RSP | Manston Airport

Appendix A – Manston Airport Airspace Design and Procedures

Options Development Part 2

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Glossary

Acronym	Meaning
ACP	Airspace Change Proposal
AMS	Airspace Modernisation Strategy
amsl	above mean sea level
ANSP	Air Navigation Service Provider
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
DCO	Development Consent Order
FASI-S	Future Airspace Strategy Implementation - South
ft	feet
GA	General Aviation
GNSS	Global Navigation Satellite System
IAP	Instrument Approach Procedure
IFP	Instrument Flight Procedure
ILS	Instrument Landing System
LAMP	London Airspace Modernisation Programme
LTMA	London Terminal Manoeuvring Area
MAP	Missed Approach Procedure
NATMAC	National Air Traffic Management Advisory Committee
NDB	Non-Directional Beacon
PBN	Performance Based Navigation
RSP	RiverOak Strategic Partners Ltd
SID	Standard Instrument Departure

1. Options Development

1.1 Introduction

The purpose of this document is to seek the input of key stakeholders in the development of the design options that address the requirements of the Manston Airport Airspace Change Proposal (ACP). This ACP concerns the introduction of appropriate Performance Based Navigation (PBN) flight procedures and airspace to enable safe operations at the redeveloped airport.

1.2 Background

Manston Airport is a disused airport on the Isle of Thanet in Kent. It has one of the longest and widest runways in the UK, comparable to other international airports, making it a valuable infrastructure asset. RiverOak Strategic Partners (RSP) is proposing to secure the future of this valuable national asset by redeveloping and reopening it as a successful hub for international air freight which also offers passenger travel, executive travel and aircraft engineering services.

RSP has applied to the Planning Inspectorate for a Development Consent Order (DCO) to build Manston Airport and a decision is expected in May 2020. In addition, RSP must also secure approval from the CAA, through the CAP 1616 process, for its use of airspace and procedures.

This document relates only to the CAP 1616 process and the proposal to introduce the airspace and Instrument Flight Procedures (IFPs) required to enable safe and efficient operations to and from the airport.

1.3 CAP 1616 Airspace Design Guidance

CAP 1616 is a seven-stage process published by the CAA that provides guidance on the process to follow when seeking to change the way airspace is used. The whole Manston Airport CAP 1616 process is envisaged to take 2½ years. The seven stages of the process are as follows:

- Stage 1 – Define
- Stage 2 – Develop and Assess (current stage)
- Stage 3 – Consultation
- Stage 4 – Update and Submit
- Stage 5 – Decide
- Stage 6 – Implement
- Stage 7 – Post-Implementation Review

Manston Airport is currently at Stage 2 which requires the development of options that seek to meet the original Statement of Need. The options are required to align, where practicable, with the Design Principles generated in Stage 1. These options are then assessed to understand the positive/negative impacts before progressing to the Stage 2 Gateway. There is a formal public consultation in Stage 3, but this document is your opportunity as a key stakeholder involved in the development of the Design Principles to contribute early and help influence the design options taken forward to Stage 3. Outside the formal consultation windows, when we are asking for you to contribute, we will still listen to what you have to say about the proposal or generally about our operations.

1.4 Progress So Far

In November 2018, RSP submitted a Statement of Need to the CAA. This is the formal explanation as to why RSP wishes to make changes within the airspace surrounding the Airport. The CAA indicated that an airspace change was an appropriate mechanism to achieve the objectives in the Statement of Need. A copy of the Statement of Need and other associated documentation can be viewed at https://airspacechange.caa.co.uk/PublicProposalArea?pID=112.

At the end of February 2020, the first stage in the change process was successfully completed when the RSP submission for Manston Airport passed through the CAA's Stage 1 DEFINE Gateway.

The work undertaken during Stage 1 helped to establish a prioritised shortlist of Design Principles to act as a framework against which Design Options will be drawn up. The prioritised list of Design Principles is shown in Table 1 below.

Priority	Design Principle
1	Procedures must be designed to meet acceptable levels of flight safety
2	Design options must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it
3	Procedures should be designed to minimise the impact of noise below 7,000 feet
4	Where practicable, designs should seek to minimise the impact of noise on particularly sensitive areas
5	Designs should minimise the impact on other airspace users in the local area
6	Procedures should be designed that minimise aircraft emissions to reduce air pollution
7	Designs should make provision for multiple routes that can be used to spread the noise burden more equitably
8	Procedures should be designed to minimise the number of track miles flown

Table 1 - Prioritised Design Principles

1.5 Step 2A – Options Development

Stage 2, Step 2A in the process is about the development of a potential long list of design options that seek to meet the original Statement of Need and are aligned with the Design Principles shown above. RSP has developed a comprehensive list of design options for Manston Airport which, with your input, will be refined to produce one or more options that address the Statement of Need and align with the defined Design Principles. RSP would like to ensure that stakeholder concerns have been properly understood and accounted for in designing these options. It is important to us that you are satisfied that the design options are aligned with the Design Principles and that we have properly understood and accounted for your concerns in designing options.

In addition, RSP will be hosting workshops (physically or virtually) to further engage with stakeholders to make sure that your views have been captured and demonstrate how this feedback has influenced the design options.

Once stakeholder feedback has been received, RSP will produce a Design Principle Evaluation that sets out how its design options have responded to the Design Principles.

1.6 Step 2B – Options Appraisal

The second part of Stage 2 (Step 2B) involves an assessment of the options in order to develop the short list of options that will be taken forward to Stage 3 (Consultation). Your input will assist us in developing the shortlist. Any options that are unviable and cannot be taken forward, or any restrictions on the design options developed, will be clearly explained to the stakeholders, with the appropriate evidence to support the reasons. At the end of this Step 2B, RSP will submit details of the options developed to the CAA to pass through the Stage 2 DEVELOP AND ASSESS Gateway, currently programmed for 25th September 2020.

1.7 Next Steps

This engagement is focussed on those representative bodies and individuals that were involved in developing the Design Principles in Stage 1, who can offer early views on behalf of their local communities, including elected community representatives, commercial aviation operators, including airlines, airports and Air Navigation Service Providers (ANSPs), representatives of local General Aviation organisations or clubs and members of the National Air Traffic Management Advisory Committee (NATMAC).

Once the Stage 2 DEVELOP AND ASSESS Gateway has been passed, we will launch formal public consultation as part of Stage 3, in which we will be consulting widely with residents, businesses, communities, the public and other stakeholders. Details of the formal consultation will be communicated in due course, at which point RSP will welcome all relevant views about its ACP.

2 Design Options

2.1 Proposed Procedures

RSP is seeking to introduce Instrument Flight Procedures (IFPs) for aircraft departing from, and arriving at, the airport. IFPs is a term used to describe the published routes aircraft fly over the ground, both in plan and elevation view. These new procedures allow aircraft to make the best use of the airspace, utilising Global Navigation Satellite System (GNSS) technology to make more efficient use of the airspace around the airport by defining more accurate routing and to allow the airport to explore different options for the way aircraft will approach and depart the airport, whilst ensuring acceptable levels of safety.

RSP is proposing to introduce Standard Instrument Departures (SIDs), Transition procedures and Instrument Approach Procedures as part of this Airspace Change Proposal (ACP).

RSP has developed a comprehensive list of design options and would now like to share these with those representative bodies that contributed to the development of the Design Principles in Stage 1. We have already engaged with ANSPs in order to identify any constraints or restrictions that could influence the way in which the options are developed. This will enable us to ensure that any design options accord with the CAA's published Airspace Modernisation Strategy (AMS) and in particular, the Future Airspace Strategy Implementation – South (FASI-S).

