

Concord Municipal Airport

Terminal Area Study
SBG-04-14-2019



Prepared for:



Prepared by:

Jacobs

April 2021



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Terminal Area Study

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City of Concord, New Hampshire





Executive Summary

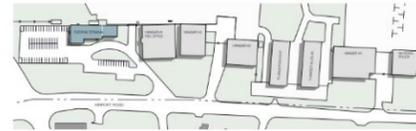
The existing terminal building does not meet the need for a modern terminal building for several reasons:

- Hazardous materials are present throughout and would need to be abated.
- It does not meet current building code for Americans with Disabilities Act compliance, life safety, and energy requirements.
- The building floorplan is not adequate for use with modern-day terminal functional requirements.
- The existing site does not provide a high level of visibility from the airside or roadside views.

A new terminal building is planned with a **vision towards the future** that considers the following:

COMMUNITY

- COMMUNITY AMENITY + PRESENCE
- FARMER'S MARKET LOCATION
- OBSERVATION AREA
- NATURE CENTER/KARNER
- BLUE BUTTERFLY



SUSTAINABILITY

- CITY COUNCIL GREEN INITIATIVE 2030
- CONSERVATION AREA
- SOLAR PANEL/ FARM
- PASSIVE DESIGN STRATEGIES



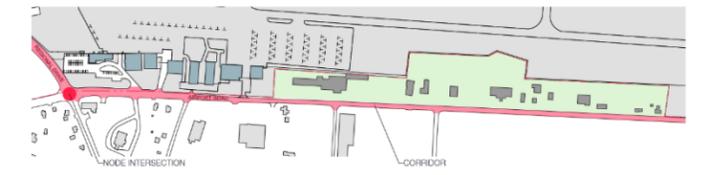
IMAGE

- VISIONS
- IDEAS
- IMPROVEMENTS



FUNCTION

- NH PRESIDENTIAL PRIMARY
- EXPANDABLE FACILITY
- PUBLIC PRESENCE
- INTERSECTION REDEVELOPMENT
- ENHANCE RETAIL DEVELOPMENT



After several months of collaboration with City Officials, community members, and airport stakeholders, the Design Team reimagined the terminal building to fit the modern needs and amenities of both aviation and non-aviation users and tenants. The look and feel of the building are suited towards attracting new and vibrant businesses to the airport. The new building would provide 5,450 gross square feet of usable space optimized for aviation and commercial tenants. The demolition of the existing terminal building allows for flexibility in maximizing the highest and best use of the site. The new building would be rotated and shifted north from its current location to provide maximum visibility from the busy street as well as for arriving aircraft. The building cost is estimated at \$2.5 million (2020), which includes demolition of the existing building, site preparation, and construction of the new building. Approximately \$600,000 from the Federal Aviation Administration could be made available after multiple years of entitlement funds accrual.



Landside view from Airport Terminal Auto Parking Lot - looking east



Airside view from Aircraft Parking Apron - looking west



Airside view from Aircraft Parking Apron - looking south



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1. Introduction

As the gateway to New Hampshire, Concord Municipal Airport (CON) serves as a host to a variety of high-profile activities such as visiting presidential candidates during the US Presidential primaries and NASCAR race crews during NASCAR race season which is held at the New Hampshire Motor Speedway in Loudon, New Hampshire several times a year.

The City of Concord owns and operates Concord Municipal Airport. The City Council is responsible for airport policy, contracts, and the airport budget. An Airport Advisory Committee which consists of nine members advises the City Council on matters such as airport planning, development, rules, and regulations. Overall responsibility of managing the Concord Municipal Airport belongs to the City Manager. The fixed base operator (FBO), Concord Aviation Services (CAS), is responsible for on-site day-to-day management of the Airport, under contract to the City.

Concord Municipal Airport is classified by the FAA as a general aviation airport (no scheduled airline service). It serves as home to the New Hampshire Army National Guard and the New Hampshire State Police Aviation Unit. The Airport has 35,000 square feet (SF) of heated hangar space and twelve T-hangars within the terminal study area. Concord Aviation Services (CAS) is the airport's Fixed-Based Operators (FBO). They provide aviation related services to the general aviation community such as flight instruction, aircraft rentals, and car rentals through Hertz. A second aviation business (however not considered an FBO) is Craig Avionics, which provides aviation radio installation and repair services.

Over the course of the last decade the airport has seen a decline in aircraft operations (Figure 1). Between CY 2007 – 2018, the number of business/corporate jet operations declined by 61% based on FAA records. There are a number of reasons why that occurred, including a deep national recession between 2008-2010; the loss of one NASCAR race each year at the NH International Speedway; as well as competition from Signature Flight Support based at Manchester-Boston Regional Airport.

The purpose of this study is to examine the existing airport terminal building to determine its viability in meeting current and future aviation demand, to generate a renewed positive interest and use by the community at large, to appeal to general aviation pilots as a destination airport, and to attract business opportunities. As the general epicenter of airport activity, the airport terminal building is often the first impression of the community and surrounding area for arriving passengers. As such, the building should not only be functional as an aviation facility but should also be representative of the host community. It is in this regard that the project team has collaborated with community stakeholders to reimagine the Concord Municipal Airport terminal building to suit the needs of today and tomorrow.

In addition to the main terminal area, the terminal study area extends south along Airport Road, where there is a mix of commercial and residential uses. The development potential for this area has been determined by the project team to be best suited for corporate sized hangar development as demand for large sized, heated aircraft storage persists. The development potential for this area is discussed in Section 5.3.



2. Study Methodology

An inventory of the existing building was first conducted to determine the age, condition, and use of each space within the building. Following the building inventory, the project team assembled case studies of several similar size airports with terminal buildings to establish a baseline for terminal spatial programming. The airports in the case studies all had terminal buildings constructed within the last several years. The case studies are presented in Section 4. Drawing from the case studies and collaboration with airport stakeholders, the project team identified potential tenants and the spatial requirements that could be associated with each use. This discussion yielded several possible floorplans, orientations, and accompanying renderings for a new terminal building as it was clear that the cost to renovate the existing building would not only be cost prohibitive, but renovation of the building would not meet the overall project objective to provide a modern facility capable of meeting existing and future demand that is cohesive with the overall development of the airport and City of Concord. The planning process for this study is shown in Figure 2 on the following page.

