
D-3	South Arrivals	31%	5245
D-4	South Arrivals	31%	5245
D-5	South Arrivals	8%	5245
G-2	South Departures	97%	5238
G-3	South Arrivals	64%	5245
G-3	South Departures	100%	5238
H-2	South Arrivals	64%	5245
H-3	South Arrivals	64%	5245
Vertiport	**Arrival/Departure**	**Percent of N**	**Total (N)**
DF7	South Arrivals	46%	5245

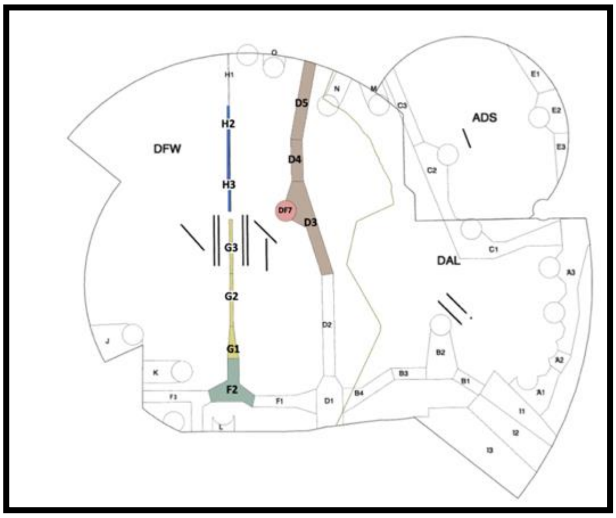

Fig. 8. DFW North and South Flow results from Table II. using Class B separation criteria

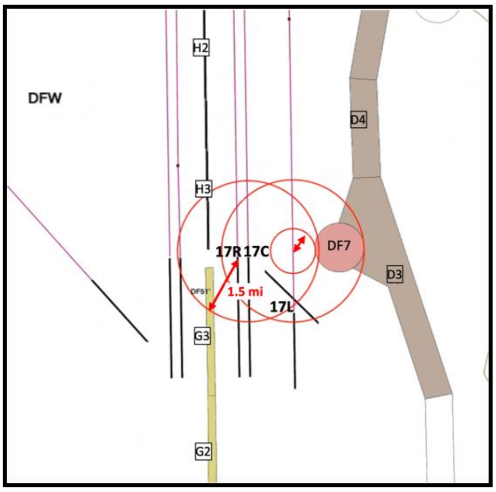

Fig. 9. D3 segment and DF7 vertiport losing separation and wake advisory requirements.

C. Segments with encounters due to Wake Advisory Criteria with DAL arrivals and departures

The segments that did not meet the wake advisory criteria in both North and South Flows for DAL are shown in Table III and Fig. 10. The segments that did not meet the wake advisory criteria with DAL north arrivals are A-1, A-2, I-1, and I-2 and vertiports DF3 and DF4 as shown in Table III. Fig. 11 shows that segments A-1 and A-2 as well as segments I-1 and I-2 over the Dallas Downtown area lose the 2,500 ft lateral separation during descents, as shown by the red circle. Segments A-2 and I-2 lose wake advisory separation only 5% of the time, whereas A-1 and I-1 lose separation 94% and 50% of the time respectively. These results are expected since they were not designed for North Flow.

Segments C-2, C-3, and M and vertiport DF31 do not meet the wake advisory criteria for DAL south arrivals. This is possibly due to visual approaches flying lower altitudes than published instrument approaches into DAL airport as shown in Fig. 12. The blue markers in Fig. 12 show that vertical separation is lost whereas lateral separation remains, and the orange markers describe the opposite. The red markers mean that both lateral and vertical separation are lost and green means neither of those were lost.

TABLE III. DAL NORTH AND SOUTH FLOW PERCENTAGE OF ENCOUNTERS USING WAKE ADVISORY CRITERIA.

Segment	Arrival/Departure	Percent of N	Total (N)
A-1	North Arrivals	94%	1700
A-2	North Arrivals	5%	1700
I-1	North Arrivals	50%	1700
I-2	North Arrivals	5%	1700
C-2	South Arrivals	12%	1714
C-3	South Arrivals	14%	1714
M	South Arrivals	7%	1714
Vertiport	**Arrival/Departure**	**Percent of N**	**Total (N)**
DF3	North Arrivals	95%	1700
DF4	North Arrivals	95%	1700
DF31	South Arrivals	10%	1714