We are now seeking further input from our stakeholders to initially identify the design envelopes, or swathes, in which the routes would be contained. This will be followed by an assessment of the route options that will be developed within the envelopes.

2.2 Departure - Standard Instrument Departure (SID)

A SID describes the route that an aircraft must fly on departure from an airport in order to connect safely with the en-route airspace structure. Aircraft will follow a designated route profile, including any altitude constraints, to a designated waypoint that forms part of the national airspace structure. As this ACP forms part of the FASI-S programme, the precise designated waypoints at the end of each SID are yet to be determined and will be developed by NATS as part of the London Airspace Management Programme (LAMP) Phase 2 ACP.

2.2.1 Runway 28 Departures

Figure 1 and Figure 2 in Annex A1 show all the possible options for departures from Runway 28. The red line extending from the runway indicates the route that aircraft could fly from the earliest possible turn after take-off. The blue arrows represent the directions that the aircraft could follow on departure and are representative only; aircraft could feasibly follow routes that are between the indicated arrows. The ends of the arrows represent the approximate location where the aircraft would reach 7,000 feet (ft) above mean sea level (amsl), the point at which they join the airways network above. In addition, the designed routes do not necessarily need to be straight lines and could involve turns in direction before reaching 7,000 ft. The different routes are depicted on two diagrams to avoid unnecessary clutter and, for instance, aircraft wishing to depart on a northerly heading could either continue to turn left after take-off until heading north (a 270° turn as shown in Figure 1), or turn right after take-off directly onto a northerly heading (as shown in Figure 2).

Figure 3 in Annex A1 depicts the region of airspace in which, departure procedures from Manston Airport would conflict with procedures from other airports, most notably London City, Biggin Hill, Southend and Gatwick. The 3,000 ft and 4,000 ft lines represent the points at which departing aircraft from Manston are likely to reach these heights and might interact with other airports' procedures. It would be feasible to plan the new procedures within this area but in this case, we will continue to liaise and coordinate with other FASI-S sponsors to resolve any interactions. Once aircraft reach the 5,000 ft line and shaded area, they are likely to conflict with these procedures, as well as the flow of air traffic in the airspace above (the London Terminal Manoeuvring Area (LTMA)) and the Danger Area EG D138. As such, the shaded area will become a constraint on the design options for Runway 28 departures.

2.2.2 Runway 10 Departures

Figure 4 and Figure 5 in Annex A2 show all the possible options for departures from Runway 10. The layout of these diagrams is the same as described for Runway 28 departures in paragraph 2.2.1 above.

Figure 6 in Annex A2 depicts the region of airspace in which, departure procedures from Manston Airport would conflict with procedures from other airports, most notably London City, Biggin Hill and Southend. After take-off, the aircraft could turn left or right, but in either case, the 3,000 ft and 4,000 ft lines represent the points at which departing aircraft from Manston are likely to reach these heights, and might interact with other airports' procedures. In this case, we will continue to liaise and coordinate with other FASI-S sponsors to resolve any interactions. Once aircraft reach the 5,000 ft line and shaded area, they are likely to conflict with these procedures, as well as the flow of air traffic in the airspace above (the LTMA) and the Danger Area EG D138. As such, the shaded area will become a constraint on the design options for Runway 10 departures.

2.3 Arrival - Transitions

The Transitions describes the route that the aircraft will take when arriving at an airport from the en-route network to the Initial Approach Fix (see paragraph 2.4) for an Instrument Approach Procedure (IAP). These are represented by the green arrows in Figure 7 (Annex A3) and Figure 10 (Annex A4).

2.4 Arrival - Instrument Approach Procedure (IAP)

The IAP is the final stage of flight as an aircraft arrives at the airport to land, detailing the route and descent profile that an aircraft must follow to ensure safe deconfliction from ground obstacles in the final, critical stages of flight. It also includes a Missed Approach Procedure (MAP) that details what the aircraft should do in the event of not being able to land off the approach. Manston Airport is planning on introducing IAPs that will use satellite navigation technology to guide the aircraft as well as procedures that utilise a ground-based Instrument Landing System (ILS) and Non-Directional Beacon (NDB). An ILS is a as a precision runway approach aid based on two radio beams which together provide pilots with both vertical and horizontal guidance during an approach to land; an NDB is a non-precision approach, as there is no vertical guidance, used by small General Aviation (GA) aircraft.

An IAP is designed to align an aircraft in a direction that will enable it to make a safe approach to land at the designated runway at an airport. Aircraft will need to be lined up with the runway from 5 nautical miles (nm) in order to carry out the approach procedure safely. Aircraft can carry out a maximum turn of a 90° in order to line up with the runway. This is indicated by the red lines perpendicular to the final approach track, shown in Figure 7 in Annex A3 (for Runway 28) and Figure 10 in Annex A4 (for Runway 10). Different approach procedures can be designed for intermediate positions, as shown by the additional red lines in these figures.

The red shaded areas in Figure 8 in Annex A3 (for Runway 28) and Figure 11 in Annex A4 (for Runway 10) show the region in which feeding traffic from the en-route network onto the approach procedure will be challenging due to the confliction with traffic flows on the arrival procedures for London City and Biggin Hill Airports. As such, the shaded area will become a constraint on the design options for the arrival transitions at Manston Airport.

Figure 9 in Annex A3 shows the possible options for the MAP for Runway 28 and Figure 12 in Annex A4 shows the possible options for the MAP for Runway 10. If aircraft are unable to land off an approach for any reason, they will execute the MAP which will involve a climb to a nominated altitude (generally approximately 2 – 3,000 ft) and proceed to a nominated position (the Hold) to await Air Traffic instructions to carry out a further approach procedure. The blue lines on Figure 9 and Figure 12 represent the routes that the aircraft could follow. No Hold positions have been indicated at this stage and it is anticipated that this will evolve from stakeholder discussions, but these procedures will again need to be cognisant of the arrival flows into London City and Biggin Hill Airports.

2.5 Design Envelopes – Your Input

RSP is requesting your input in relation to any areas on the figures in Annexes A1-A4 where you consider that the design envelopes should or should not be. It is these design envelopes that will ultimately contain the specific route options that will be shared with you for further consideration.

RSP is seeking any views or comments that stakeholders may wish to express regarding the comprehensive design envelopes shown in Annexes A1 to A4 below in order to refine the envelopes before developing some specific route options for the procedures.

2.6 How to Respond

2.6.1 By email

Please send us your comments and views via email to the following address:
manstonairspace@communityrelations.co.uk

It is important that individual email responses, subject heading 'Manston ACP Stage 2',
clearly show your name and contact details; this will allow us to cross refer to the emails we send out.

Please return any responses by **Friday 22nd May 2020.**

2.6.2 By Teleconference

If you wish to provide your input via a teleconference/online method, please send your contact details and preferred meeting method to the e-mail address above.

As described in paragraph 1.7, it is anticipated that the full public consultation will be conducted in 2021 and all participants will have a further opportunity to comment. RSP will ensure any views expressed at this stage will also be recorded and processed through to the full consultation.