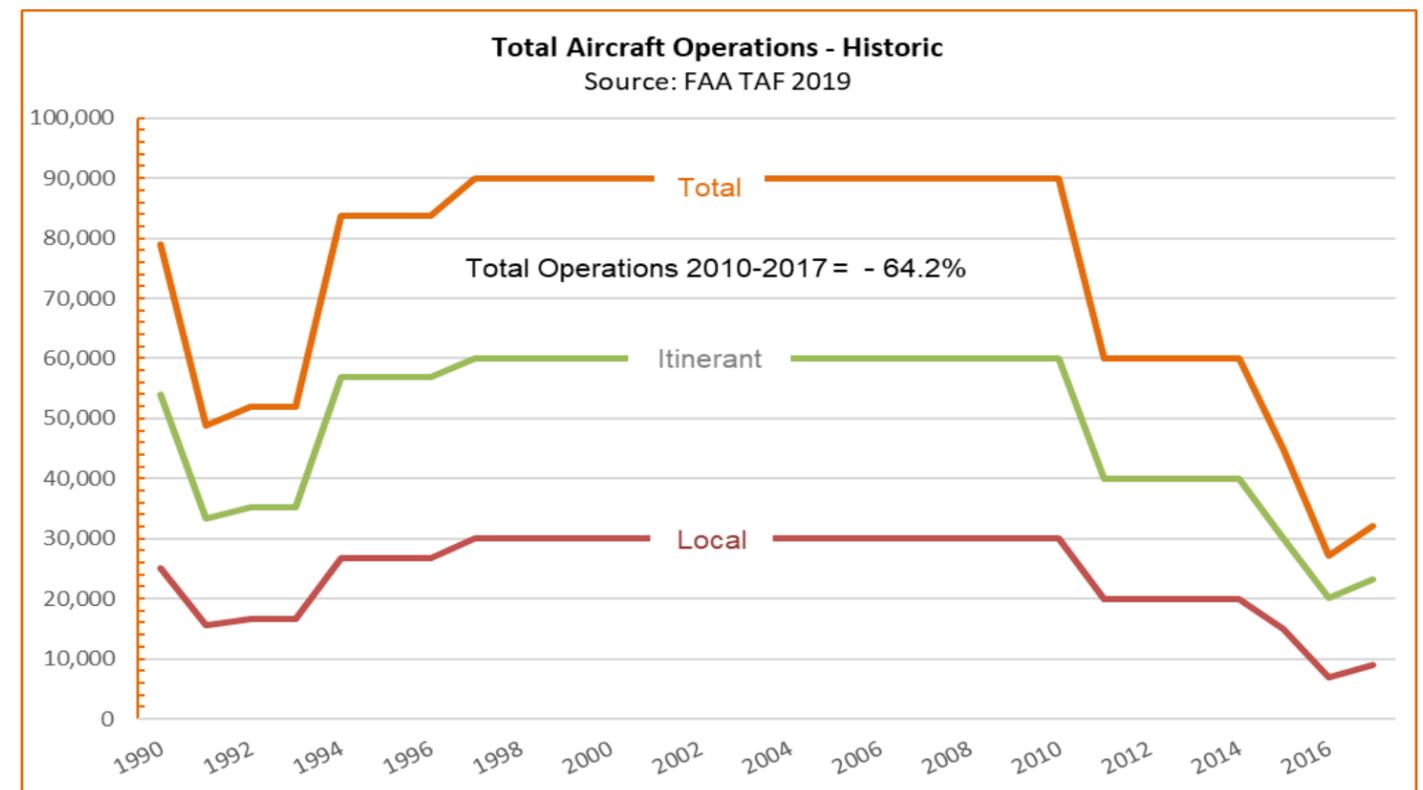
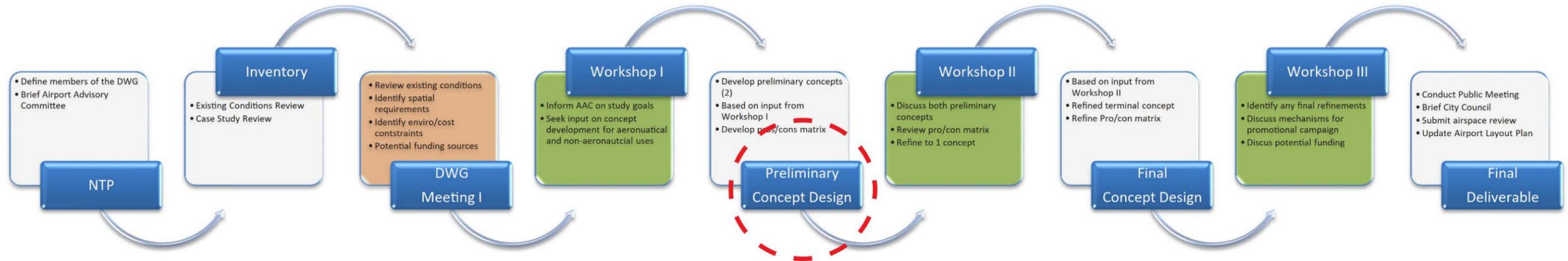


Figure 1. Total Aircraft Operations—Historic



PROCESS



AAC (Airport Advisory Committee)

DWG (Design Working Group) Members

- Deputy City Manager
- Associate City Engineer
- City Planning Representative
- City Economic Development Director
- AAC Representative
- NH Fish and Game Representative
- NH Bureau of Aeronautics
- Concord Aviation (FBO)
- Regional Planning Commission Representative
- Jacobs

Figure 2. Process Flow Diagram



3. Inventory

This section provides an overview of existing facilities (as of October 2020) at the Concord Municipal Airport. The inventory is limited to the study area which is comprised of the main terminal building, several aircraft storage hangars and office space. A graphic of the study area is provided below. Also included in this study is development potential for the south airport corridor (not shown) which is largely undeveloped. Brief descriptions of each facility within the study area follow. A full description assessment of each facility within the study area is provided in **Appendix 1**.



