DEVELOPMENT PLAN STOCKHOLM ARLANDA AIRPORT

Chapter 1 – Executive summary

Version 2024:1 of 1 November, 2024

Swedavia Airports

DEVELOPMENT PLAN STOCKHOLM ARLANDA AIRPORT

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The plan consists of the following chapters:

Development Plan Arlanda version 1.0

Background and Principles

The Arlanda Development Plan has been created in a first version that will be maintained and updated approximately every two years or as needed.

The goal of the work has been to create a plan for how the airport will develop over time to meet current and future demand for air travel in a safe, cost-effective, and sustainable manner.

The development plan will guide the development of the airport until around 2040 but should not be tied to a specific year. According to the 2023 forecast that forms the basis of the development plan, the number of passengers will be 34-35 million by 2040. A completed development plan should create the conditions for an operationally efficient airport with the right capacity and a focus on the passenger experience.

Business acumen has been the guiding principle in developing solutions for the development plan. The cost of each solution must be related to the expected capacity and associated revenues.

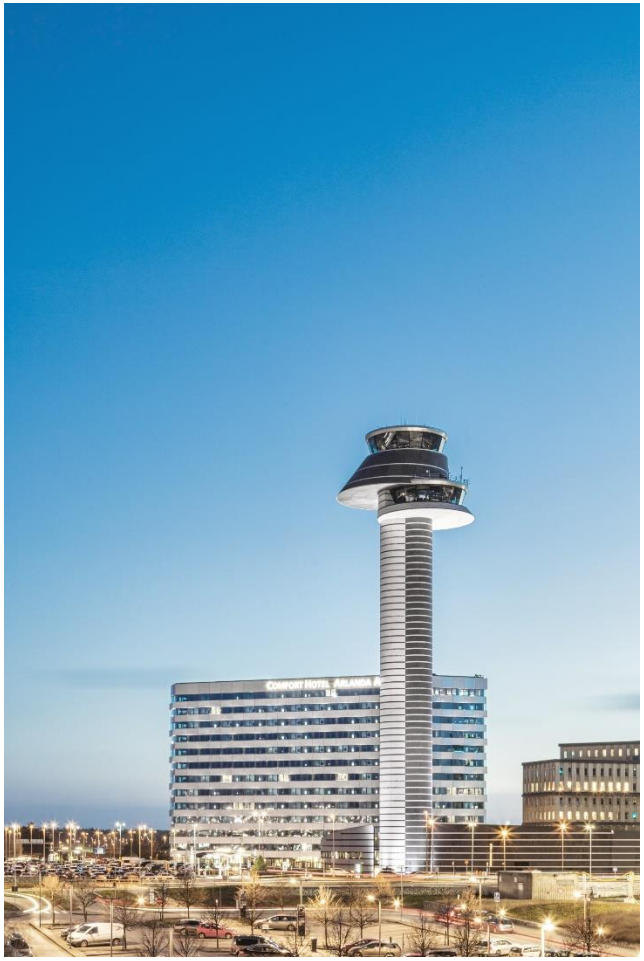
The four-step principle, which is an approach to planning, has been applied in the work. The four-step principle means that possible improvements should be tested step by step and includes the following steps: 1) Reconsider, 2) Optimize, 3) Rebuild, and 4) Build new.

Since 2022, the former Terminal 4 has been integrated with Terminal 5 and is now part of the latter. Terminal 2 is planned to be merged with Terminal 3, but the terminals are presented separately in the first version of the development plan.

Swedavia has recently made significant investments in a new security checkpoint and marketplace, as well as preparations for a new baggage system in Terminal 5. To fully benefit from these investments, the expansion of Terminal 5 needs to be completed. Therefore, during the planning period, investments in terminal development are primarily focused on Terminal 5. A major expansion of Terminal 2 is beyond the planning period.

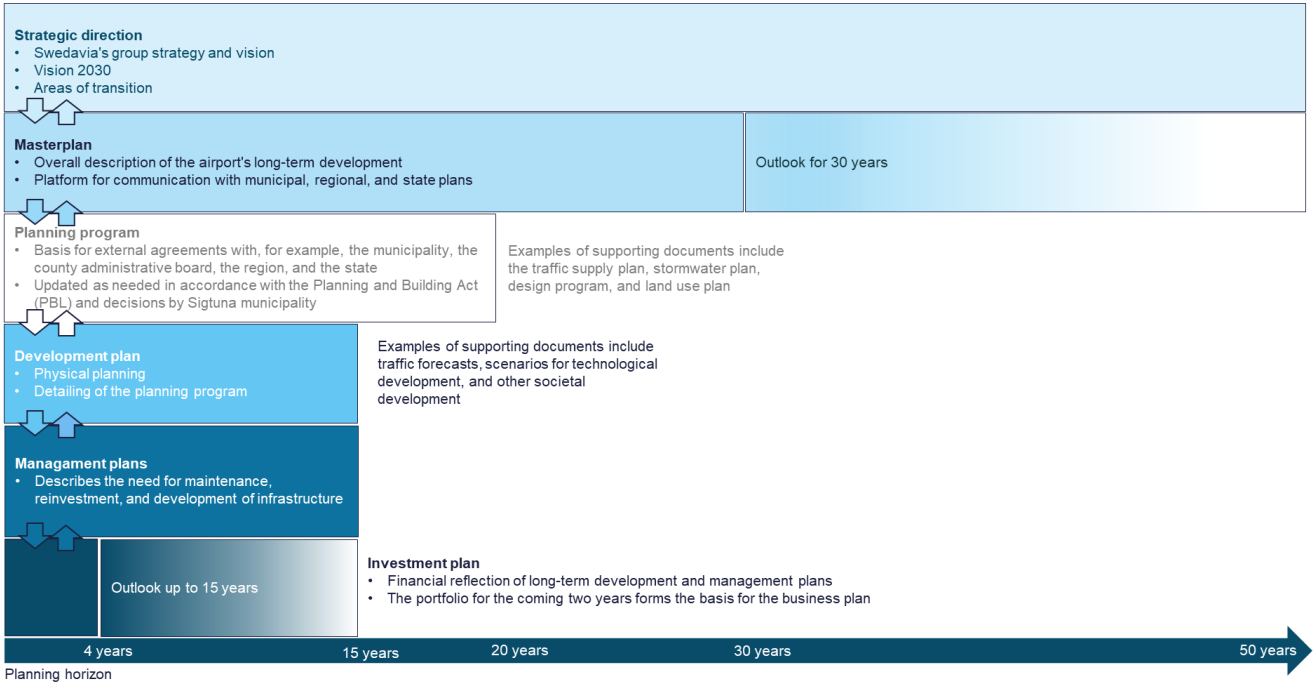
The four-step principle has been applied in the work on the development plan.

An approved development plan does not imply an approved investment framework; funding needs to be secured for each proposed measure.



The control tower at Stockholm Arlanda Airport.

Swedavia's Plan Hierarchy



The figure shows the placement of the development plan in Swedavia's planning hierarchy.

The Arlanda Development Plan is one of the plans that guide the physical planning of the airport. The planning is described with varying levels of detail and different time horizons according to a plan hierarchy illustrated in the figure to the left.

The plans become more concrete the further down in the hierarchy they are found, and the plan at each level represents a concretization and detailing of the levels above.

The plans are revised more frequently the further down in the hierarchy they are found. Changes to a plan at a certain level can lead to changes in plans both upwards and downwards in the hierarchy.

In addition to the plans that guide physical planning, several other plans need to be developed within product development, business development, and process development. The implementation of these should lead to minimizing investments in the physical expansion of the airport.

Forecasts and Scenarios

The traffic forecast according to Scenario 19 from 2023 forms the basis for this first version of the development plan, see table.

The planning period has been set to 2040 to manage the effects of a potential closure of Bromma Stockholm Airport after 2038 when Swedavia's agreement with the City of Stockholm expires.