A1 Runway 28 Departures

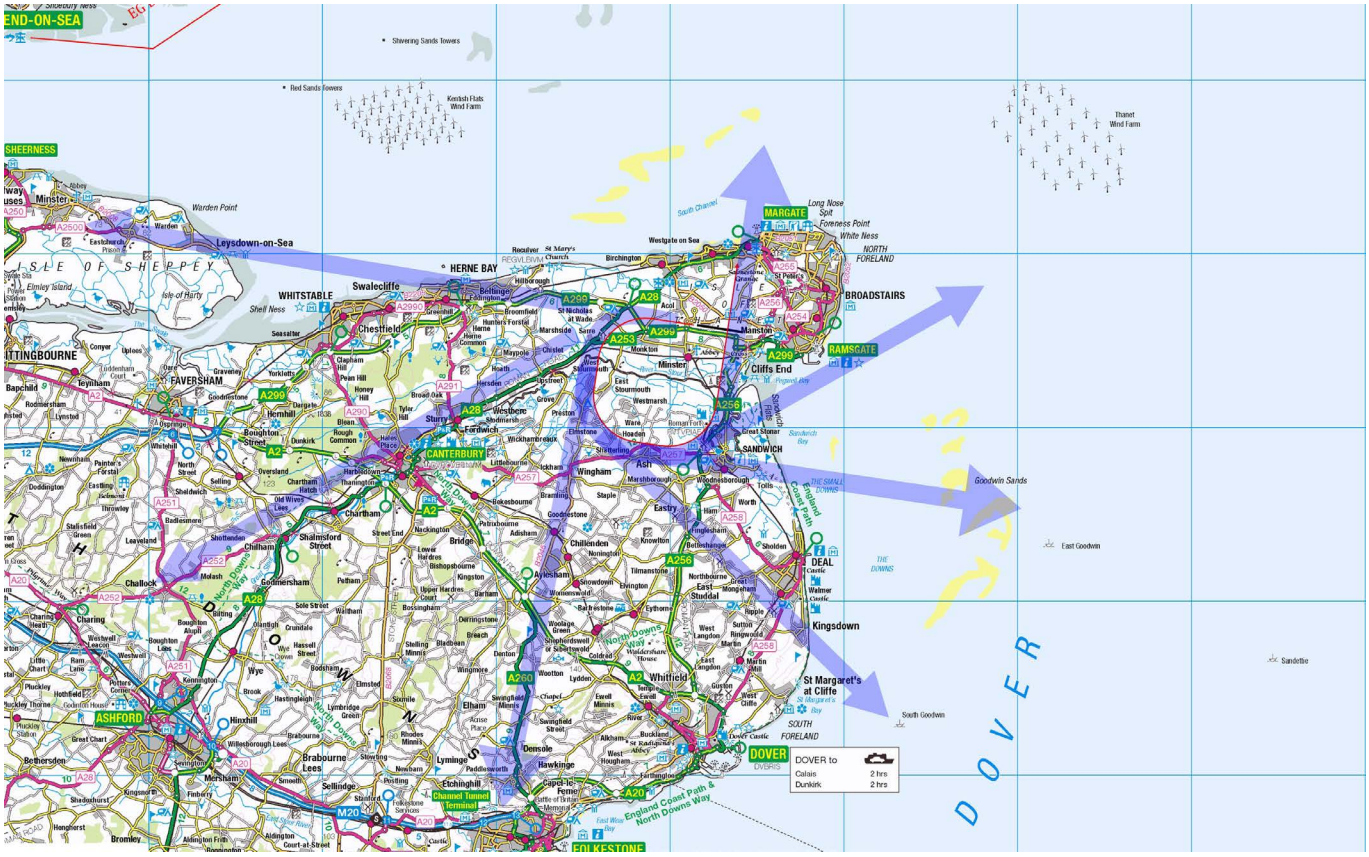

Figure 1 – Runway 28 Left-Hand Departures

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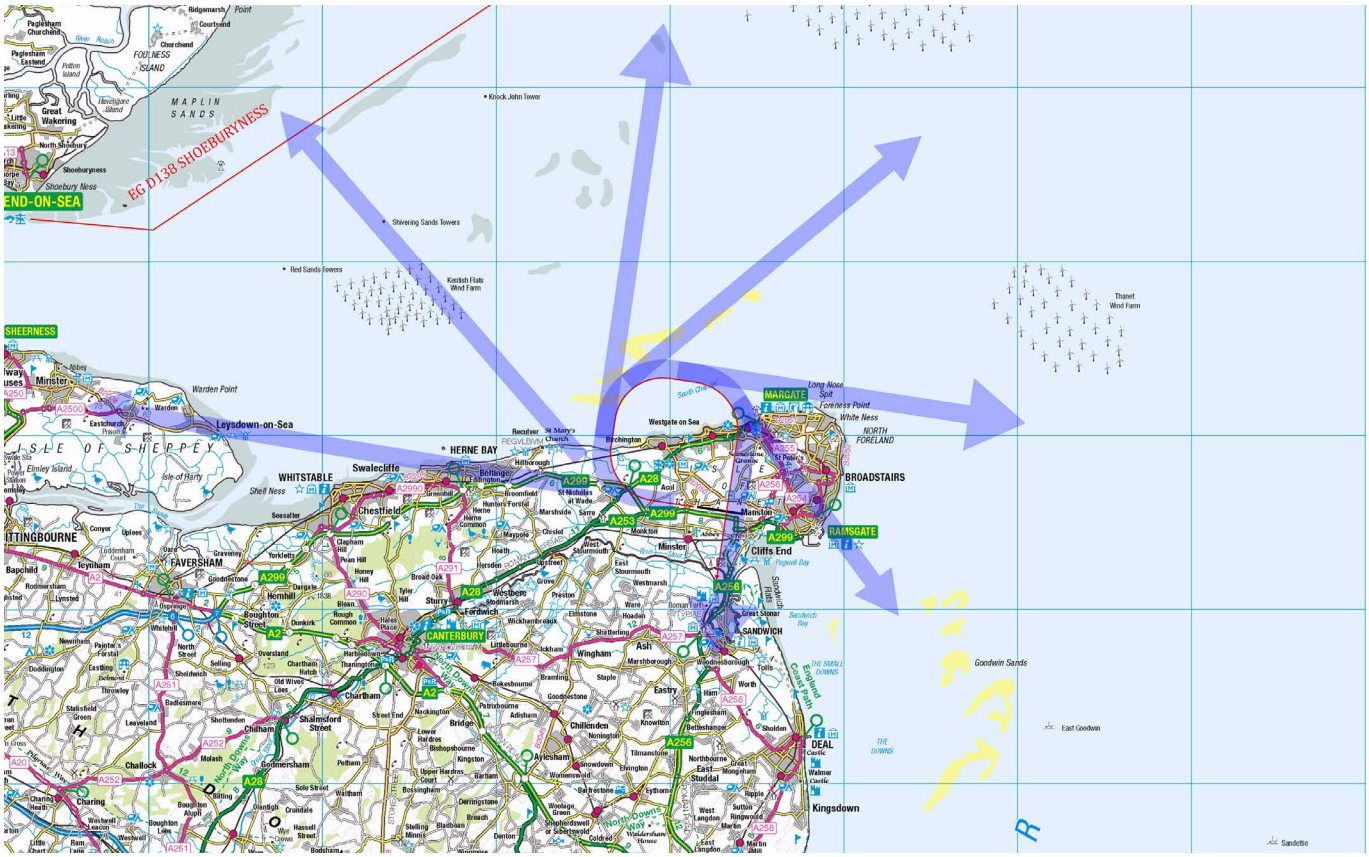