Figure 3. Terminal Area Facilities

3.1 Main Terminal Building

The main terminal building (MTB) is a focal point at Concord Municipal Airport during major events such as presidential candidate visits and the NASCAR races, as well as certain events held at St. Paul's School. The airport accommodates a steady flow of corporate aircraft and smaller general aviation traffic throughout the year. Historically, most pilots and passengers bypass the terminal building due in part to its lackluster appearance, unobtrusiveness as a point of entry from airside to



landside, and inadequate lounge/lobby space. The City of Concord and a group of volunteers recently remodeled the terminal building lobby to add function and appeal for arriving passengers. The lobby received a fresh coat of paint, new lighting, and furniture. A small room off the main lobby received the same updates and is used as a pilot lounge. The building is still grossly lacking in the functional amenities offered by a modern terminal building such as adequately sized and furnished lobby and meeting space, flight planning/pilot lounge, and office/concession space. Although many of these features are present in the existing building, they are outdated and/or not adequately sized.

3.2 Hangar #1

Hangar #1 is home to Concord Aviation Services, the only Fixed Based Operator (FBO) on the Airport. Concord Aviation Services provides flight instruction, pilot supplies and fueling services and hosts a Hertz rental car counter in the hangar. Concord Aviation Services is also responsible for maintaining over 20,000 SF of heated hangar space at the Airport.

Concord Aviation Services uses Hangar #1 for a variety of activities. Half of the hangar is used as a maintenance facility which includes a work shop, parts storage, restrooms, and a small office space. The other portion of the hangar contains the front office for the FBO and Hertz rental cars. This includes a lounge area with a vending machine, office space for pilots, areas for flight instruction, and restrooms.



3.3 Hangar #2

This hangar is used primarily for aircraft storage and is heated, which is a highly sought after amenity. Hangar #2 is used as community aircraft storage managed by Concord Aviation Services. It is reported that although the hangar is heated, this utility is unreliable and in need of repairs.

3.4 Hangar #3

Hangar #3 is home to Craig Avionics. This avionics repair shop has been a tenant of Concord Municipal Airport since 1988 and offers services for aircraft radio repair/installation. Hangar #3 is heated and has a breakroom, workshop, office space, restroom, and pilot lounge.





3.5 T-Hangars

There are two T-hangars within the study area and they are located along Airport Road. Each T-hangar has six aircraft bays. There are three north facing and three south facing. Combined, both T-hangars provide twelve sheltered parking spaces which are currently all occupied. The aluminum roofing is in good condition on both T-hangars and there have been no reports of leaking. The pavement surrounding the T-hangars is made of asphalt and is in fair condition. There are numerous large cracks in the asphalt that have been repaired with rubber crack sealant.



3.6 Hangar #4

Hangar #4 offers additional heated community aircraft storage which is a commodity in high demand at the Airport. The heat in this hangar is reportedly much more reliable than that of Hangar #2. The hangar is spacious and can accommodate small jet aircraft and twin turboprop aircraft such as a King Air. Hangar #4 is in good condition both externally and internally.

The south side of Hangar #4 contains a large office space. The office space is in good condition and is not currently occupied by a tenant.



3.7 New Hampshire State Police Hangar

The New Hampshire State Police Aviation Unit occupies the Southernmost hangar along Airport Road. The Hangar is located about 60 feet directly South of Hangar #4. The NH State Police Aviation Unit consists of two manned aircraft, a Cessna 182T fixed wing aircraft and a Bell 407 helicopter. The Aviation Unit specializes in enforcing motor vehicle and criminal codes using these aircraft. Recently, two unmanned aerial systems (UAS) have been added to the fleet to assist in criminal surveillance, searching for missing or wanted persons, and aerial photography.



3.8 Airport Management

Concord Airport is owned and operated by the City of Concord. Airport oversight is provided by the City's Community Development Department. The Fixed Base Operator (FBO), Concord Aviation Services, provides day-to-day airport management services under contract to the City.

AIRPORT ORGANIZATIONAL CHART

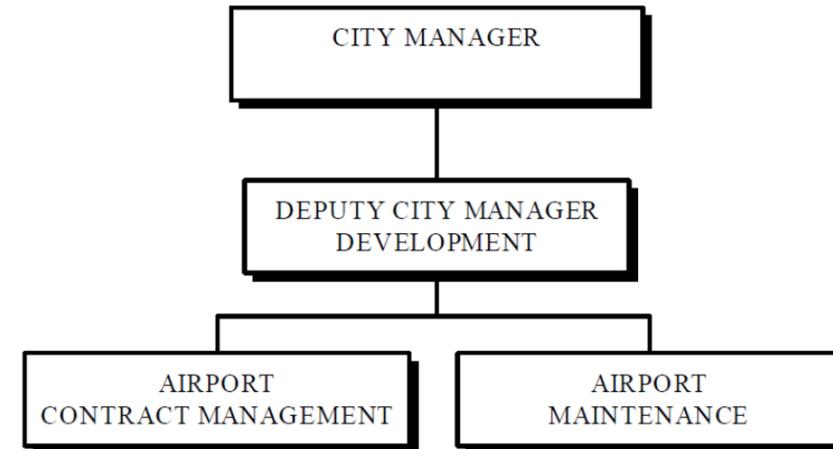


Figure 4. Airport Organizational Chart

Source: City of Concord, NH Operating Budget and Capital Improvement Program, FY 2020

3.9 Summary of Existing Financials

The Airport is listed as a Special Revenue Fund within the City's budget. In addition to the Airport, parking, community development engineering inspection, and property management are also special revenue funds.

As noted in the City's Budget, "Most enterprise/special revenue funds are fully self-supporting and provide administrative overhead payments to the General Fund."

Airport Special Revenue Fund

- FY19 was budgeted for a \$80,700 loss; estimated loss is \$66,600.
- FY20 is budgeted for a \$83,400 loss
- Significant working capital reserves are in place through 2022.