The announced removal of the aviation tax or the transfer of air traffic from Bromma to Arlanda (both announced in September 2024) are not included in Scenario 19. However, both measures suggest that the proposed actions in the development plan need to be implemented as soon as practically feasible. It seems difficult to accelerate the implementation of the plan further, as the implementation of the proposed measures is estimated to require at least the time specified.

Traffic programs that show the traffic structure over the day, distribution by aircraft types, destinations, etc., have been developed for the following annual volumes of passengers and movements:

- 25 million passengers (year 2025)
- 29 million passengers (year 2030)
- 32 million passengers (year 2035)
- 34 million passengers (year 2040).

Forecasted traffic development of flight movements and passengers according to a 2023 scenario for Arlanda until 2038.

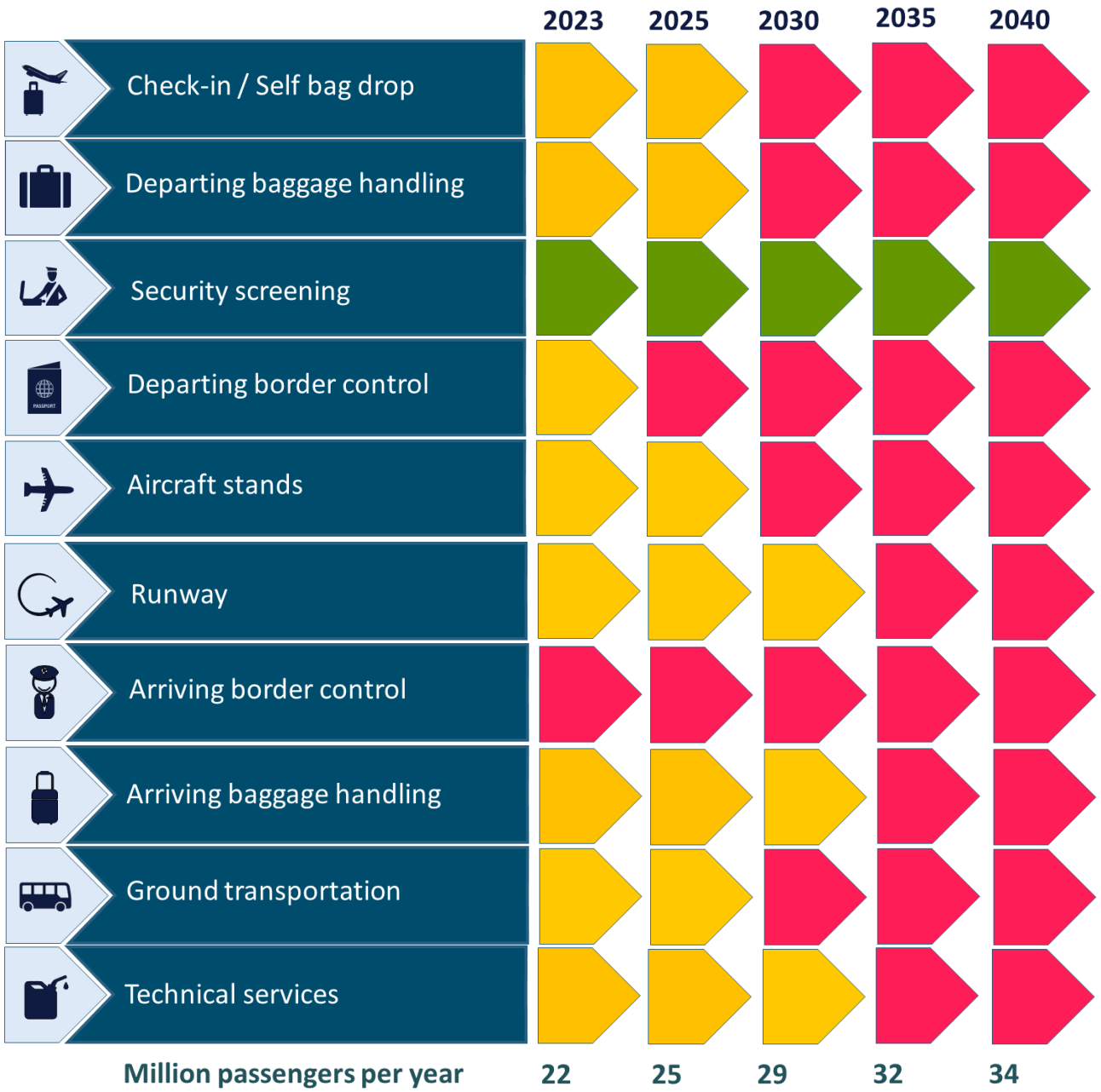
Year	Aircraft movements			Passengers		
	International	Domestic	Total	International	Domestic	Total
2019	171,000	58,000	230,000	20,800,000	4,860,000	25,600,000
2022	123,000	42,000	165,000	15,300,000	3,160,000	18,400,000
2025	155,000	47,000	202,000	21,100,000	3,940,000	25,010,000
2030	175,000	51,000	226,000	24,500,000	4,350,000	28,880,000
2035	190,000	52,000	242,000	27,400,000	4,480,000	31,860,000
2038	198,000	52,000	250,000	28,900,000	4,540,000	33,460.000

Capacity Needs

Bottlenecks

Analyses of ten airport processes in Terminal 5 show that the capacity of the border control for arriving passengers is already very strained, often leading to queues. All other processes, except for the security checkpoint, are heavily burdened and would become very strained over time if no measures are taken. The relatively newly opened security checkpoint in Terminal 5 has a capacity estimated to last beyond the planning period.

The goal for the development plan has been to develop business-oriented solutions, which means that process “traffic light” can be allowed to stay yellow for some time before it is deemed commercially justified to rebuild or expand the infrastructure. Therefore, a yellow process traffic light is not in itself a reason to initiate a rebuild or expansion.



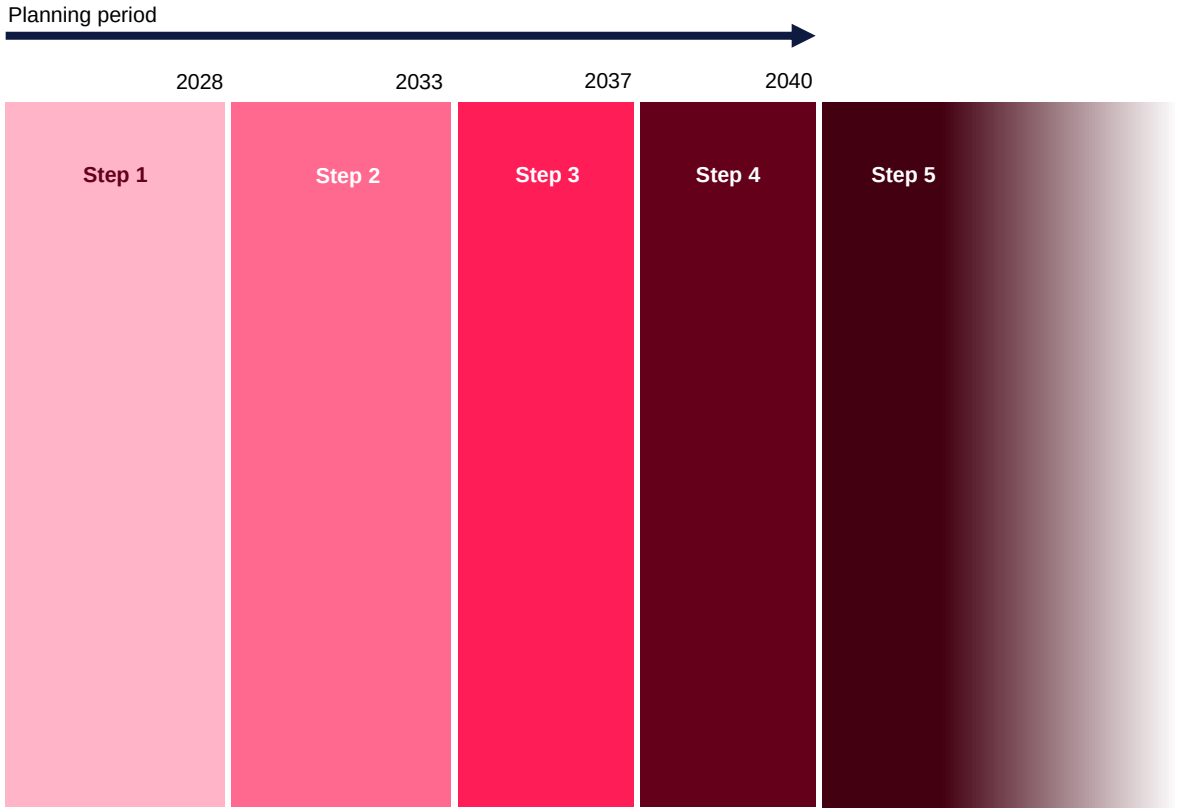
Proposed Solutions

Expansion Steps

The proposed measures in the development plan have been grouped into major expansion steps, with steps 1 to 4 falling within the planning period. Some identified measures are not planned to be implemented until after the planning period and are grouped into step 5. Additional measures will be added to step 5 over time.