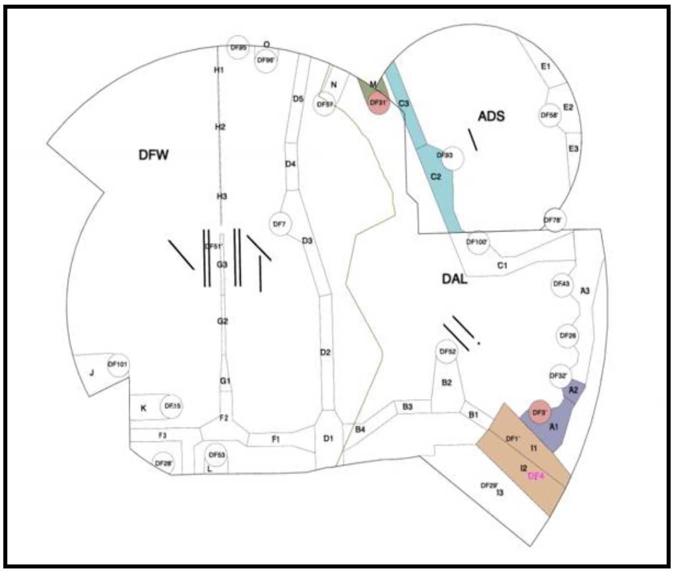

Fig. 10. DAL North and South flow results using wake advisory criteria.

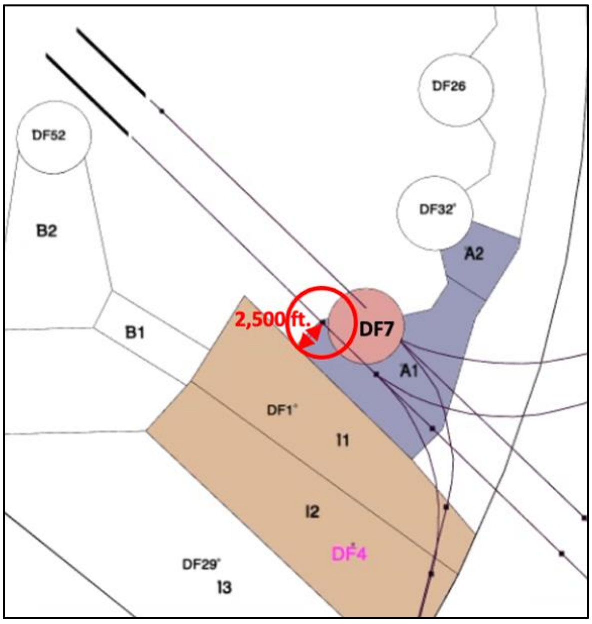

Fig. 11. Segments I-1, I-2, A-1 and A-2 and vertiport DF7 losing wake advisory separation

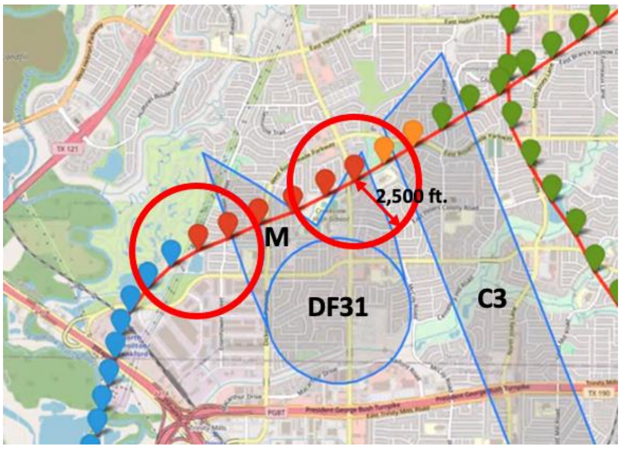

Fig. 12. Segment C-3, M and vertiport DF31 encounters for wake advisory in DAL South arrivals.

D. Segments with encounters due to Class B Separation Criteria with DAL arrivals and departures

For DAL traffic in the North Flow, segments A-1, A-2, B-1, B-2, I-1 I-2 and vertiports DF3, DF32, DF4, DF52 did not meet the Class B separation criteria (Fig. 13 and Table IV). Similarly, for DAL traffic in the South Flow, segments B-2, I-1 departure traffic and vertiport DF52 for both arrivals and departures did not meet the Class B separation criteria.

Both the wake turbulence advisory and the separation criteria was not met for DAL North Flow arrivals for segments A-1. A-2, I-1 and I-2 (Tables III and IV). Segment I-1 is close to DAL airport and in the North Flow both the wake criteria and separation criteria are not met as shown in Fig. 14.

Segment B-2 is close to the vertiport DF52 and given their proximity to DAL airport, they do not have 1.5 mi lateral separation with legacy traffic in both directions. Similarly, DF52 serves as a potential vertiport for UAM flights to DAL

Airport. As shown in Table IV, it loses separation criteria for both north and south DAL arrivals 100% and 89% respectively. Fig. 15 shows the loss of the separation criteria in North Flow only (see the large red circle).