Figure 2 – Runway 28 Right-Hand Departures

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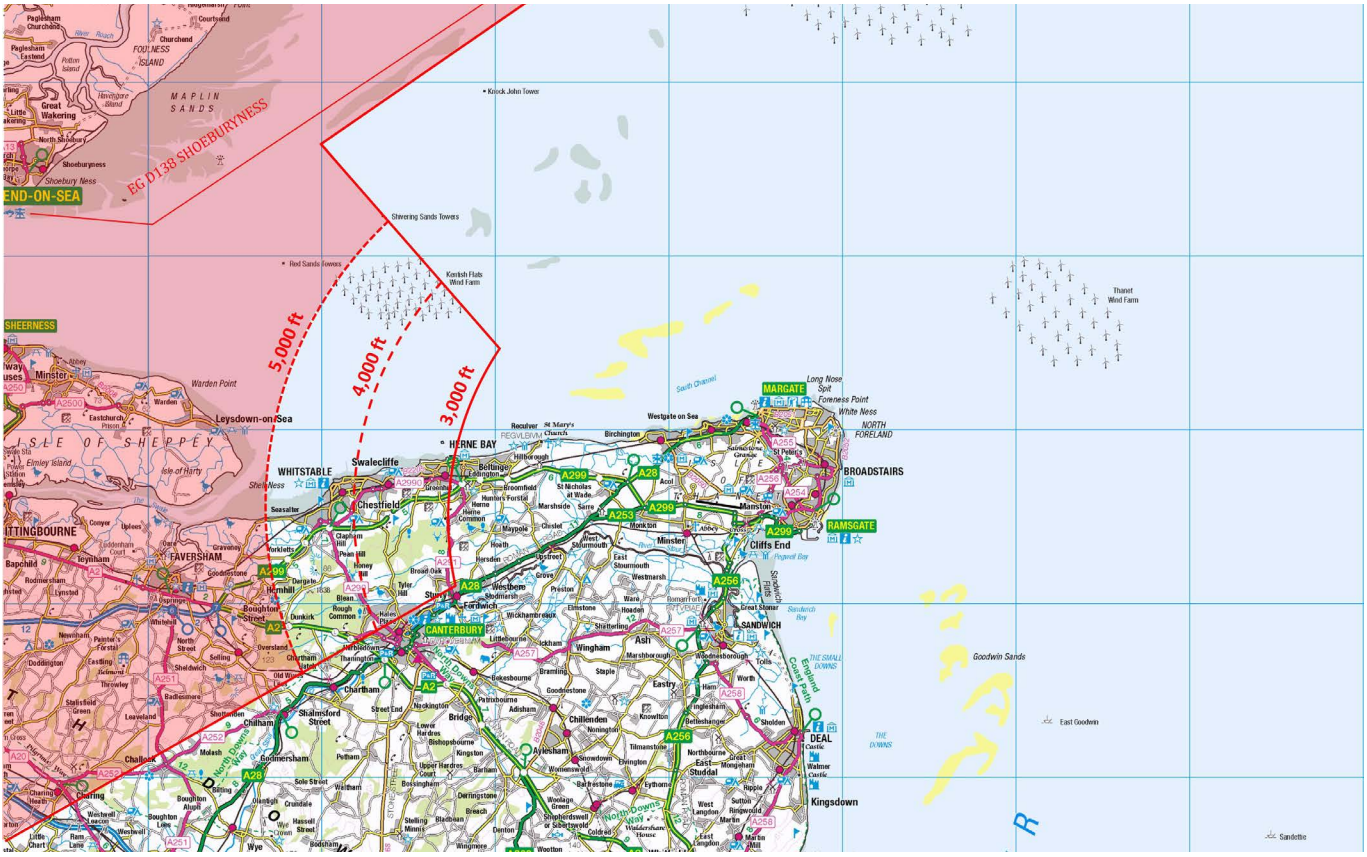