Originally, the intention was to group the measures into steps corresponding to a certain passenger volume, but it later became more natural to group the measures based on when they are expected to be completed. When all steps up to and including step 4 are completed, the airport is expected to handle 34-35 million passengers per year.

The following images highlight the final year of each step: 2028, 2033, 2037, and 2040. Only measures completed by that year are shown in the highlight. Other measures are ongoing but are only presented when they are completed.

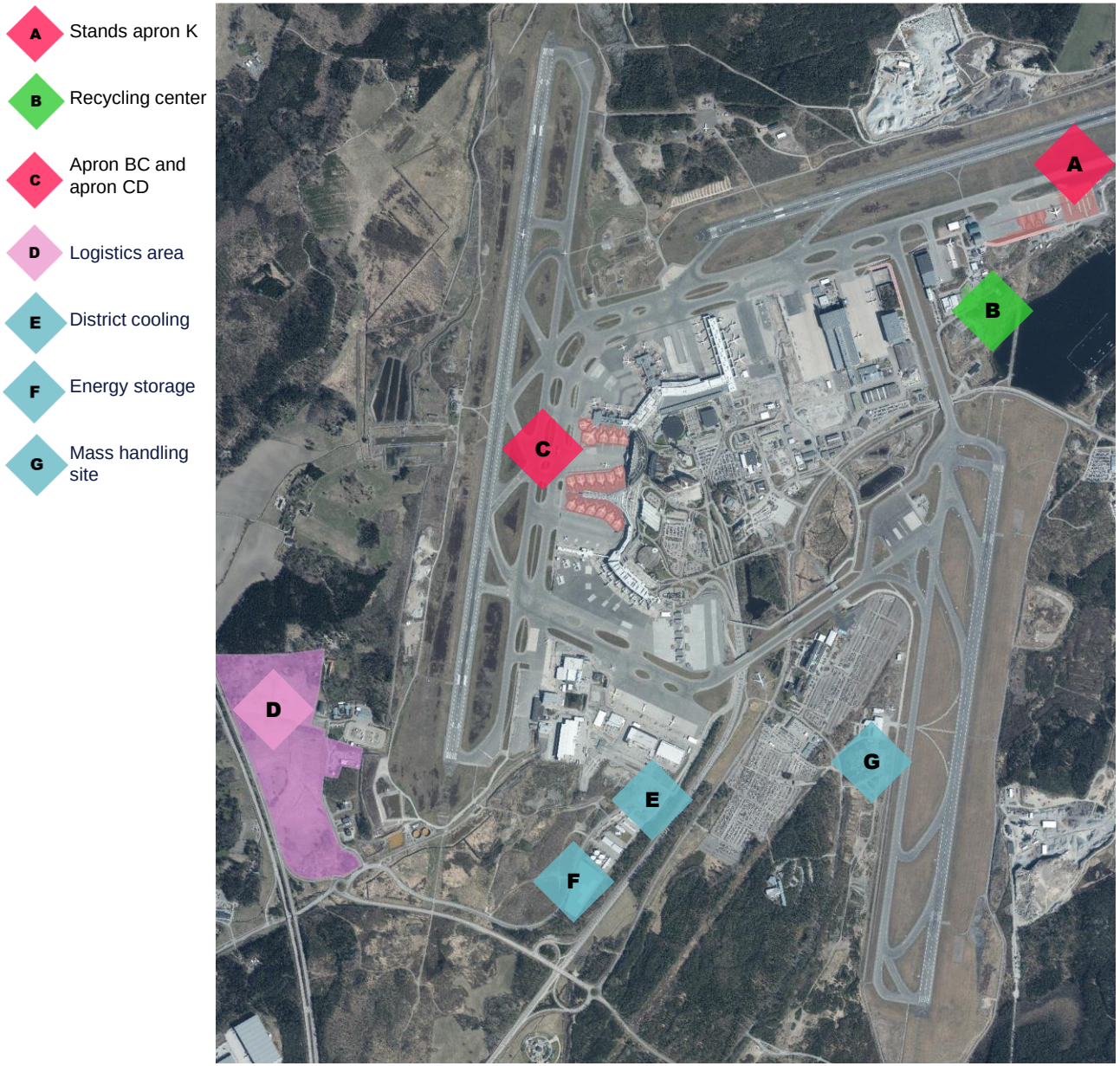


Step 1 – Completed 2028

During step 1, minor measures are implemented to increase the capacity of the airport's various processes. This way, airport operations can be maintained until a larger capacity step is taken with the new pier constructed in step 2. The measures in step 1 mean that the processes can be visualized with a yellow traffic light. This provides a slightly lower service level than a process with a green traffic light, lower redundancy, and a higher risk of disruptions, but only during a small part of the year's days.

A facility for the production of district cooling is established to meet the increasing cooling needs as pier G is constructed in step 2. The existing recycling center is relocated to make room for the new pier and is established in a new location. A mass handling site is established within the airport area with access to both airside and landside to handle masses from various types of projects.

Energy storage is set up at one of the airport's receiving stations for electricity to evaluate the role of the technology in the airport's electrical system.



Work on renovating aprons and aircraft parking stands began in the fall of 2024. Closures of the airport’s apron areas will occur in stages over a long period to minimize the impact on the airport's capacity.

A number of remote aircraft parking stands need to be created to compensate for the apron closures and for the terminal parking stands that need to be removed in step 2 while pier G is being constructed.

The work to achieve simplified door-to-door travel begins in step 1, including better access and the start of construction of a new bus terminal in connection to Terminal 5, which, together with a new entrance tot the terminal, will improve the passenger experience through increased orientation, attractiveness, and convenience. The bus terminal and the new entrance will be completed in step 2.

