
ALTERNATIVES DEVELOPMENT AND EVALUATION

This section utilizes the results of the facility requirements (pages 66 through 100) and evaluates alternatives for meeting the needs of airport users, as well as future development requirements of the airport sponsor. The key elements of the alternative's evaluation process are:

- Identification of alternative ways to address previously identified facility requirements
- Evaluation of the alternatives
- Selection of the recommended alternative

It is the objective of the City of Concord to not only avoid and minimize adverse environmental impacts, but also to pursue measures to enhance environmental quality in a manner consistent with the FAA's principle mission to provide for the safety of aircraft operations. To meet or exceed this goal, various development alternatives were studied as part of the Master Plan Update for determining the most feasible course of action for development of an efficient, safe, and durable airport. The comparative merits and deficiencies of the development alternatives were analyzed as part of the Master Plan Update to provide the technical basis necessary for arriving at a development concept. Overall, various short- and long-term design, economic, and environmental implications were considered in the development and evaluation of the Master Plan Update alternatives, including:

- Compliance with FAA airport and airspace standards (without modifications)
- Overall airfield design attributes to satisfy aeronautical demand
- Potential environmental impacts
- Overall compatibility with existing and proposed on- and off-airport land use
- Potential construction and project development costs
- Ability to maximize economic potential of JQF and maintain self-sufficiency

As discussed in the following sections, each development alternative presents unique challenges. Also, it should be noted that each alternative provides for only minor flexibility in considering various configuration options, as most airfield design components are fixed by function per FAA standards. Each development alternative is divided into two areas:

- Airfield requirements per FAA standards
- Development (hangars, land acquisition, apron expansion, terminal expansion, etc.)

5.1 Development Alternative 1

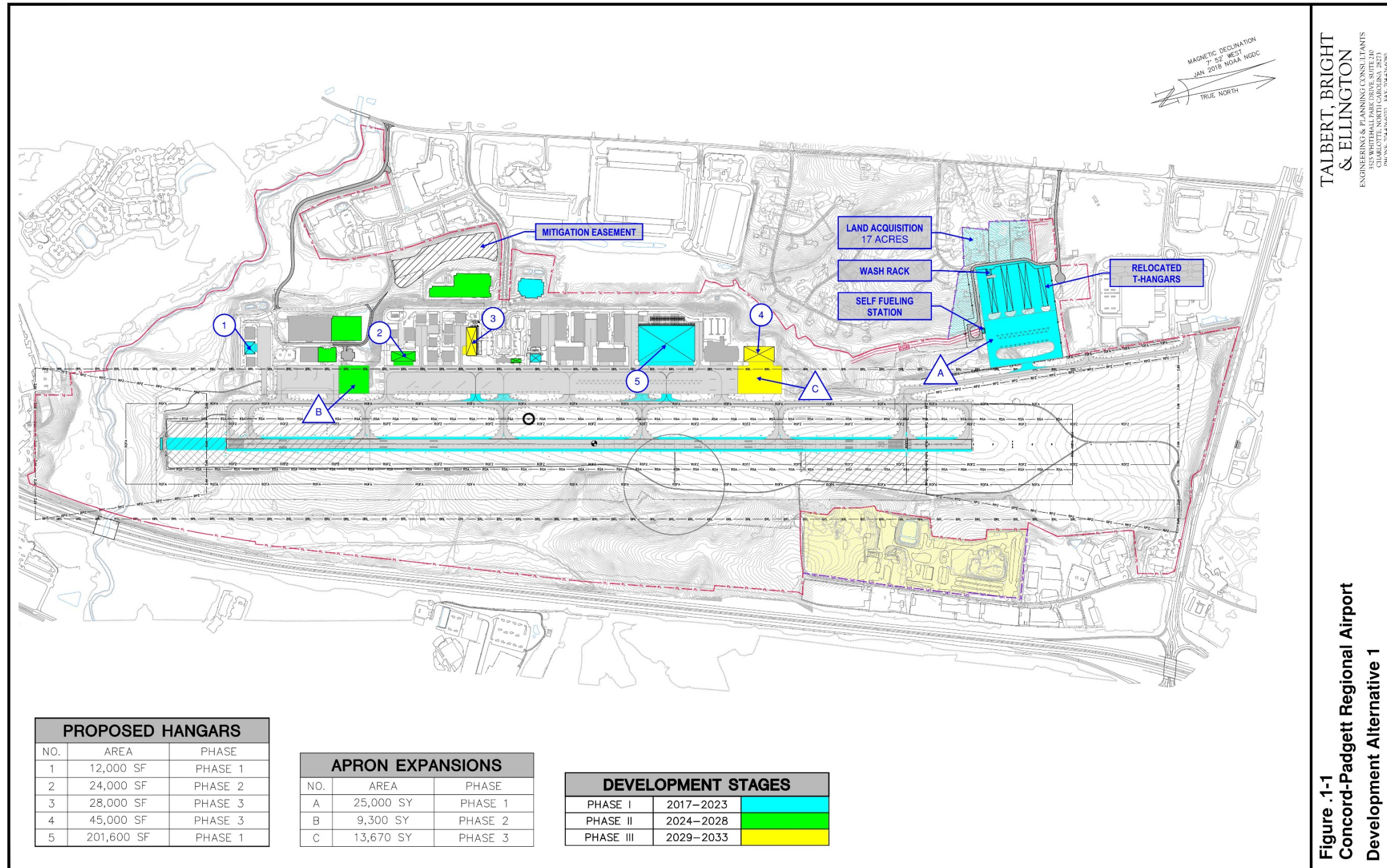
Alternative 1 (Figure 5.1-1, page 103) outlines the following development option.