Figure 5. Airport Special Revenue Fund

Source: City of Concord FY2020 Budget Presentation, May 20, 2019



The largest source of revenue from the airport is “building lease or rental”, followed by “fuel flow mark-up”. The largest expense categories are compensation, transfer out, outside services, supplies, and debt service.

A presentation made by the City on the FY 2020 Budget on May 20, 2019, noted the budget deficit (Table 1). The budget presentation also noted certain projects in the Capital Improvement Plan (CIP) for the Airport, which include hangar repairs and the terminal.

Table 1. City of Concord – Operating Budget and CIP, FY 2020 Airport Budget

	2017 Actual	2018 Actual	2019 Budgeted	2019 Estimated	2020 Budget
Revenue	\$344,919	\$354,333	\$365,199	\$358,713	\$362,378
Expense	\$346,878	\$373,157	\$445,908	\$425,332	\$444,765
Balance	-\$1,959	-\$18,824	-\$80,709	-\$66,619	-\$82,387

3.10 Capital Improvement Plan

The Airport’s 2020 Capital Improvement Plan (CIP) includes projects from Federal Fiscal Year (FFY) 2018 through FFY 2029. The CIP is updated annually. As a general aviation airport, it receives \$150,000 in non-primary entitlement (NPE) grants from the FAA. The City can bank four years of NPE grants—or a maximum of \$600,000—if it has an FAA eligible project within the appropriate time frame.

The terminal project is shown extending over a three-year period, from FFY 2023 through 2025. The CIP has budgeted conceptual (2023) and final (2024) design utilizing the accrued non-primary entitlement (NPE) of \$150,000 per year. Based on accruals and design costs, the maximum entitlement accrual (\$600,000) is anticipated to be available in 2025 or 2026. When this occurs, the terminal construction is anticipated to proceed.

3.11 Forecasts of Aviation Activity

The purpose of the forecasting effort is to determine the level of potential future activity that may reasonably be anticipated in terms of users of the terminal building and other airport facilities within the study area. The forecasts consider historical trends as well as FAA prepared aviation forecasts as related to Concord Municipal Airport. Given the activity levels at the airport and the uncertainty of air travel with the onslaught of the recent pandemic, it is impossible to make an educated guess as to what the future of air travel – both private

and commercial – will be over the next several years. This study uses the Terminal Area Forecast (TAF), which is prepared annually by the FAA, to gauge existing and future levels of aviation activity at the airport.

Table 2. Current Aviation Activity	
Based Aircraft	
Single Engine (SE):	64
Multi Engine (ME):	4
Jet (J):	0
TOTAL FIXED WING (SE+ME+J):	68
Helicopters:	3
Gliders:	6
Military:	10
Ultra-Light:	4
Aircraft Operations	
Air Carrier:	0
Air Taxi:	2,000
General Aviation Local:	9,000
General Aviation Itinerant:	15,000
Military:	6,200
TOTAL OPERATIONS:	32,200
Operations for 12 Months Ending:	12/31/2017

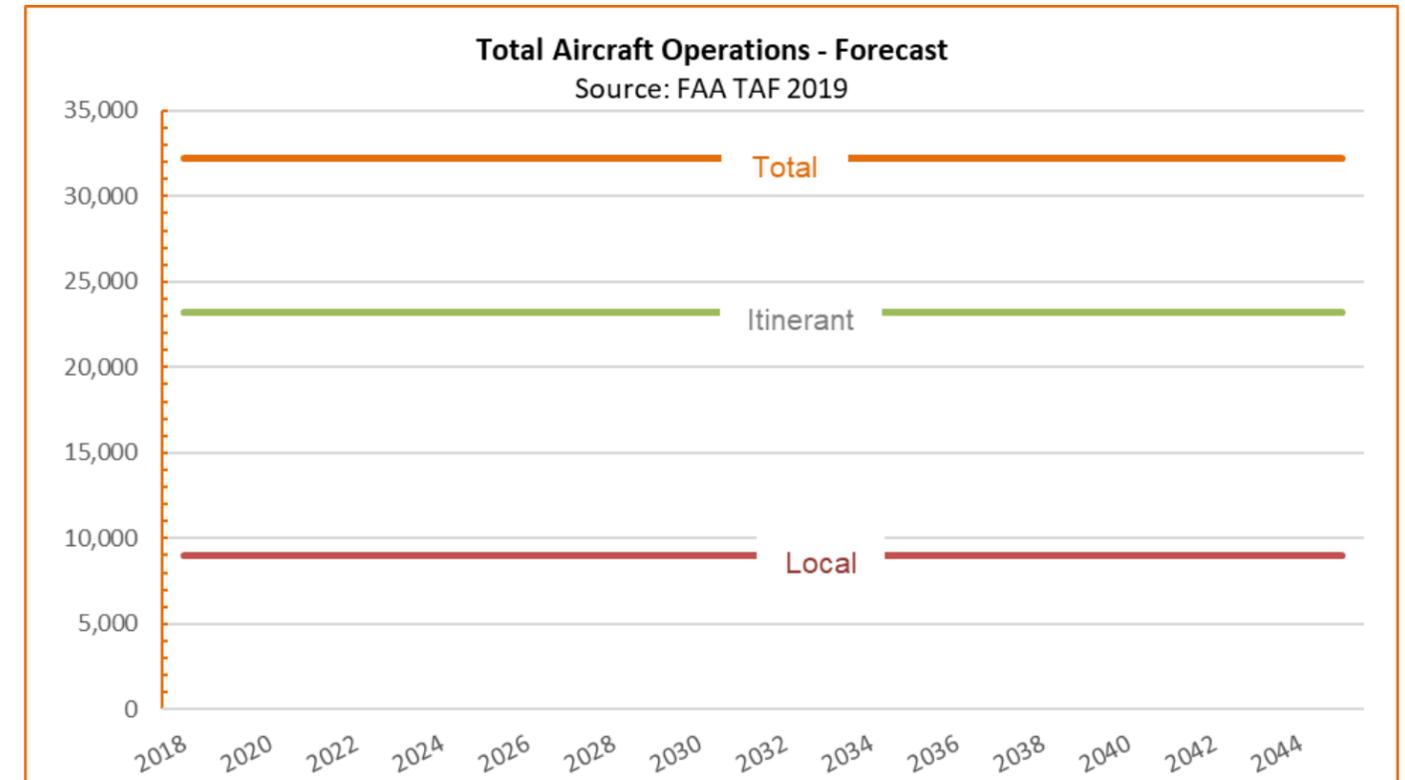


Figure 6. Total Aircraft Operations - Forecast

Data was compiled from the latest TAF prepared for Concord Municipal Airport that was issued in January 2019. It includes both historical aircraft operations data between 1990 – 2017, as well as forecasts of operations between 2018 – 2045.