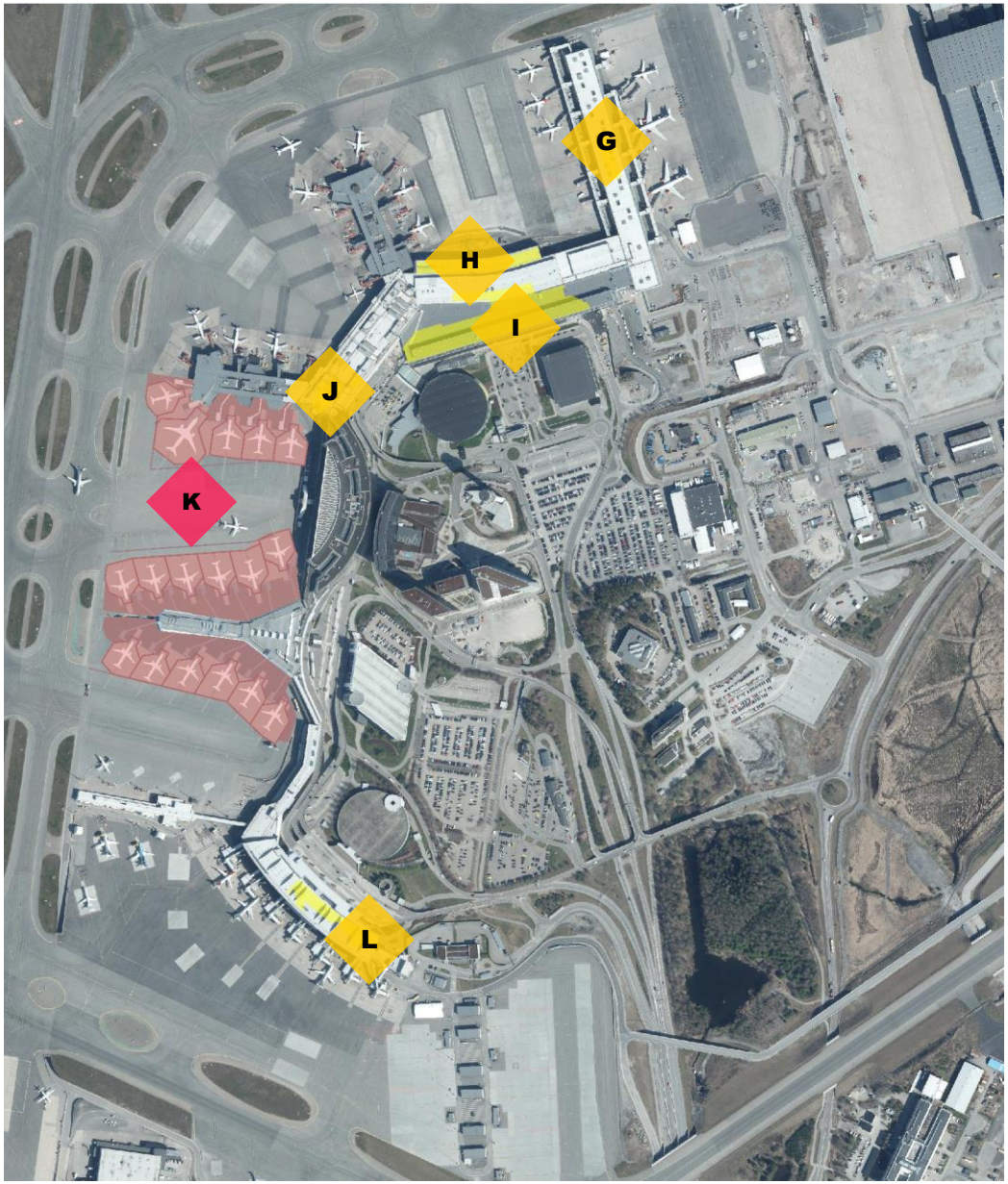
Additional remote stands for aircaft

To handle the increased use of remote aircraft parking for a period, more bus lounges will be created in pier F.

Until the new baggage handling system in pier G is completed in step 3, temporary facilities for baggage sorting will be created in the existing terminal building. The baggage claim hall will be expanded and supplemented with more baggage carousels for arriving baggage.

A new customs filter will be established adjacent to a new arrivals hall with improved areas for waiting, including restrooms, commercial areas, information desks, etc. Passenger flow areas will be improved, and orientation towards exits and access points will be enhanced.

Some adjustments to Terminal 2 are necessary in step 1 to meet security checkpoint requirements, etc.



- G Bus gates
- H Sorting of departing baggage
- I Baggage claim belts, new customs filter, and arrival hall
- J Check-in
- K Apron BC and apron CD
- L New security checkpoint

Measures are being taken to increase the use of self-service check-in and to guide the development towards system solutions that can be used by the majority of airlines. Additional check-in counters are placed where there is space. Areas are freed up in the departure hall for better passenger flow between Sky City and the security checkpoint in Terminal 5. Further measures are being taken to improve passenger flows and orientation.

Measures are being taken to increase automation and the possibility of self-service

Step 2 – Completed 2033

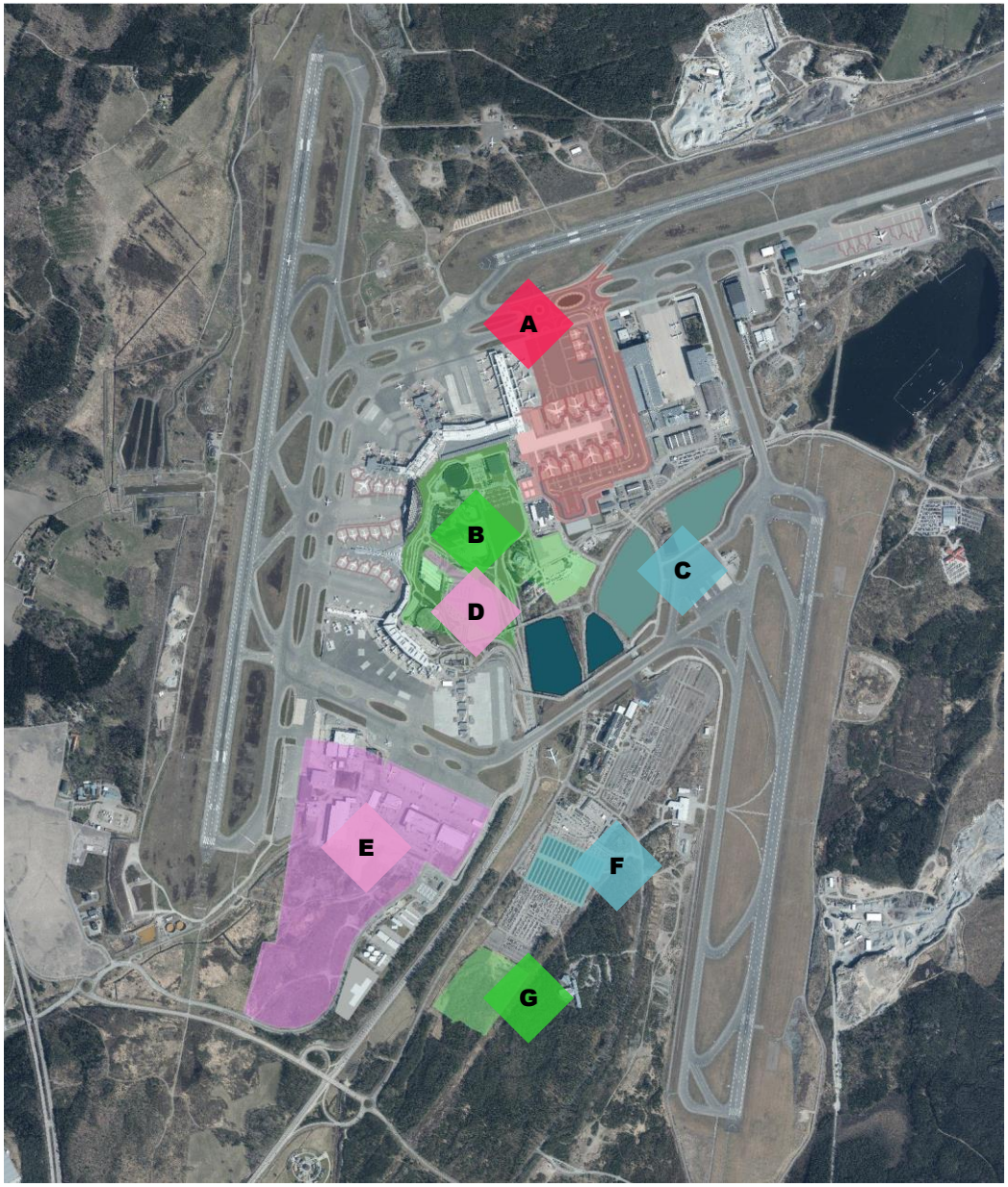
The expansion in step 2 is dominated by the construction of a new and modern pier G with an additional 14 aircraft parking stands at the terminal. The 14 parking stands can alternatively be used for parking seven larger aircraft (code E).