TABLE IV. DAL NORTH AND SOUTH FLOW PERCENTAGE OF ENCOUNTERS USING CLASS B SEPARATION CRITERIA

Segment	**Arrival/Departure**	**Percent of N**	**Total (N)**
A-1	*North Arrivals*	*97%*	*1700*
A-2	*North Arrivals*	*16%*	*1700*
I-1	*North Arrivals*	*99%*	*1700*
I-2	*North Arrivals*	*16%*	*1700*
B-1	*North Arrivals*	*57%*	*1700*
B-2	*North Arrivals*	*99%*	*1700*
B-2	*North Departures*	*18%*	*1632*
B-2	*South Departures*	*98%*	*1684*
I-1	*South Departures*	*19%*	*1684*
Vertiport	**Arrival/Departure**	**Percent of N**	**Total (N)**
DF3	North Arrivals	98%	1700
DF32	North Arrivals	42%	1700
DF4	North Arrivals	98%	1700
DF52	North Arrivals	100%	1700
DF52	North Departures	94%	1632
DF52	South Arrival	89%	1714
DF52	South Departures	98%	1684

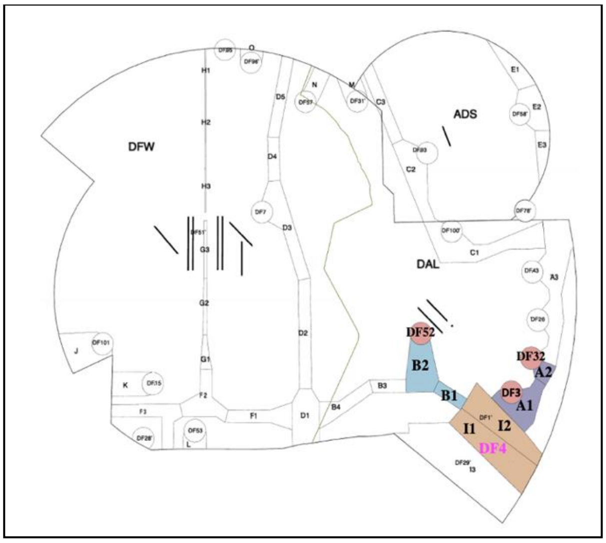

Fig. 13. DAL North Flow segments losing Class B separation criteria.

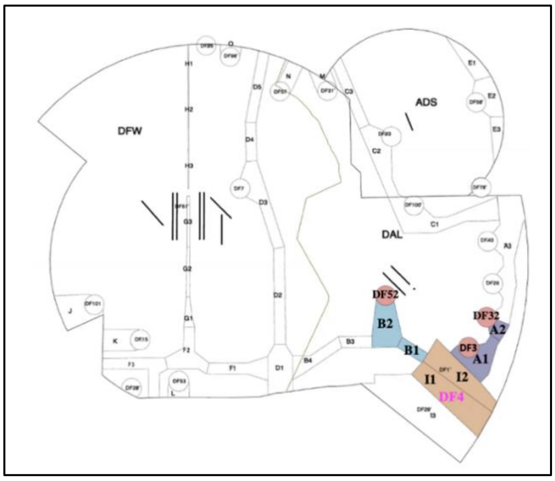

Fig. 14. DAL North Flow segments losing Class B Separation Criteria.

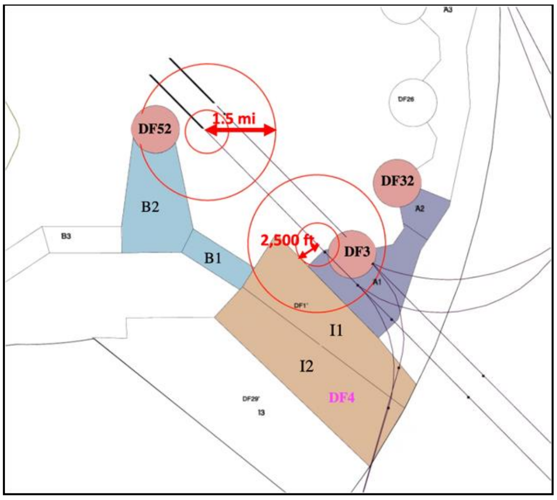

Fig. 15. A-1, A-2, I-1 and I-2 segments and DF52 vertiport losing separation and wake advisory requirements in North Flow.