Figure 3 – Runway 28 Departures ANSP Constraints

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A2 Runway 10 Departures

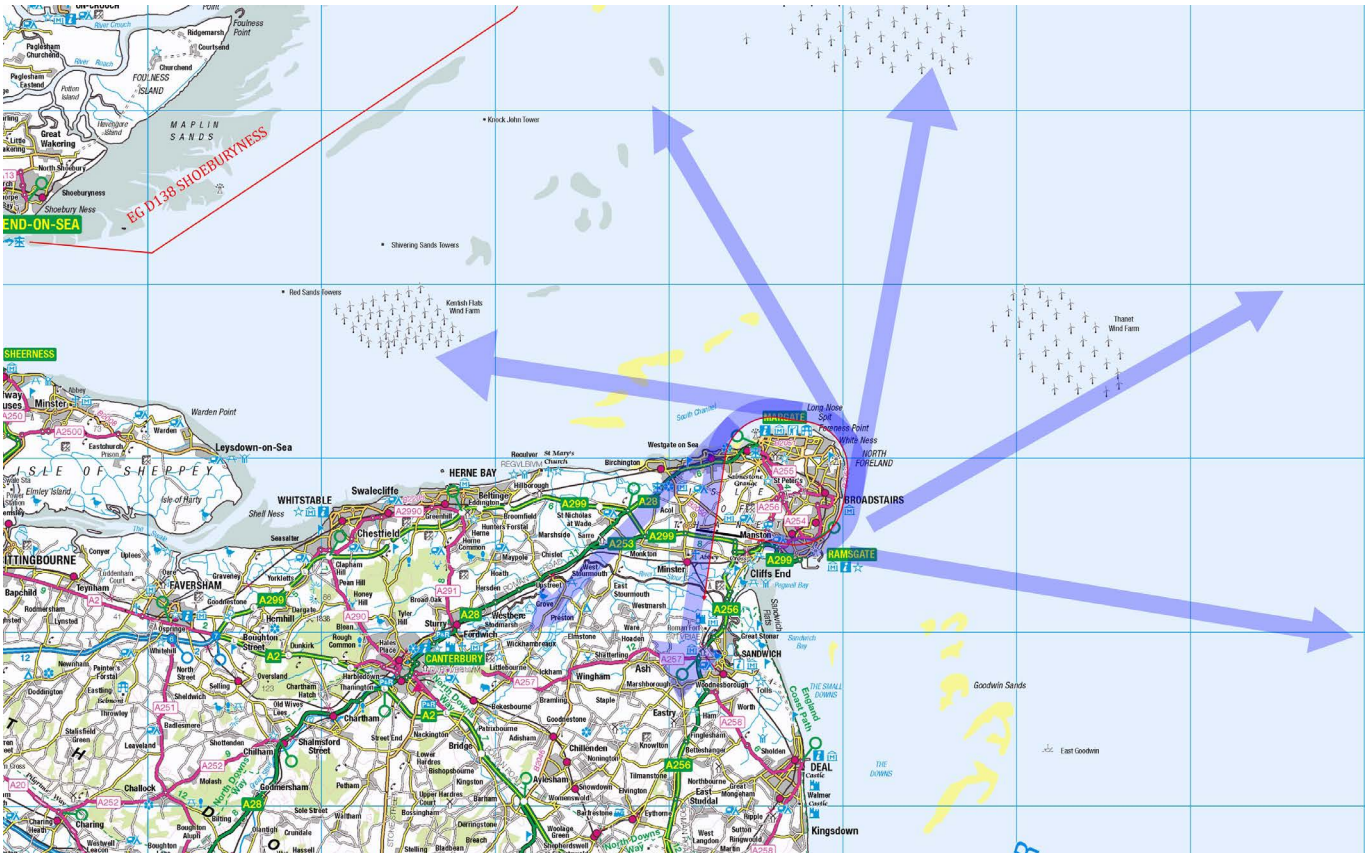

Figure 4 – Runway 10 Left-Hand Departures

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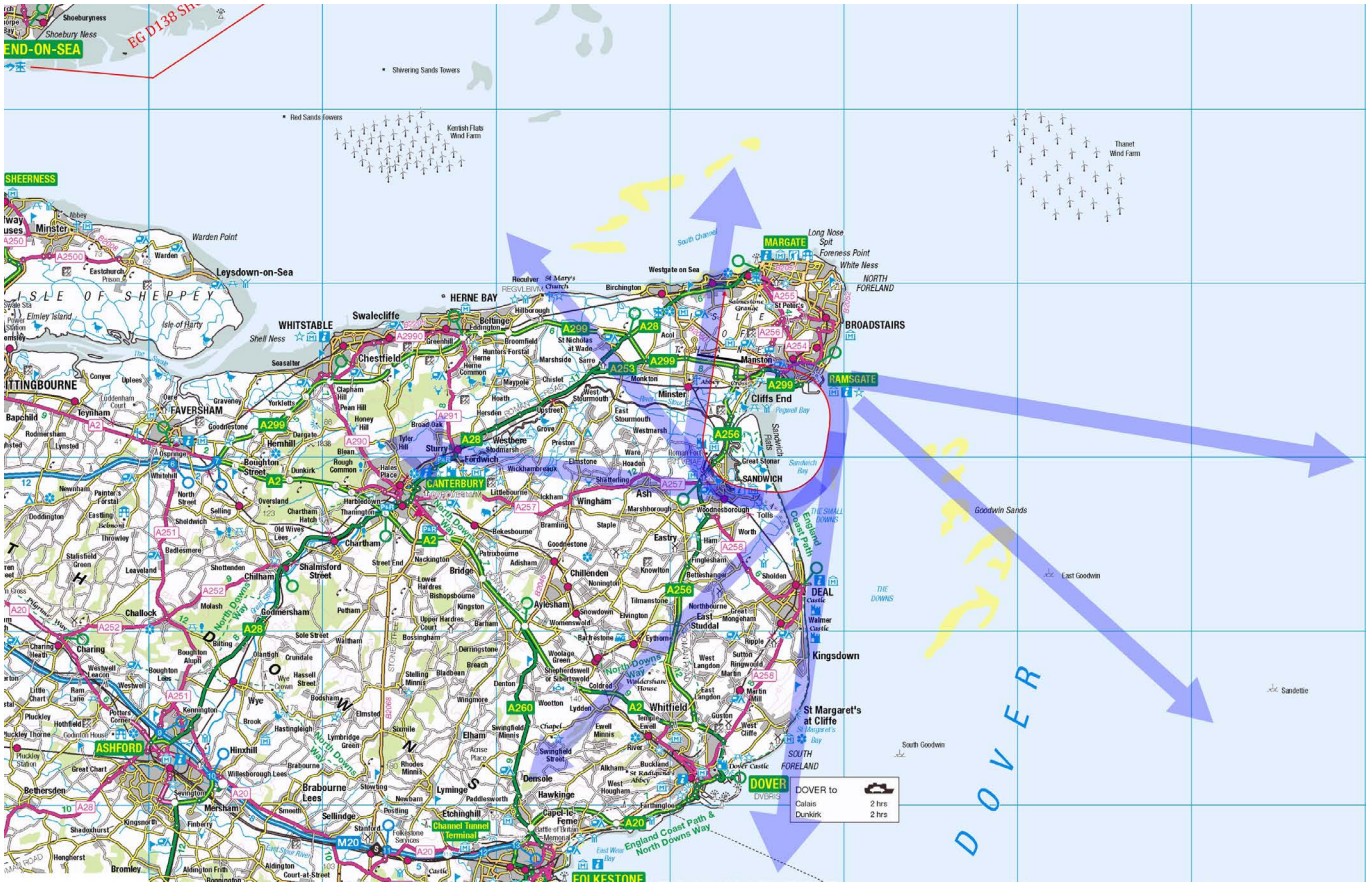

Figure 5 – Runway 10 Right-Hand Departures

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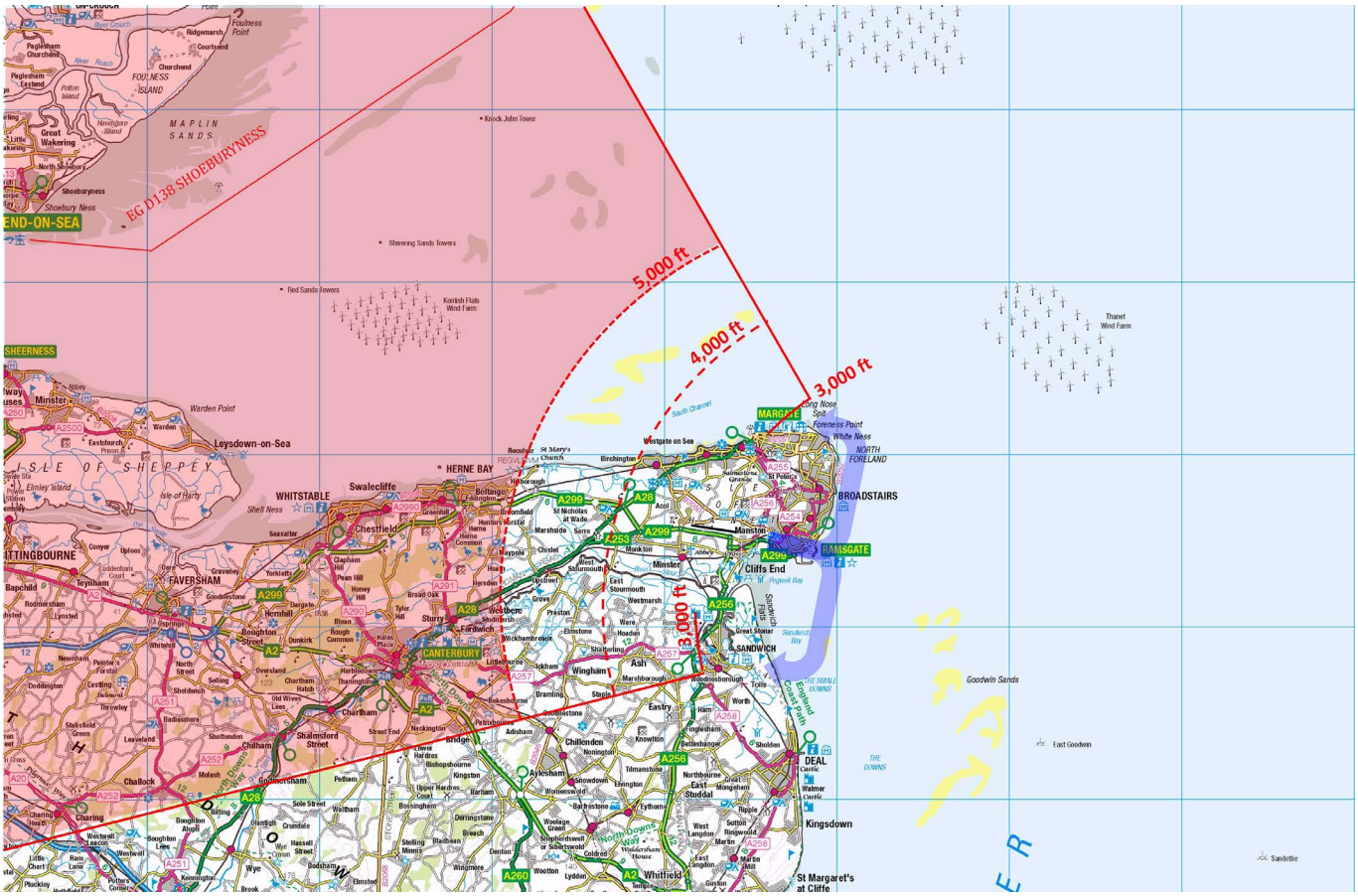

Figure 6 – Runway 10 Departures ANSP Constraints

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A3 Runway 28 Approach and Missed Approach