Work continues to create efficient access to the terminals, and bus access is possible again at Terminal 5.

Measures are being taken to streamline and increase the capacity of the airport's stormwater management.

Swedavia's real estate company, Real Estate AB, is building the next phase of the airport city within "Sky City Northwest," including a new hotel, and is developing logistics operations within the "Cargo City" area.

Long-term parking Beta is being expanded southwards, both to increase the number of parking spaces and to compensate for the Alfa area (north of Beta) being used for other purposes, and these parking spaces need to be replaced. To enable green electricity production, it should be investigated whether parts of the beta parking area can be equipped with solar panel roofs over the parking spaces.



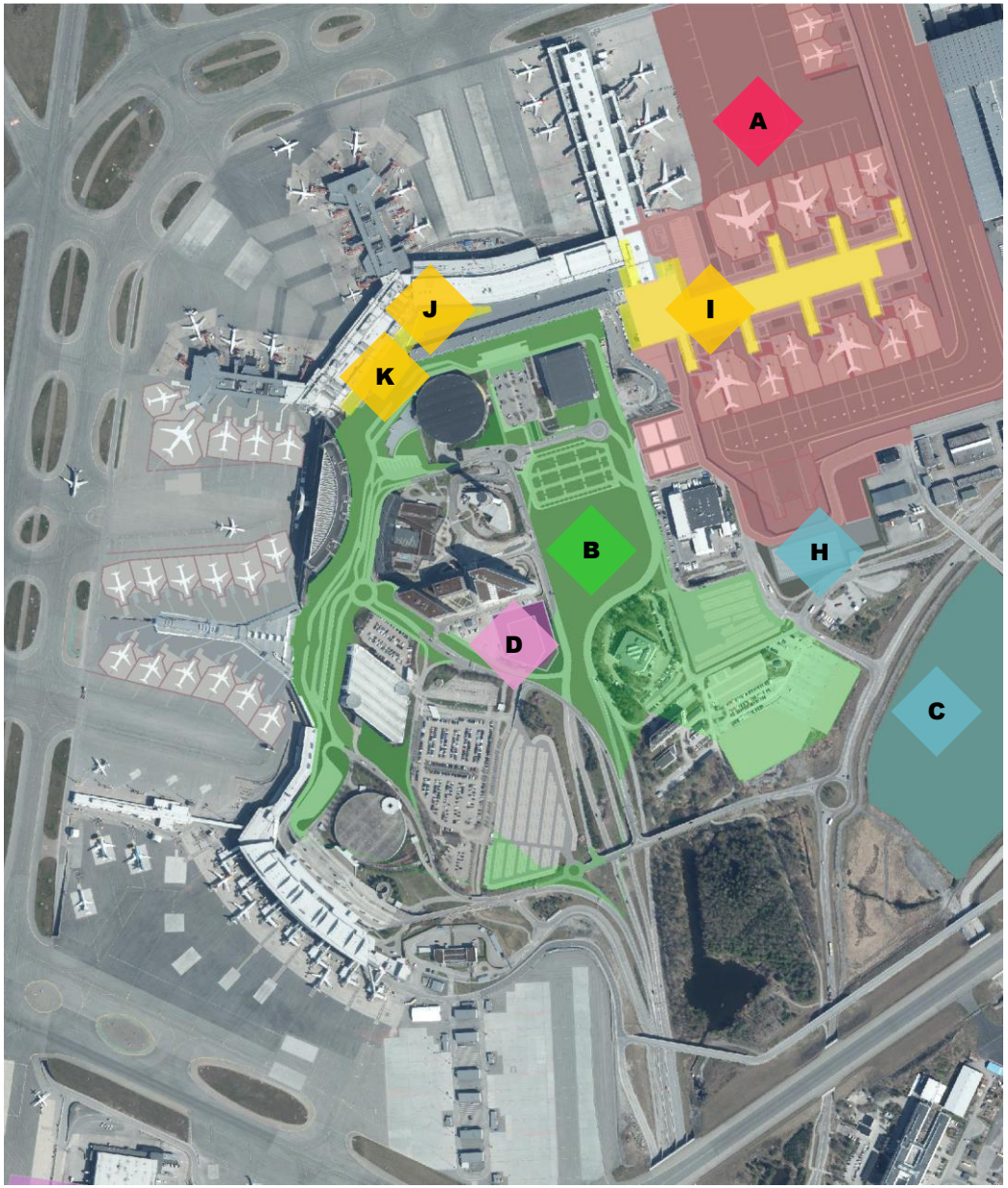
- A – New apron and stands at pier G
- B – Airport access roads and terminal curbside
- C – Stormwater facilities
- D – Next phase of airport city, hotels
- E – Logistics operations
- F – Solar panels
- G – Expansion of parking lot Beta

14 new gates will be built in gate area G, which will have two floors, one for Schengen/domestic traffic and one for non-Schengen traffic.

In the area connecting pier F with the upcoming pier G, border controls will be created for both departing and arriving non-Schengen passengers, as well as a new transfer center with a transfer security checkpoint. This contributes to Swedavia's goal of simplifying door-to-door travel through smoother flows. With a new efficient border control, Arlanda's attractiveness as a transfer airport increases.

A new entrance will be created for Terminal 5 outside the existing terminal facade. The entrance will have new escalators and elevators between the floors, facilitating efficient flows of both arriving and departing passengers. The new entrance will be connected to a new adjacent bus access point. The check-in hall will be expanded by taking adjacent areas into use. This provides the necessary width for an efficient bidirectional flow and also makes it possible to expand the queue areas for check-in counters and check-in kiosks to reduce congestion.

A new drinking water reservoir will be established to meet the increased need for drinking water driven by property development and the expansion of Terminal 5.



- A: New apron areas and parking spaces at pier G.
- B: Airport access roads and terminal curbside
- C: Stormwater facilities
- D: Next phase of airport city, hotels
- H: Water reservoir
- I: New gates and gate areas, new border controls
- J: Arrival hall
- K: New entrance and expanded walkways

The southern side of Pier G.

The interior of Pier G.

Step 3 – Completed 2037

In step 3, a new redundant power connection will be established at a suitable location to strengthen the airport's power supply and increase the robustness of the power supply system.