V. DISCUSSION

The FAA ConOps for UAM operations [4] proposes new airspace structures. The DFW area corridors were designed so that future third-party services, such as PSU and flight deck technologies, could provide separation in lieu of ATC services inside the new airspace structures. ATC provides separation services and wake advisories to aircraft as per ATC Handbook (JO 7110.65) [7]. The corridors were designed such that the wake advisory criteria are met so that the UAM aircraft can fly with the legacy traffic in South Flow, which is the dominant flow for DFW. SIDs and IAPs were used for the initial design followed by an analysis of historical track data and their proximity to the corridors. It was assumed that UAM aircraft are operating between sunrise and sunset, using VFR, in VMC.

This paper analyzes the corridors and their segments against two criteria, the wake advisory criteria of 2,500 ft lateral or 1,000 ft vertical and the Class B separation requirement with aircraft that weigh more than 1,900 lbs, and turbojets. There were 36 corridor segments and 20 vertiport volumes that were analyzed against the two criteria for DFW and DAL arrivals and departures in the North and South Flows.

Data shows that all the corridor segments meet the wake advisory criteria with DFW South Flow traffic. However, segments F1, F2, and G1 do not meet the wake criteria in the DFW North Flow traffic. This is expected since DFW operates predominantly in South Flow, and the corridors were designed with South Flow in mind. This analysis identifies segments that do not work in both flows so that alternatives can be investigated in the future. One alternative would be to identify alternate routes that work for both flows so that UAM operators can provide reliable transportation services to customers especially near large airports where early demand is likely to exist. Another alternative is to have a hybrid system where ATC provide wake advisories and separation services where corridors cannot be adequately separated from legacy traffic.

Spine Road and a vertiport close to DFW (DF7) and the segments D-3 through D-5 that connect the north and south part of DFW do not meet the Class B separation criteria in either North or South Flow. This is due to the placement and geometry of the Spine Road and its proximity to the arrival flows into DFW 17R, 17C and 18R, 18L being less than 1.5 mi. Segments D3-D5 face a similar challenge in that 1.5 mi lateral separation is not available with traffic descending (and losing the required vertical separation) to 17L. Such operations will require ATC to provide separation services unless this criterion that exists in Class B can be waived for VFR operations in VMC. There exists a waiver for the required Instrument Flight Rules (IFR) separation of 3 mi between arrival flows into DAL 13L/R and DFW 17L arrivals that affects 127,000 aircraft every year. This waiver for IFR separation has allowed both DAL and DFW to work as independent airports even though the flows into DAL are closely spaced to DFW 17L arrivals and lose the required 3 mi separation. Near term operations in Spine road may require ATC services whereas corridors defined in the periphery of the Class B or large airport like DFW may be self-sufficient creating a hybrid system for UAM operations.

The analyses of corridor segments in close proximity to DAL traffic shows that wake advisory requirements were not met for segments C-2, C-3, and M in the north part of the Dallas Class B airspace, mostly because south arrivals into DAL are on visual approaches. They are flying lower than the published instrument approach procedure altitudes while descending into DAL airport and lose the vertical separation of 1,000 ft. This can be mitigated if DAL approaches are required to have altitude restrictions so that they can maintain 1,000 ft above the corridors designed for UAM operations.

The segments and vertiports close DAL airport, such A-1, A-2, and vertiport DF3, as well as those designed over Dallas Downtown (segments I-1 and I-2 and vertiport DF4) do not meet the wake advisory or Class B separation criteria for North Flow. Therefore, these corridors may not be available in North Flow. Further analyses will investigate changing the placement of corridors such as A-1 and A-2 to the East or even outside of Class B so that at least the required wake advisory requirement is achieved. Similarly, segments B1, B2, and DF52 are so close to DAL airport that they do not meet the Class B separation criteria in either flow.

The encounters between corridors and legacy traffic due to wake advisory requirements or Class B separation requirements mean that ATC will need to provide separation services in the near term. In the long term, waivers to some of these requirements may be necessary so that the workload on ATC can be managed and the corridors can be used successfully.

Due to the proximity of the airports and the different arrival and departure flows, the 1.5 mi lateral Class B separation requirement is not available for arrival and departure flows in the DFW area. A waiver of this requirement may be needed through FAA's Safety Risk Management processes. In the absence of the waiver, ATC will need to provide services to separate VFR aircraft from all other aircraft that weight more than 19,000 lbs and turbojets.

To summarize, most corridors designed for South Flow met the required wake advisory requirement in South Flow. If the goal is to minimize ATC interactions with UAM flights, some corridors or segments may not be available under certain airport configurations unless the corridors can be redesigned and placed outside of Class B airspace (e.g., segments A1 and A2). Reduction or elimination of ATC interaction will allow future third party services to provide separation services inside the corridor. Further investigation into placement of corridors that work in both airport configurations is required.

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