As with many general aviation (GA) airports in the U.S., and in New Hampshire, Concord Municipal Airport does not have an air traffic control tower. As a result, there is no entity that counts aircraft operations, so activity levels at Concord Municipal Airport are estimated. At non-towered GA airports, the FAA relies on airport master plans, as well as input from airport managers and each state’s Department of Transportation. The FAA’s Terminal Area Forecast (TAF) does not anticipate any growth in aircraft operations or passenger enplanements throughout the forecast period from the years 2018 to 2045 (Figure 6). Total aircraft operations are forecasted to remain steady at 32,200 per year, or an average of 88 operations per day. Nationally, FAA projects that turbine powered corporate aircraft operations will grow faster than piston-engine aircraft activity. Factors that impact GA aircraft activity levels include disposable personal income (DPI), local-regional-national economic trends (employment, GDP, inflation), the cost of aircraft operations, the performance of the stock market, and any impediments to access to GA aircraft including security regulations.

3.12 Existing Land Use

Concord Municipal Airport is situated in the Heights neighborhood. The Heights neighborhood is comprised of mixed land uses including high and medium density residential, commercial, industrial, office park, and institutional. Single and multi-family residential land uses extend along Airport Road and Pembroke Road, as well as commercial and industrial land uses.

The land uses along Regional Drive, north of the airport, are primarily industrial, commercial, and office parks. On-airport land uses are primarily aviation oriented, including the NH Army National Guard support facility, with the exception of the designated conservation zone.

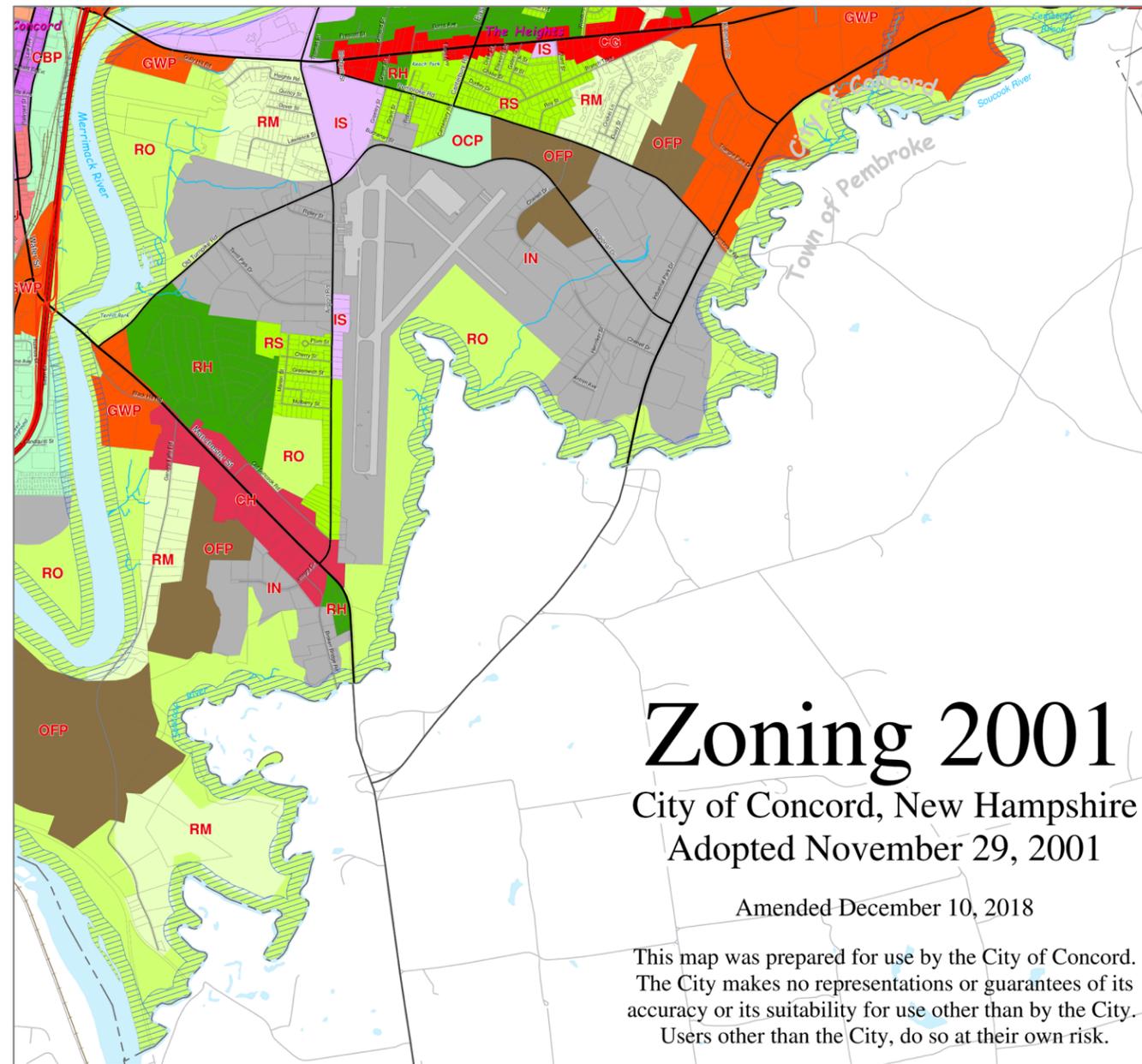


Figure 7. City of Concord Zoning Map 2001
Source: City of Concord Master Plan, 2008