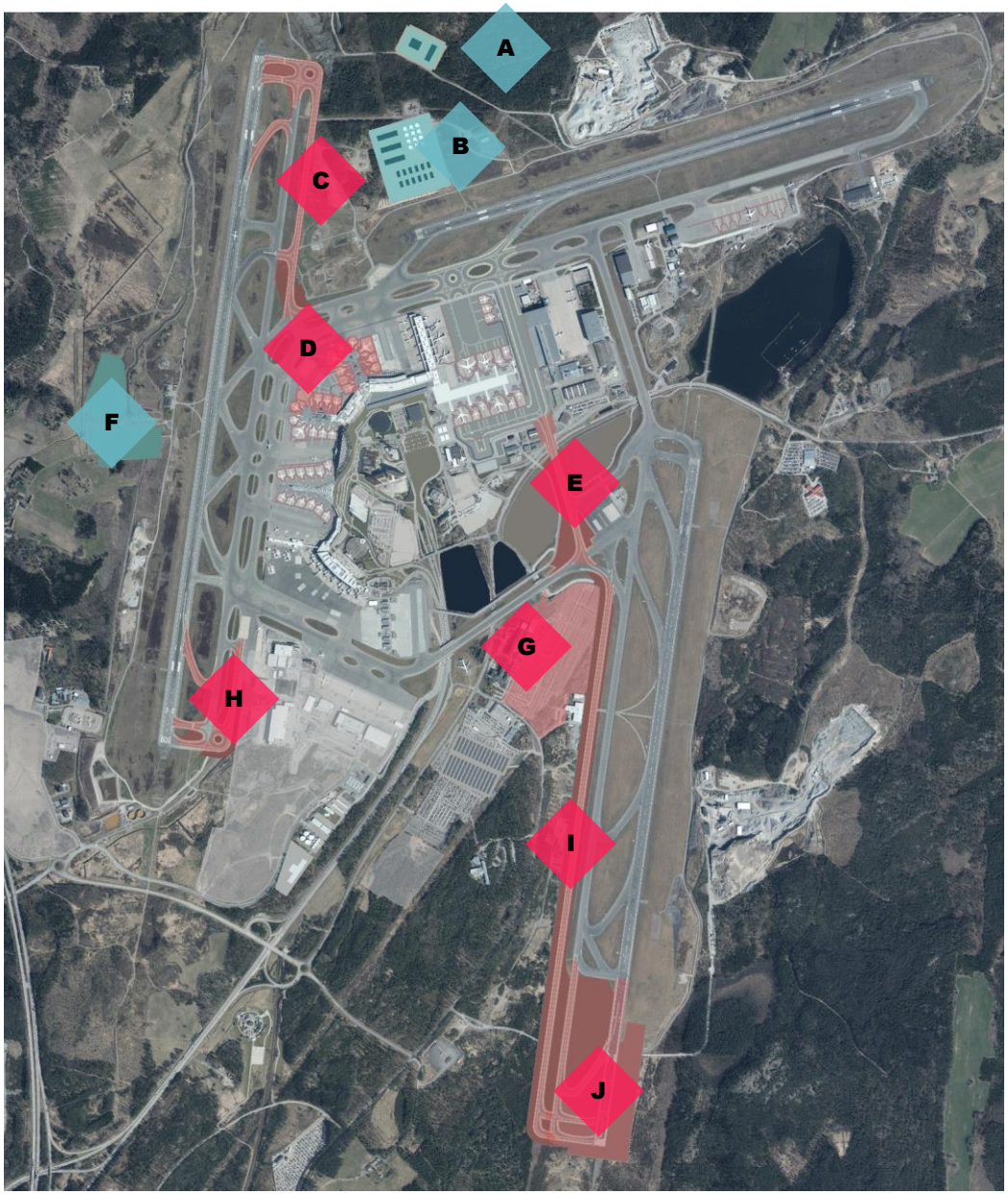
The placement of a future hydrogen facility for delivery of liquid hydrogen to parked aircraft via storage modules needs to be further investigated.

Measures will be taken to avoid bottlenecks that could hinder high-capacity usage on the runways. Dual taxiways need to be constructed along runway 1 and runway 3. A taxiway bridge will be built from Pier G to apron M, and another taxiway bridge may be constructed from the area of runway 1 to runway 3. This is important to maintain an efficient ground flow of air traffic with future simultaneous takeoffs and landings on both parallel runways. Runway 3 (01R/19L) may be extended southwards to allow takeoffs with heavily loaded aircraft.

Further measures will be taken to develop stormwater management following decisions on the future structure and design of the stormwater system.

A detailed development plan will be developed for area Alfa, which is currently used for car parking and is reserved for airport operations in the future.

- A – Redundant power connection
- B – First phase for hydrogen production
- C – Extended taxiway
- D – Apron AB
- E – Taxiway bridge from apron G to apron M
- F – Stormwater facilities
- G – Area Alpha for airport operations
- H – Extended taxiway
- I – Dual taxiway
- J – Extended runway 3

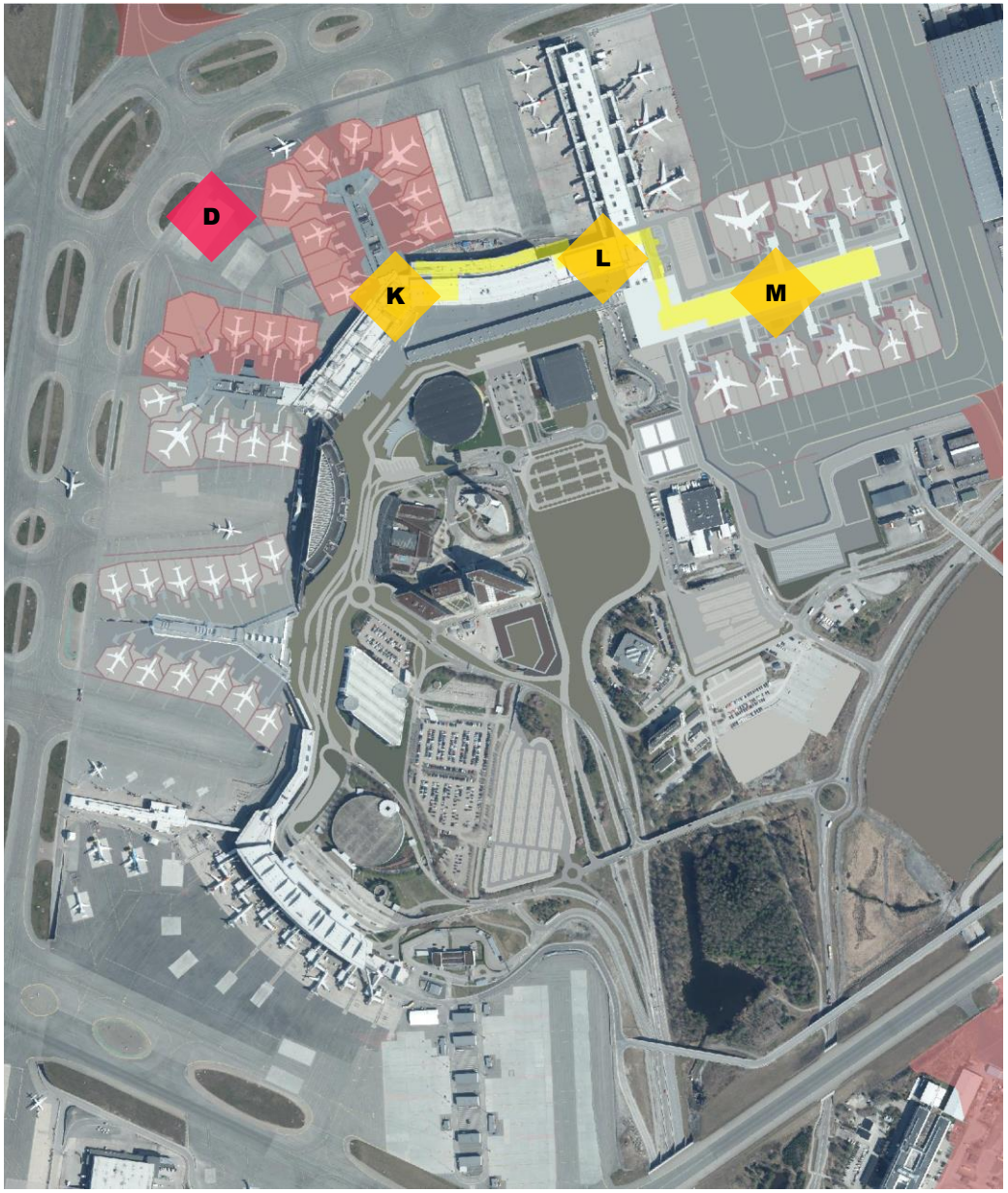


Runway 3 (01R/19L)

The marketplace in Terminal 5 can be expanded with more restaurants and shops now that the existing border control has moved to the new border control area connecting gate areas F and G.

More check-in positions will be created after the relocation of commercial units to the terminal's new entrance. Additionally, several existing check-in positions will be upgraded to handle larger baggage.

A new and modern baggage facility will be installed in Pier G with baggage sorting and a dynamic baggage hotel.



D Apron AB

K Check-in

L Expanded marketplace

M Baggage facility

Baggage sorting

Expansion of the taxiway and runway system

New bus terminal at Terminal 5.