Airfield requirements:

- Widen Runway 02-20 from 100 feet to 150 feet
- Construct an EMAS on the Runway 02 end
- Offset Taxiways D and E providing access from Runway 02-20 to general aviation parking apron to meet FAA design standards and airfield taxiing safety practices

Development:

- Land acquisition:
 - Phase I – 17 acres
 - Phase II – 32.67 acres
- Hangars
 - Construct relocated existing T-hangar complex to area off Taxiway G
 - Construct large box hangars where existing T-hangars are located
 - Construct box hangars as infill in areas adjacent where existing box hangars are located
- Apron
 - Expand commercial service terminal apron
 - Expand general aviation apron to the north of the existing apron
- Terminals
 - Expand commercial services terminal
 - Expand general aviation terminal
- Construct safety and security building
- Construct wash rack
- Construct self-service fueling station



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Figure .1-1
Concord-Padgett Regional Airport
Development Alternative 1

- Airport access and parking
 - Provide direct access from Derita Road to the commercial service terminal from Jetstream Boulevard NW
 - Pave gravel parking lots
 - Expand parking deck

5.2 Development Alternative 2

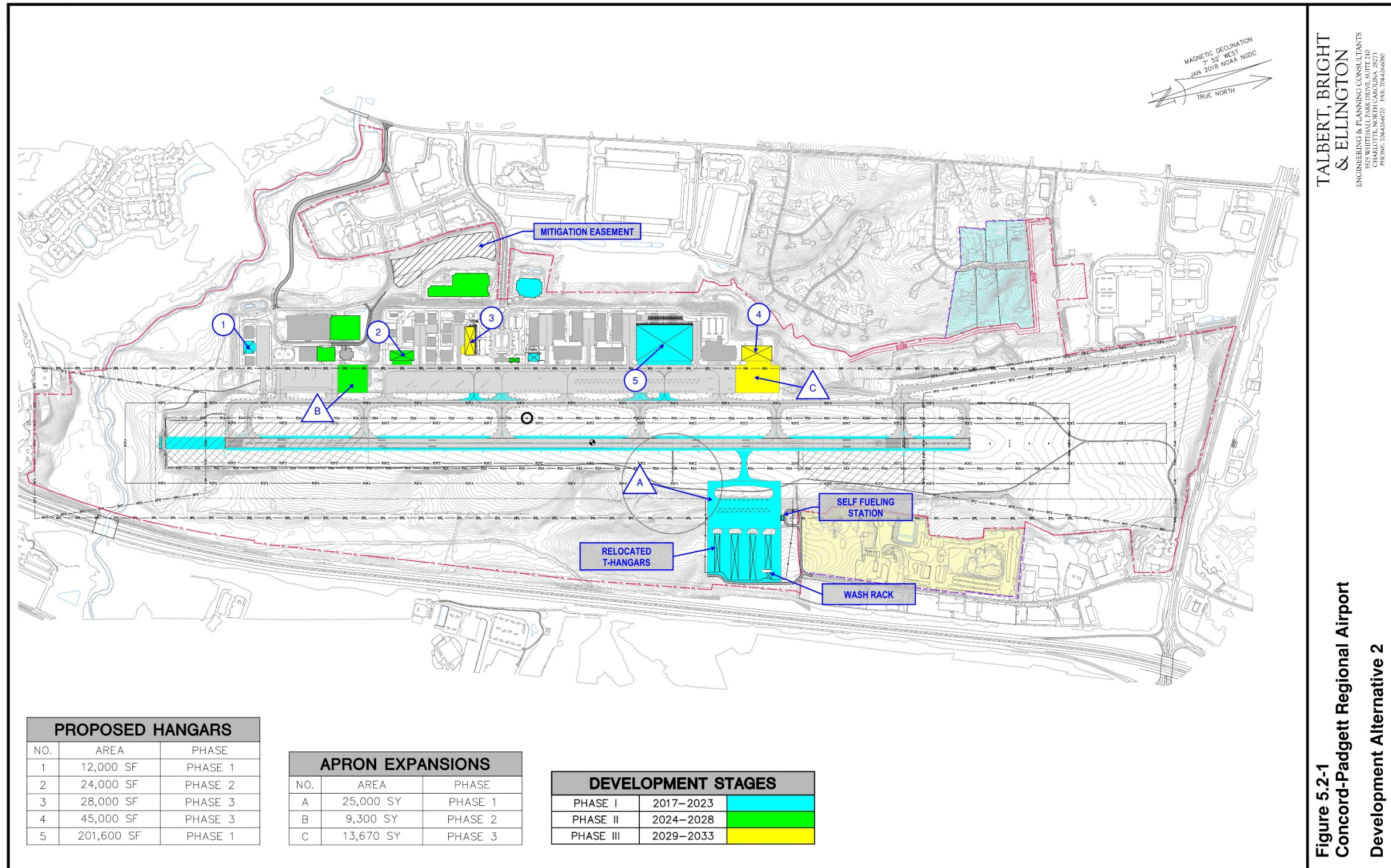
Alternative 2 (Figure 5.2-1, page 105) outlines the following development option.

Airfield requirements:

- Widen Runway 02-20 from 100 feet to 150 feet
- Construct an EMAS on the Runway 02 end
- Offset Taxiways D and E providing access from Runway 02-20 to general aviation parking apron

Development:

- Land acquisition:
 - Phase I – 17 acres
 - Phase II – 32.67 acres
- Hangars
 - Construct relocated existing T-hangar complex to area area across Runway 02-20
 - Construct large box hangars where existing T-hangars are located
 - Construct box hangars as infill in areas adjacent to where existing box hangars are located
- Apron
 - Expand commercial service terminal apron
 - Expand general aviation apron to the north of the existing apron



- Terminals
 - Expand commercial services terminal
 - Expand general aviation terminal
- Construct safety and security building
- Construct wash rack
- Construct self-service fueling station
- Airport access and parking
 - Provide direct access from Derita Road to the commercial service terminal from Jetstream Boulevard NW
 - Pave gravel parking lots
 - Expand parking deck