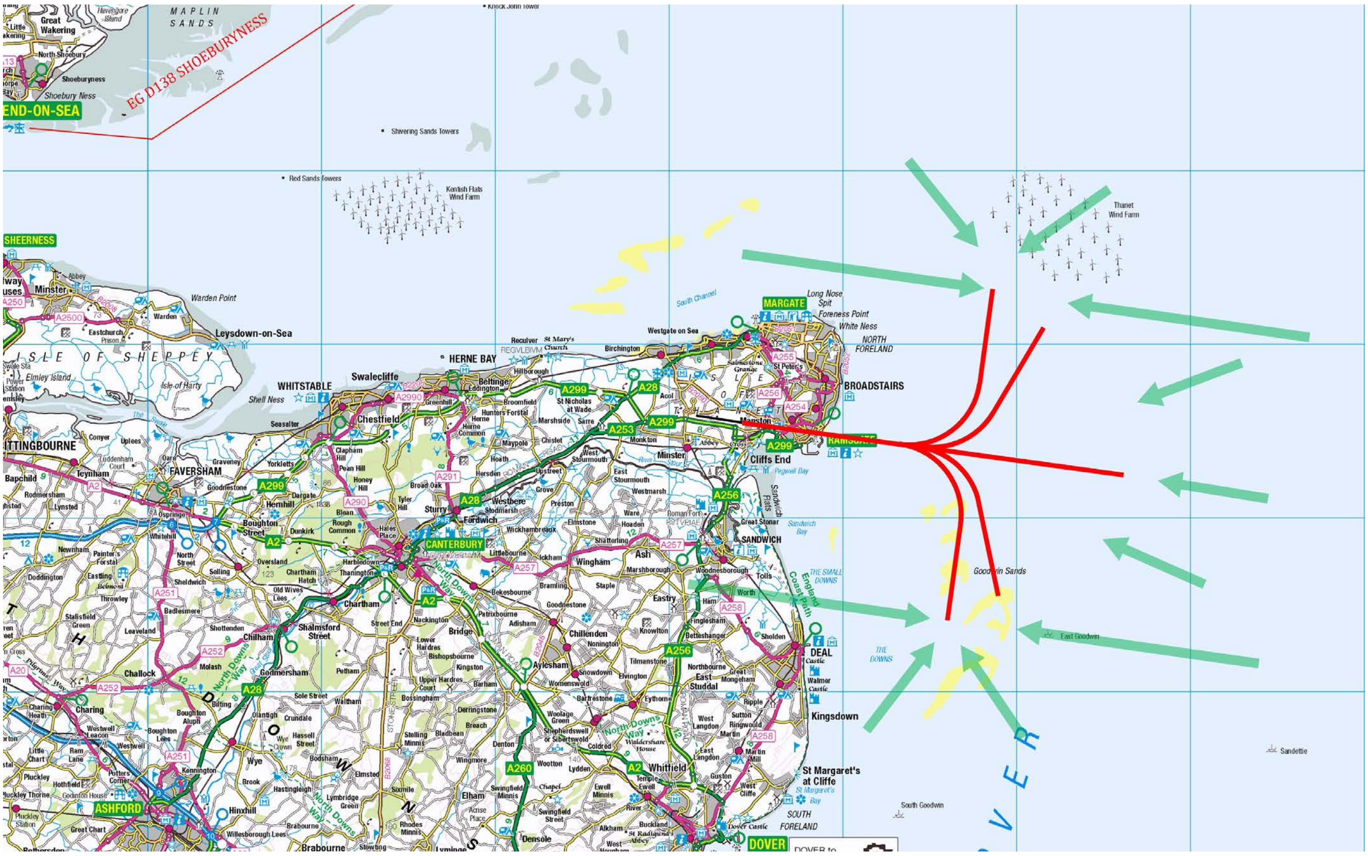

Figure 7 – Runway 28 Approach

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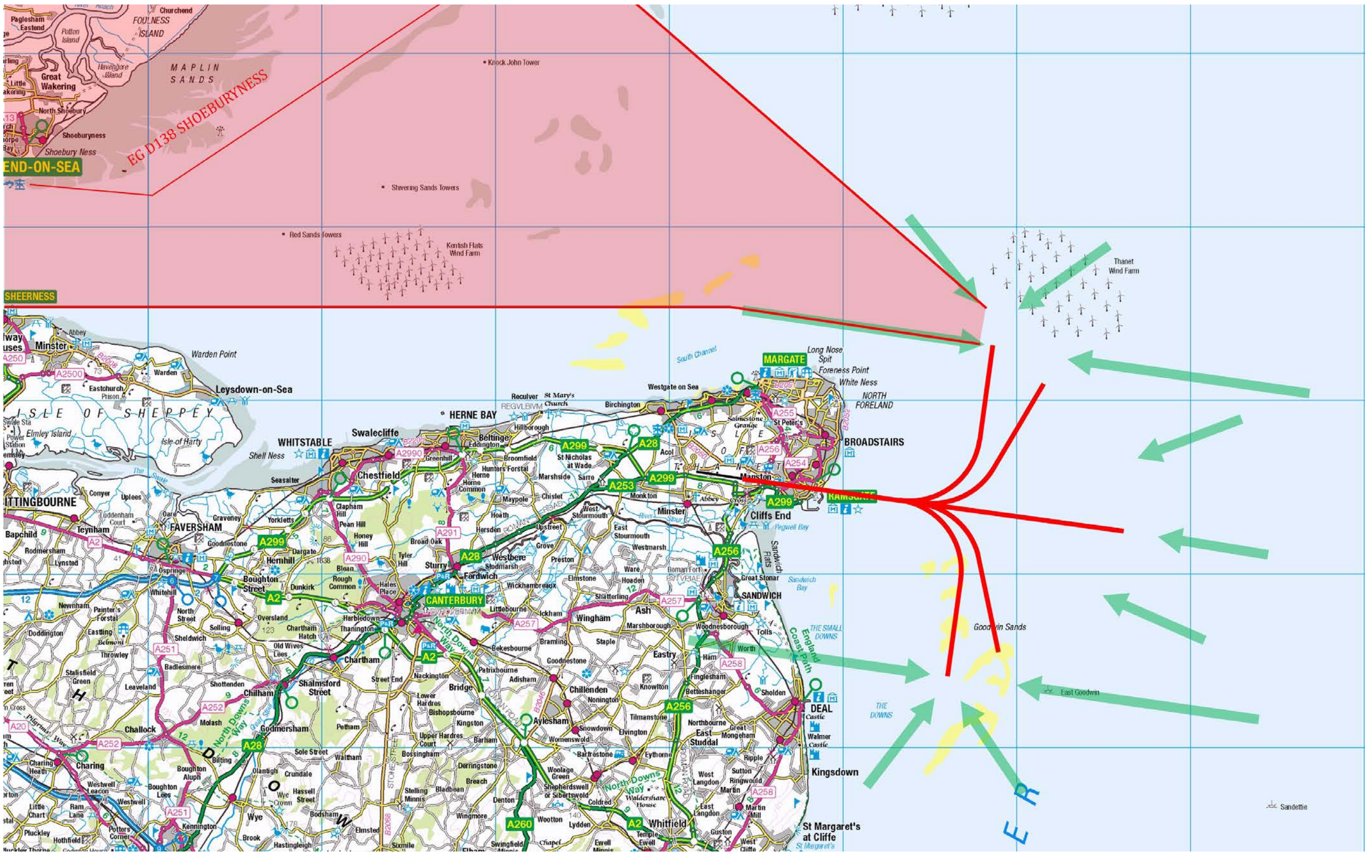