Step 4 – Completed 2040

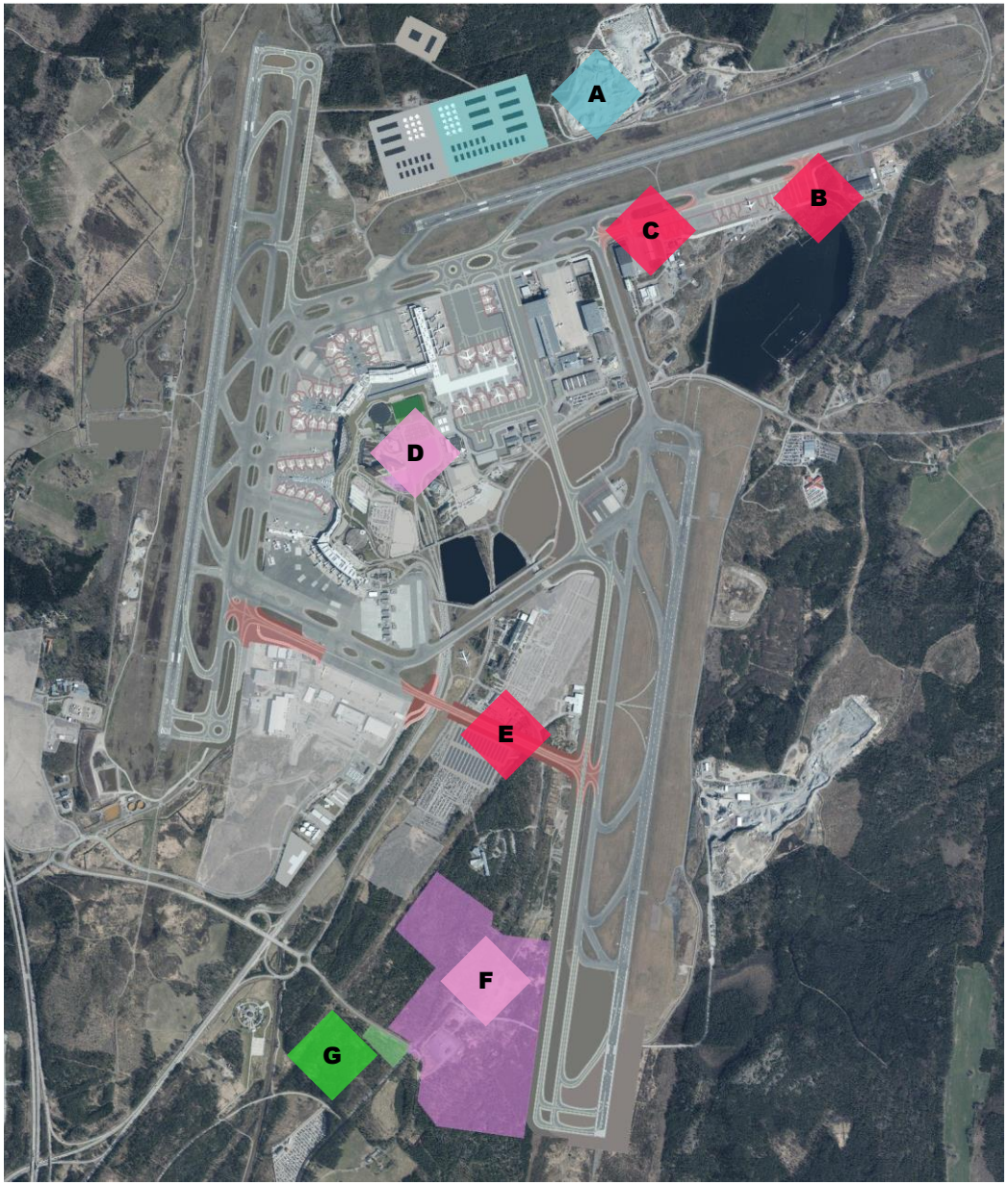
Areas are reserved for future large-scale hydrogen production for aircraft operations at the airport. Facilities for the storage and distribution of hydrogen are planned adjacent to the production facility.

The number of remote parking positions for passenger aircraft can continue to be expanded in two additional phases if needed.

Swedavia Real Estate's (REAB) plans for this period include the development of the Sky City Northeast area and a new area for heavy air freight adjacent to an extended runway 3.

Another taxiway bridge will be constructed from the area of runway 1 (01L/19R) to the area of runway 3 (01R/19L) as part of the effort to create efficient ground movements for air traffic.

The larger goods reception area may need to be relocated to a new location as part of the preparation for the expansion of Terminal 2.



- A – Production and storage of hydrogen.
- B – Phase 3 remote stands
- C – Phase 4 remote stands
- D – Sky City Northeast
- E – New taxiway bridge
- F – Air cargo area
- G – New checkpoint

Step 4 – Completed 2040

In step 4, additional baggage claim carousels for arriving baggage will be added in an expanded baggage hall in Terminal 5.

There is a possibility to complete the final stages related to terminal curbside access, which may result in a new ground transportation access building at Terminal 5.

Preparations will begin to expand Terminal 2 with a new pier, a new processor, etc., after the planning period.

In the area of technical supply, there will be an expansion of district cooling, power supply, and energy production and storage.