5.3 Development Alternative 3

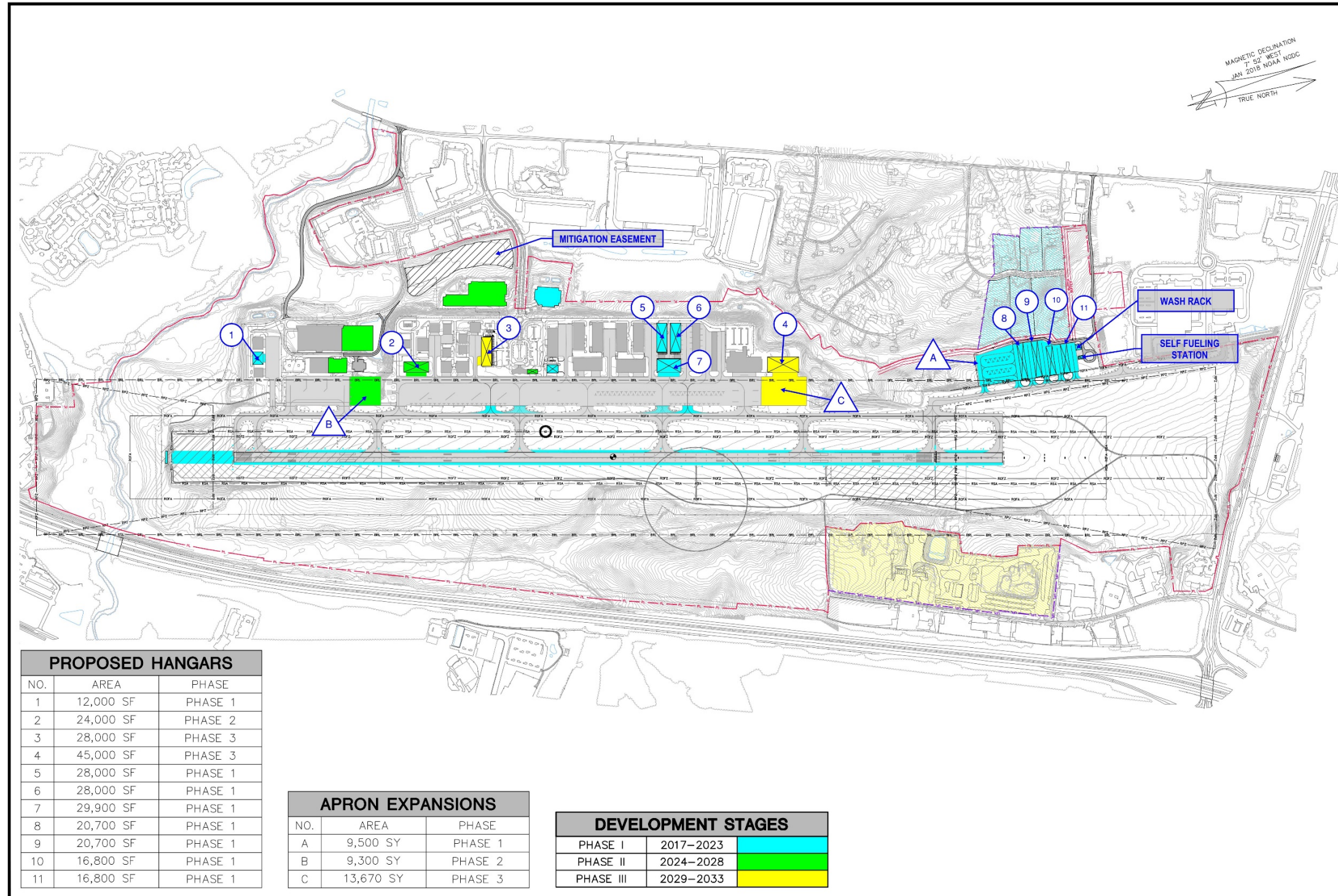
Alternative 3 (Figure 5.3-1, page 107) outlines the following development option.

Airfield requirements:

- Widen Runway 02-20 from 100 feet to 150 feet
- Construct an EMAS on the Runway 02 end
- Offset Taxiways D and E providing access from Runway 02-20 to general aviation parking apron

Development:

- Land acquisition:
 - Phase I – 17 acres
 - Phase II – 32.67 acres
- Hangars
 - Construct relocated existing T-hangar complex to area across Runway 02-20
 - Construct box hangars where existing T-hangars are located



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Figure 5.3-1
Concord-Padgett Regional Airport
Development Alternative 3