Figure 8 – Runway 28 Approach ANSP Constraints

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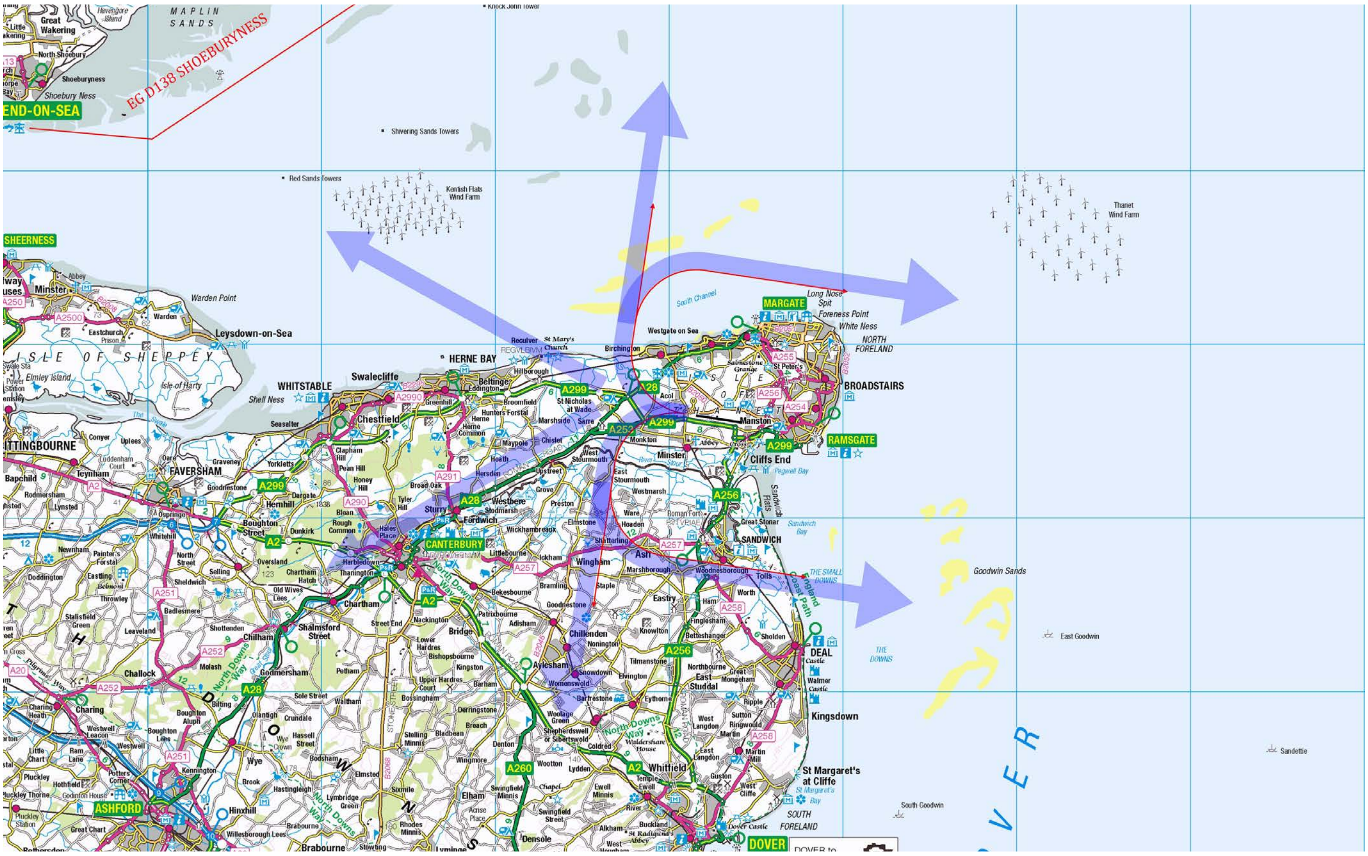

Figure 9 – Runway 28 Missed Approach

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A4 Runway 10 Approach and Missed Approach