As illustrated in **Figure 7**, the Airport is zoned industrial district (IN). Property to the east and north of the Airport is also zoned industrial district. Other zoning districts contiguous to the Airport include:

- Institutional (IS) – i.e., the NH Army National Guard
- Single Family Residential (RS)
- Open Space Residential (RO)

- Highway Commercial (CH)
- Opportunity Corridor Performance District (OCP)
- Office Park Performance District (OFFP)

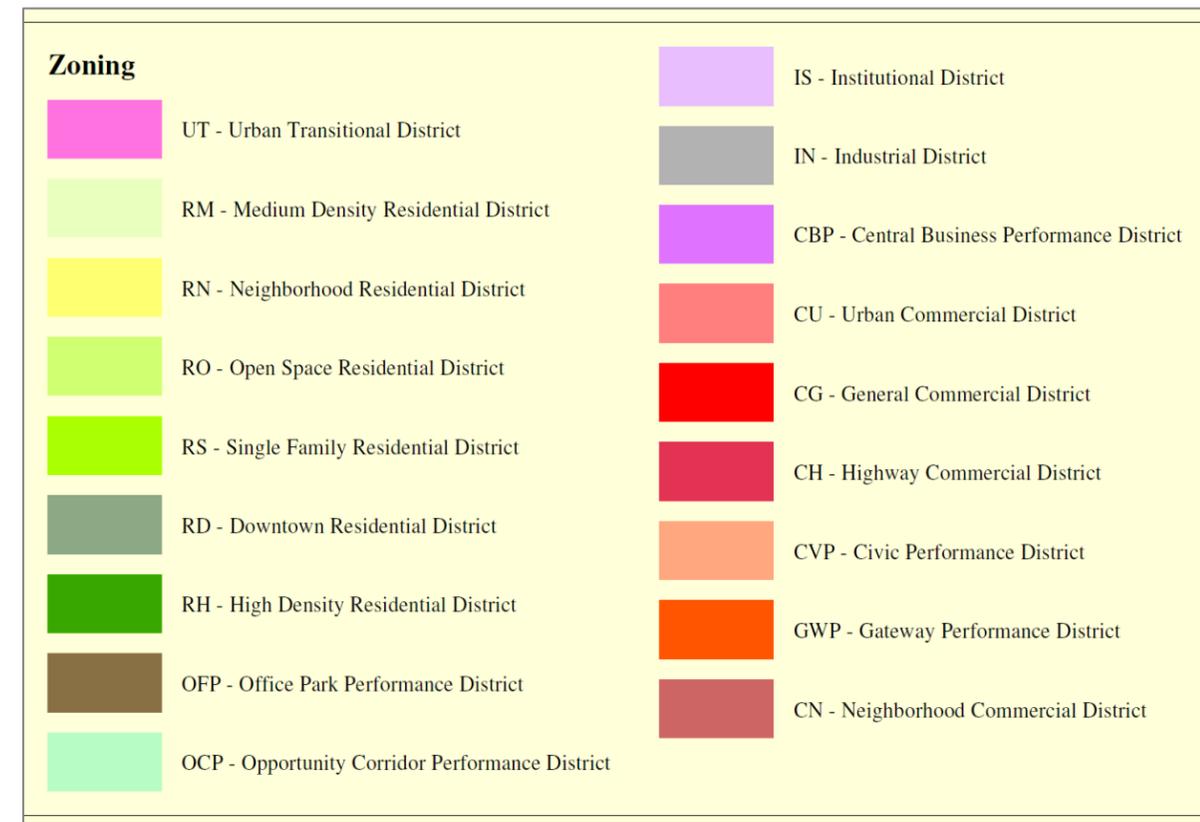


Figure 8. Zoning Districts
Source: City of Concord Master Plan, 2008

The existing airport terminal building, and a possible replacement building, are consistent with both the City's zoning, as well as with existing and planned on- and off-airport land uses. The Airport terminal and a possible replacement terminal building are in the designated development zone (DZ), and a new terminal building on the existing terminal site would not impact designated conservation zones (CZ). **Figure 9** on the following page depicts each zone. The hangar development proposed

south of the terminal area along Airport Road straddles an area designated as Conservation Zone 4 and Development Zone 8. In 2000 the City of Concord entered into a Development and Conservation Management Agreement (**Appendix 6**) with multiple federal and state agencies for the purpose of managing airport lands "in a manner that enhances habitat for federally- and state-listed threatened and endangered species". Specifically, the Karner Blue Butterfly. The Agreement identified Development and Conservation Zones which specify acceptable uses and improvements and restrictions. Any development within a Conservation Management Zone must have written consent from the signatory agencies. Development that is consistent with the approved Airport Master Plan and Airport Layout Plan, except as specified by the Agreement may occur without further consultation. As the area identified for the proposed hangars is partially within a Conservation Zone, approval would need to be granted prior to design/construction.