D Sky City Northeast

H Baggage hall

I Passenger drop-off facility

Fully expanded access building at Terminal 5

Arrival hall Terminal 5

After implementation

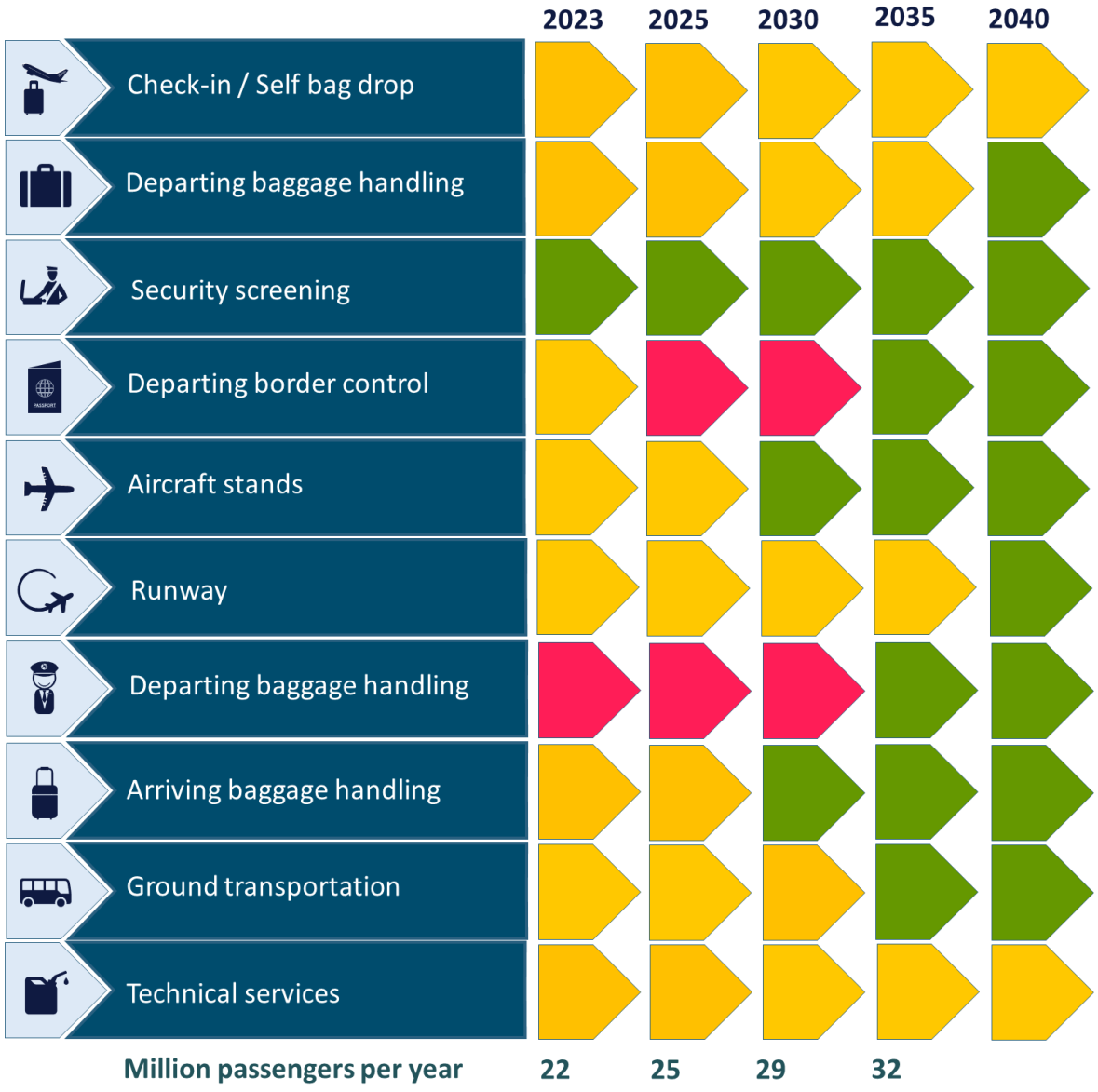
Impact on processes

When the development plan is fully implemented, Terminal 5 will be fully expanded. The processes in Terminal 5 will be adjusted to handle the traffic volume for which Terminal 5 is designed. Any additional traffic growth beyond the planning period will be managed in an expanded Terminal 2.

Through dedicated efforts to develop and increase the proportion of self-service check-in and by developing unified technical solutions for check-in used by most airlines, a major expansion of the check-in hall can be avoided. Depending on the success of these efforts, along with phased minor modifications and expansions of the check-in areas, the process can be illustrated as yellow throughout the planning period, even with the expected traffic increase. If technological development leads to a larger-scale behavioral change, the process may eventually be visualized as green.

The departing baggage process will be green in 2040 when the baggage system in Pier G is completed in step 4. Until then, operations will be able to continue thanks to temporary baggage sorting solutions.

The relatively newly opened security checkpoint in Terminal 5 has a capacity expected to last beyond the planning period.



The border control process for departing passengers and parking positions is illustrated as green when Pier G is completed in step 2.

The runway is illustrated as green in step 3 when runway 3 is extended and the taxiway system is expanded.

Border control for arriving passengers will have high capacity upon the completion of Pier G and is illustrated as green in 2035.

The airport access roads and terminal curbside system is illustrated as green when the necessary road adjustments are completed in step 2 and the access at Terminal 5 is fully expanded, including an access building.

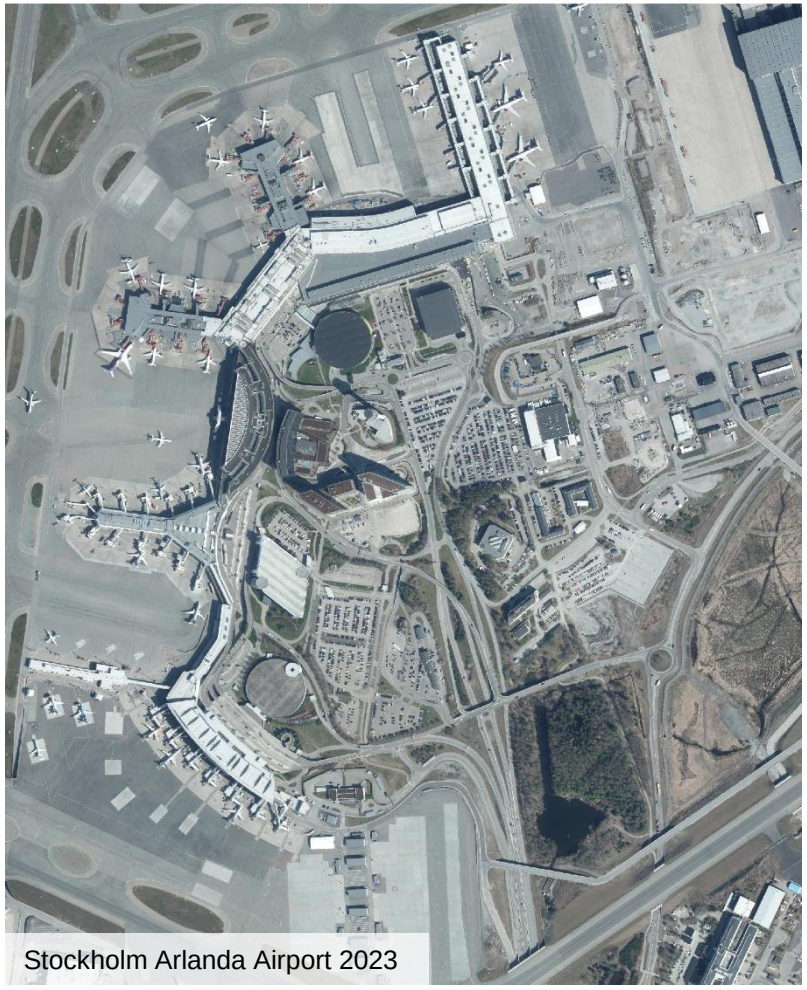
Technical supply is developed over time with other expansion measures, but since the measures occur in many different areas and are somewhat reactive in nature, the process is illustrated as yellow throughout the planning period.

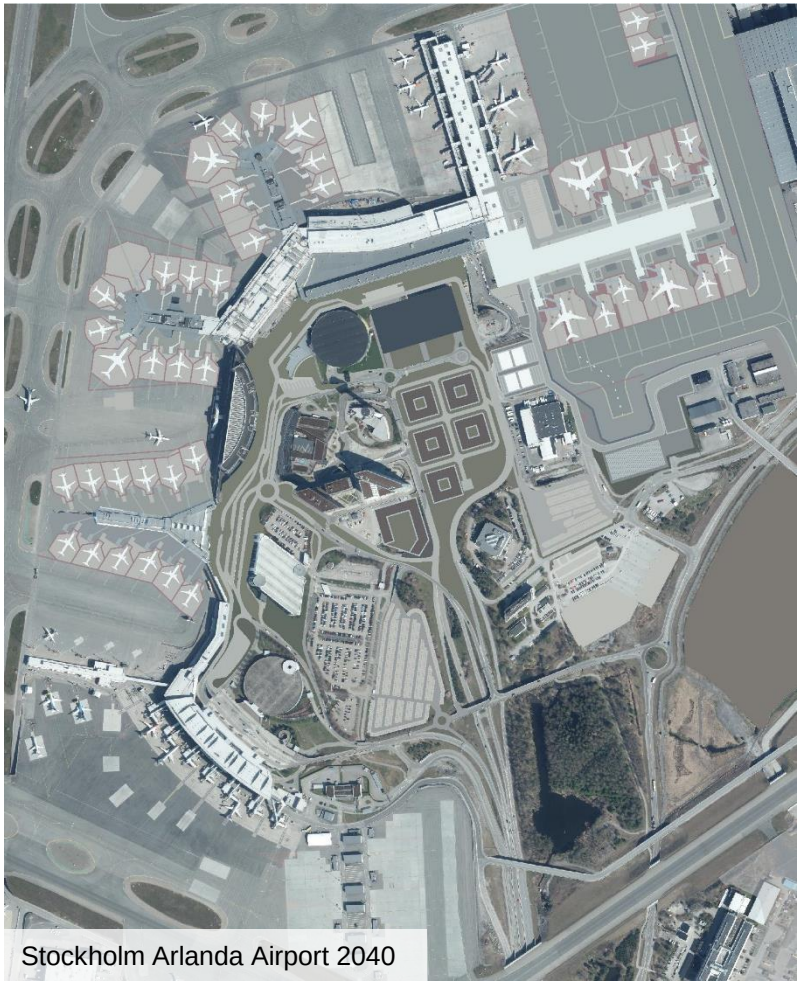
A vision image of the future airportatures

Stockholm Arlanda Airport today and after the completed development plan

Stockholm Arlanda Airport 2023

Stockholm Arlanda Airport 2040


Stockholm Arlanda Airport 2023


Stockholm Arlanda Airport 2040

Vision image

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