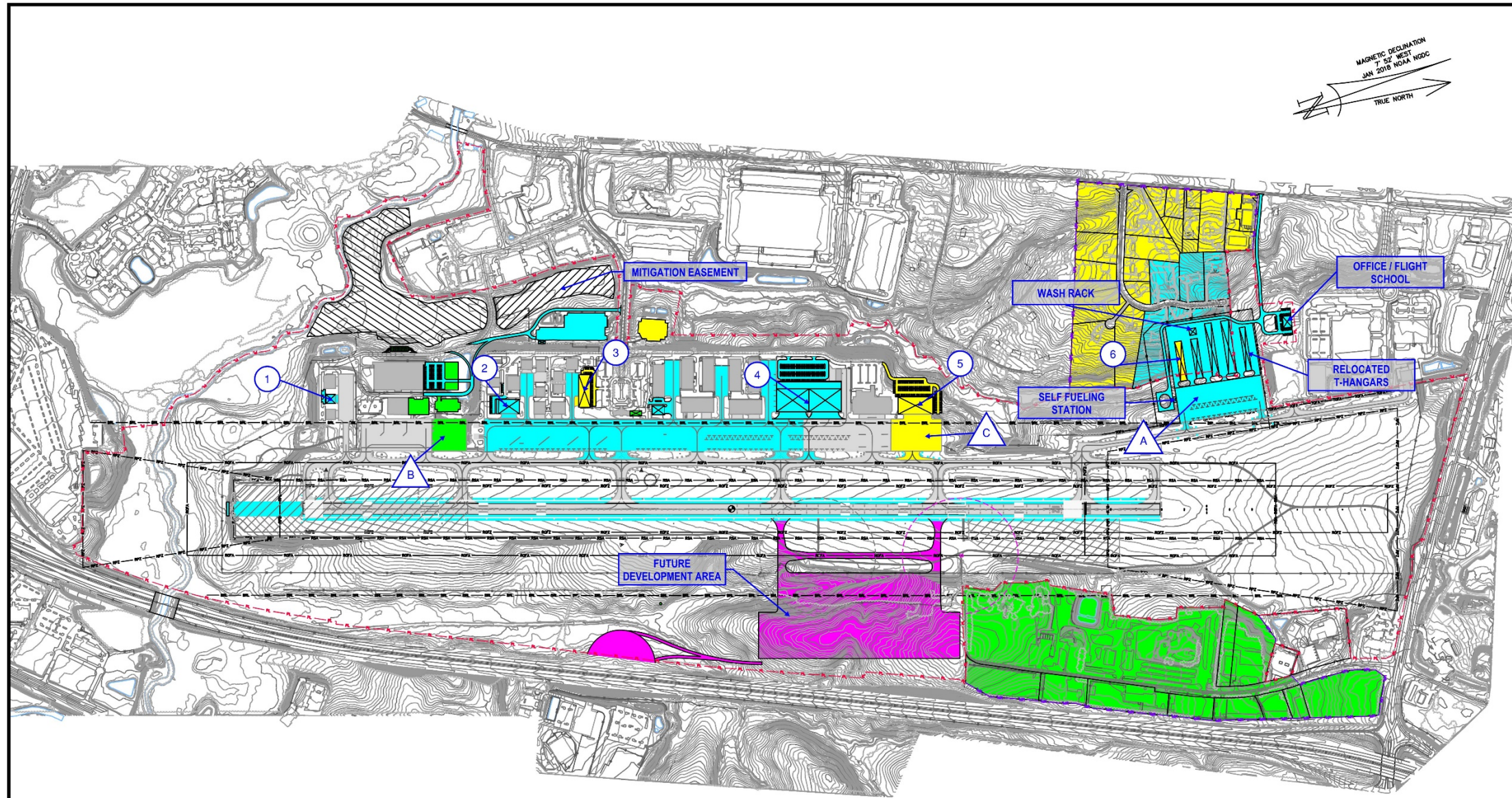
- Construct box hangars as infill in areas adjacent to where existing box hangars are located
- Apron
 - Expand commercial service terminal apron
 - Expand general aviation apron to the north of the existing apron
- Terminals
 - Expand commercial services terminal
 - Expand general aviation terminal
- Construct safety and security building
- Construct wash rack
- Construct self-service fueling station
- Airport access and parking
 - Provide direct access from Derita Road to the commercial service terminal from Jetstream Boulevard NW
 - Pave gravel parking lots
 - Expand parking deck

5.4 Preferred Development Alternative

Preferred development alternative (Figure 5.4-1, page 109) outlines the following development option.