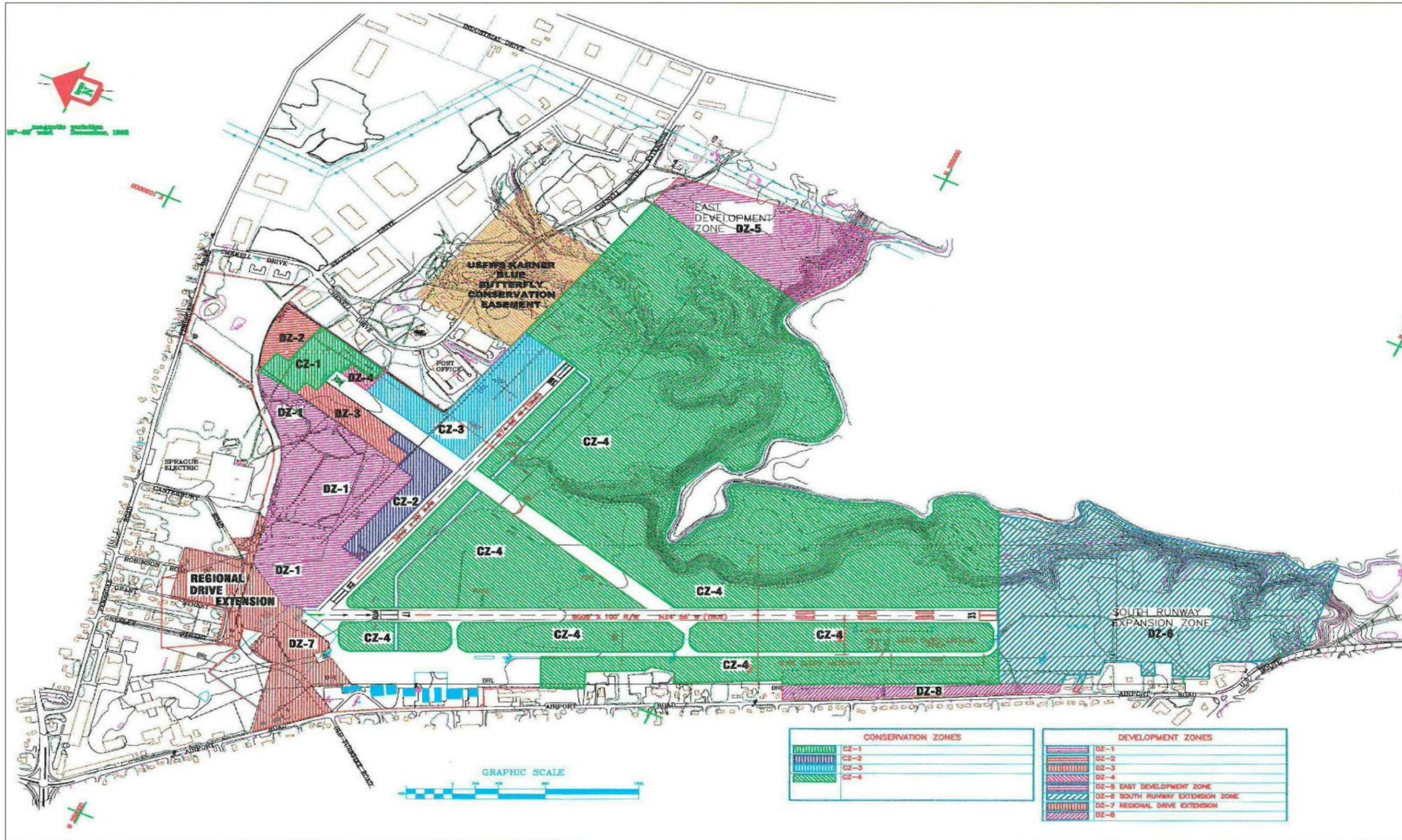


Figure 9. Development (DZ) and Conservation Zones (CZ) – Exhibit A



CONCORD AIRPORT TERMINAL AREA STUDY CASE STUDY GA AIRPORT TERMINALS					
ITEM	Beverly (BVY)	Fitchburg (FIT)	Southbridge (380)	Mansfield (189)	Plymouth (PVM)
Size (s.f.)	4,500	4,970	3,500	5,500	5,500
No. Floors	1	1	1	1	1
Basement	N	N	N	N	N
Primary Materials	Fiber Cement Siding (2 height variations). Granite base. Storefront. Curtainwall. CLT roof deck. Wood accents.	Prefabricated exterior wall system to height of 8'. GWB interior finish. Double pane, low-e clerestory glazing from height of 8' to roof.	Fiber Cement Siding (2 height variations). Granite base. Storefront. Curtainwall. CLT roof deck. Wood accents.	Prefabricated exterior wall system to height of 8'. Double pane, low-e clerestory glazing from height of 8' to roof, 1' high min.	Prefabricated exterior wall system to height of 8'. Double pane, low-e clerestory glazing from height of 8' to roof, 1' high min.
Type Utilities	Electricity, water, sewer, fire	Electricity, water, sewer, fire	Electricity, water, sewer, fire	Electricity, water, sewer, fire	Electricity, water, sewer, fire
Managers Office (s.f.)	118	210	210	210	210
Waiting Lobby (s.f.)	414	600	400	600	400
Conf Room (s.f.)	#1 - 389 #2 - 355	550	300	550	300
Restaurant (s.f.)		1,000	1,000	1,000	1,200
Restrooms (s.f.)	M-152 / W-153 Locker Room - 172	M/F - 500 Locker Room - 200	M/F - 320 Locker Room - 200	M/F - 500 Locker Room - 200	M/F - 320 Locker Room - 200
Flight Plan/Pilot Lounge (s.f.)	190	300	300	300	300
Other (s.f.)	Mechanical - 228 Storage 1 - 193 Storage 2 - 57 Kitchenette - 143 Office Tenant - 350 File Storage - 165 Telecom - 34 Administration - 324 Vestibule 1 - 45 Vestibule LS - 112 Vestibule 2 - 42	Mechanical - 80 Storage 1 - 150 Kitchenette - 150 Office Tenant - 210 Tenant Circulation - 50 Electrical - 80 Administration - 140 Ops Line Office - 200 Service counter - 90 Storage - 180	Mechanical - 80 Storage 1 - 180 Kitchenette - 150 Office Tenant - 210 Tenant Circulation - 50 Electrical - 80 Administration - 140 Ops Line Office - 200 Service counter - 90 Storage - 180	Mechanical - 80 Storage 1 - 180 Kitchenette - 150 Office Tenant - 210 Tenant Circulation - 50 Electrical - 80 Administration - 210 Service counter - 90 Storage - 180	Mechanical - 80 Storage 1 - 180 Kitchenette - 150 Office Tenant - 900 Tenant Circulation - 230 Electrical - 80 Administration - 140 Ops Line Office - 200 Vestibule - 112 Storage - 180
Total Cost	\$3,500,000	\$3,369,000	\$1,049,000	\$4,002,000	\$4,200,000
Cost/S.F.	\$778	\$678	\$300	\$728	\$764
New Site (Y/N - size)	Y	Y	Y	N	Y
Demolish Exist Bldg (Y/N)	Y	Y	Y	N	Y
No. Vehicle Parking	79				
Size Vehicle Parking (s.f.)	178' x 360'				
Time to desing, permit, construct	15 mos.	19 mos.	25 mos.	24 mos.	24 mos.
User Comments	Conf. room too large. Managers office too small.				Unusual building shape - too angular. Conf. room too small.
Leased space (Y/N - area)	Y				Y
Based Aircraft ⁵	101	106	24	45	90
Number of Runways ⁵	2	2	1	2	2
Longest Runway (ft.) ⁵	5,001	4,510	3,501	3,503	4,350
Number of FBOs / Av Biz. ⁵	5	2	1	3	6
Annual Aircraft Ops ⁵	56,800	61,360	26,550	47,850	50,950