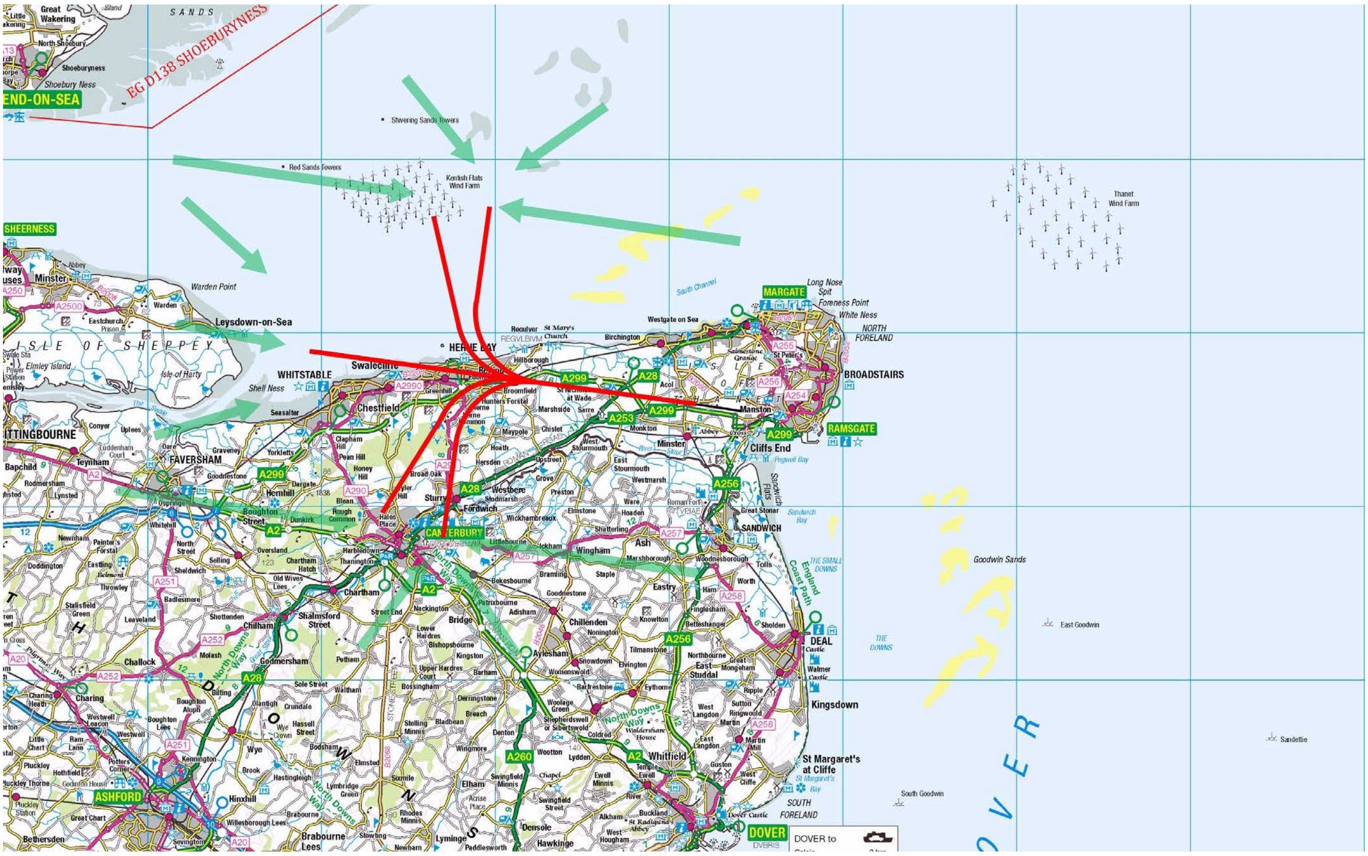

Figure 10 – Runway 10 Approach

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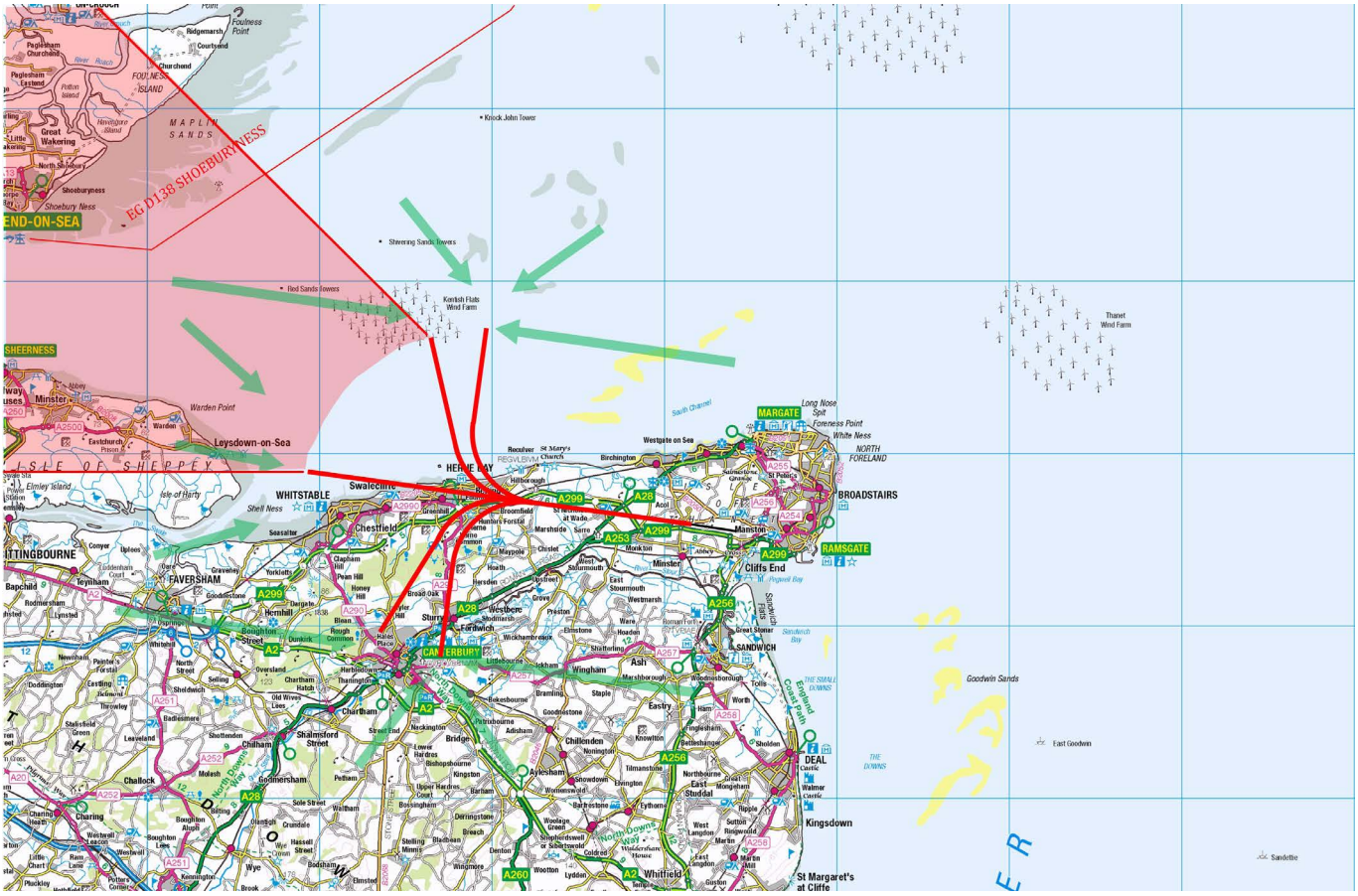

Figure 11 – Runway 10 Approach ANSP Constraints

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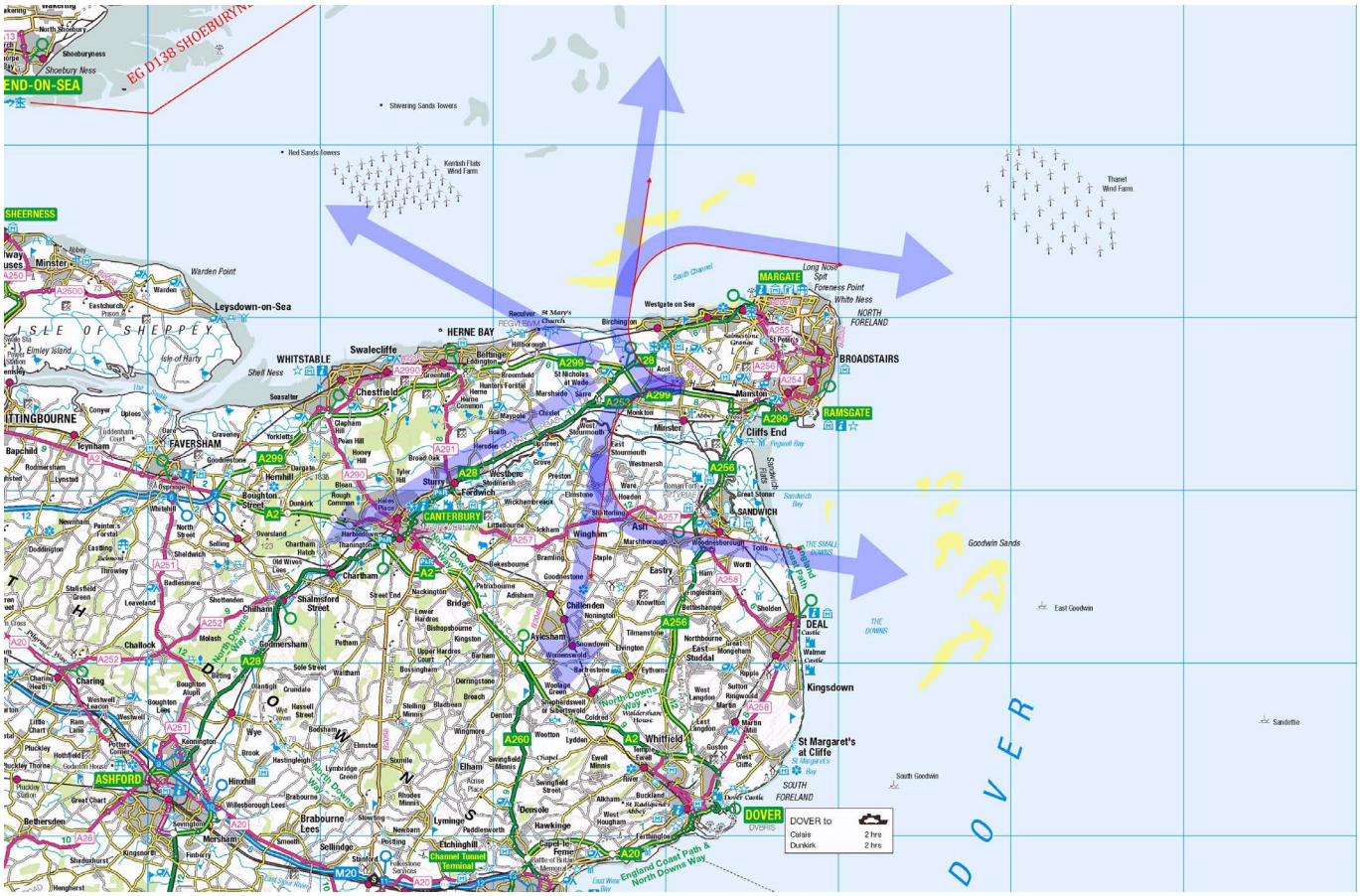

Figure 12 – Runway 10 Missed Approach

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