Airfield requirements:

- Widen Runway 02-20 from 100 feet to 150 feet
- Construct an EMAS on the Runway 02 end
- Offset Taxiways D and E providing access from Runway 02-20 to general aviation parking apron



| PROPOSED HANGARS | | |
|------------------|------------|---------|
| NO. | AREA | PHASE |
| 1 | 12,000 SF | PHASE 1 |
| 2 | 24,000 SF | PHASE 1 |
| 3 | 28,000 SF | PHASE 3 |
| 4 | 145,600 SF | PHASE 1 |
| 5 | 45,000 SF | PHASE 3 |
| 6 | 20,700 SF | PHASE 3 |

| APRON EXPANSIONS | | |
|------------------|-----------|---------|
| NO. | AREA | PHASE |
| A | 25,000 SY | PHASE 1 |
| B | 9,300 SY | PHASE 2 |
| C | 13,670 SY | PHASE 3 |

| DEVELOPMENT STAGES | | |
|--------------------|-----------|--------------|
| PHASE | PERIOD | COLOR |
| PHASE I | 2017-2023 | Light Blue |
| PHASE II | 2024-2028 | Light Green |
| PHASE III | 2029-2033 | Light Yellow |
| FUTURE | 2034+ | Light Purple |

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Figure 5.4-1
Concord-Padgett Regional Airport
ALP - Preferred Alternative

Development:

- Land acquisition:
 - Phase I – 17 acres
 - Phase II – 32.67 acres
 - Phase 3 – 34.76 acres
- Hangars
 - Construct relocated existing T-hangar complex to area across Runway 02-20
 - Construct an office/flight school next to new T-hangars
 - Construct box hangars where existing T-hangars are located
 - Construct box hangars as infill in areas adjacent to where existing box hangars are located
- Apron
 - Expand commercial service terminal apron
 - Expand general aviation apron to the north of the existing apron
- Terminals
 - Expand commercial services terminal
 - Expand general aviation terminal
- Construct safety and security building
- Construct wash rack
- Construct self-service fueling station
- Construct ATCT
- Airport access and parking
 - Provide direct access from Derita Road to the commercial service terminal from Aviation Boulevard NW
 - Pave gravel parking lots
 - Expand parking deck

5.5 Summary of Alternatives and Recommendation

The development alternatives were presented at a meeting on March 29, 2018. During this meeting comments were received from the airport users and adjacent residents. Evaluation of the development alternatives were conducted using qualitative descriptors of favorable or not favorable. Explanations of the descriptors are as follows:

- Topography and Construction Considerations
 - Favorable – utilizes conventional design and construction techniques
 - Not favorable – utilizes specialized design and construction techniques
- Property Acquisition
 - Favorable – no additional property required
 - Not favorable – property acquisition required
- Environmental Requirements
 - Favorable – obtainable environmental permits and avoidance of non-compatible land use
 - Not favorable – strenuous environmental permitting and impacts to incompatible land use
- Airspace and Obstructions
 - Favorable – capable of achieving standard approach minimums or unobstructed approaches without initiating a clearing project
 - Not favorable – not capable of achieving standard approach minimums, or unobstructed approaches via initiating a clearing project
- Wind Coverage
 - Favorable – 95 percent wind coverage for a single runway (10.5 knots)
 - Not favorable – less than 95 percent wind coverage for a single runway (10.5 knots)
- Satisfies Aeronautical Demand
 - Favorable – meets runway requirements for critical aircraft
 - Not favorable – does not meet runway requirements of critical aircraft

Table 5.2-1 (page 112) illustrates each of the analysis criteria and its descriptor.

| Table 5.2-1 Development Alternatives Analysis Matrix Concord-Padgett Regional Airport | | | | |
|------------------------------------------------------------------------------------------------------|---------------------------------|----------|----------|------------------|
| Preliminary Costs | Development Alternatives | | | |
| | 1 | 2 | 3 | Preferred |
| Topographic and Construction Considerations | F | F | F | F |
| Property Acquisition | N | N | N | N |
| Environmental Requirements | F | F | F | F |
| Airspace and Obstructions | F | F | F | F |
| Wind Coverage | F | F | F | F |
| Satisfies Aeronautical Demand | F | F | F | F |
| F = Favorable N = Not favorable Source: Talbert, bright & Ellington, Inc., November 2018. | | | | |