Sources:
 1. Fennick-McCredie: BVY - construction drawing set. FIT-380-1B9-PYM - MassDOT-AD Strategic Master Plan for Administration Building Program at Massachusetts Airports. State Project # 2013-TERM-BLDG
 2. Tom Maher, PVM Manager, Interview & site visit
 3. Gloria Bouillon, BVY Manager, Interview & site visit
 4. Concord Municipal Airport: Site visits, City of Concord, Concord Aviation Services, FAA
 5. FAA Airport Master Record Form 5010
 6. AOPA Airport Directory

Figure 10. Case Study Matrix – General Aviation Terminals

4. Case Studies – GA Terminal Development

General Aviation (GA) terminal buildings often provide the first impression of an airport, and subsequently, the host communities vitality and commitment to the traveling public. Concord Municipal Airport serves both business and recreational travelers and is situated in the state capital. The state of the current terminal building is not well suited to provide the optimal appearance and convenience of a modern airport terminal building. As such, the project team researched several recent modern airport terminal buildings (mostly in the state of Massachusetts and one in New Hampshire). Figure 10 provides a summary of the findings.

The matrix to the left summarizes typical general aviation airport terminal functions and amenities for consideration by the study team when determining the needs and wants of a new airport terminal building.

From the case studies and stakeholder meetings, it has been determined that the terminal building should be outfitted with the proposed functional and adjacency to other amenities within the terminal building as shown in Figure 11 below.

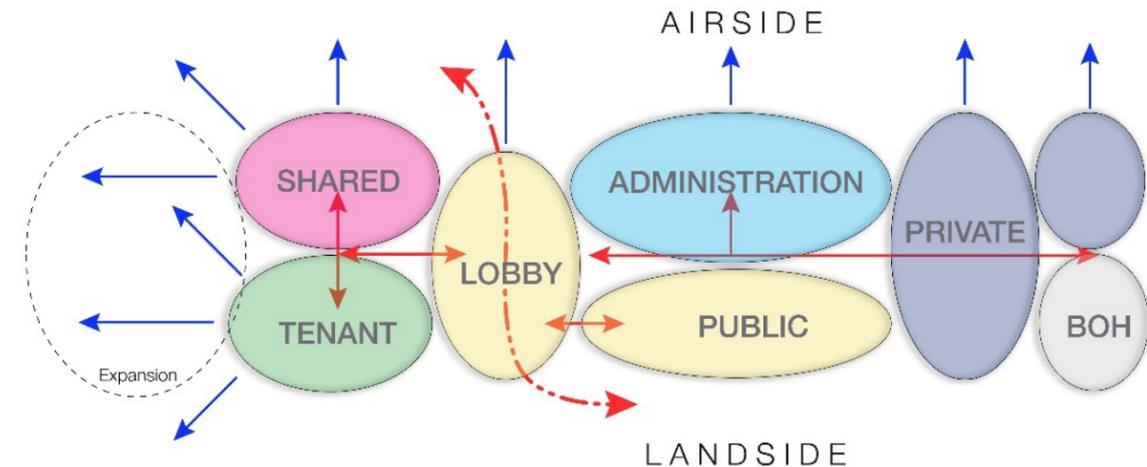


Figure 11. Proposed Amenities



5. Presentation of Terminal Design Concepts and South Airport Corridor

This section presents the results from extensive collaboration with airport stakeholders to reimagine the airport terminal building after it was agreed by all that the existing terminal building is outdated, does not meet current building code, is not in an optimal location, and would be cost prohibitive to renovate due to the presence of hazardous materials (asbestos). A near total gutting of the building would need to occur to meet current spatial needs and building code. The study team developed three (3) concepts based on input from the Design Working Group and Airport Advisory Committee and information gleaned from the case studies.

5.1 Planning Considerations

The following criteria were considered in determining the requirements for a building that would replace the existing airport terminal.

FAA Setbacks – the building must meet FAA airport planning criteria for clearance from Runway Safety Areas, Protection Zones and Airspace. **Figure 12** illustrates these surfaces.

Design Themes – during the first Design Working Group workshop the study team agreed upon the following design themes to guide the building design:

<p>IMAGE</p> <ul style="list-style-type: none"> • Local and Regional • National exposure - first in the National Primary • Private schools and businesses • Represent New Hampshire 	<p>FUNCTION</p> <ul style="list-style-type: none"> • Provide for current and future needs • Expandability • Flexibility
<p>COMMUNITY</p> <ul style="list-style-type: none"> • Gateway to the Airport • Enhance visibility from roadways • Include educational and recreational opportunities 	<p>SUSTAINABILITY</p> <ul style="list-style-type: none"> • Align with Concord's carbon reduction initiatives • Terminal should be financially solvent • Private and FAA funding opportunities

The four design themes and associated characteristics above served as the basis of design; the spatial and functional requirements were driven by the case studies, and FAA criteria guided in selecting the location of building. Development of building design concepts considered the following parameters based on input from the Design Working Group:

- 1) Terminal should be approximately 5,000 SF in size;
- 2) Consider space for a concession such as a restaurant. Aviation activity alone can't sustain a restaurant;
- 3) Be realistic about the costs (approximately \$2M);
- 4) Consider alternate locations for building within the project area;
- 5) Rental car counter should reside in the terminal building;
- 6) Consider visibility of the building from the road;
- 7) Airport management needs to see the airport activity;

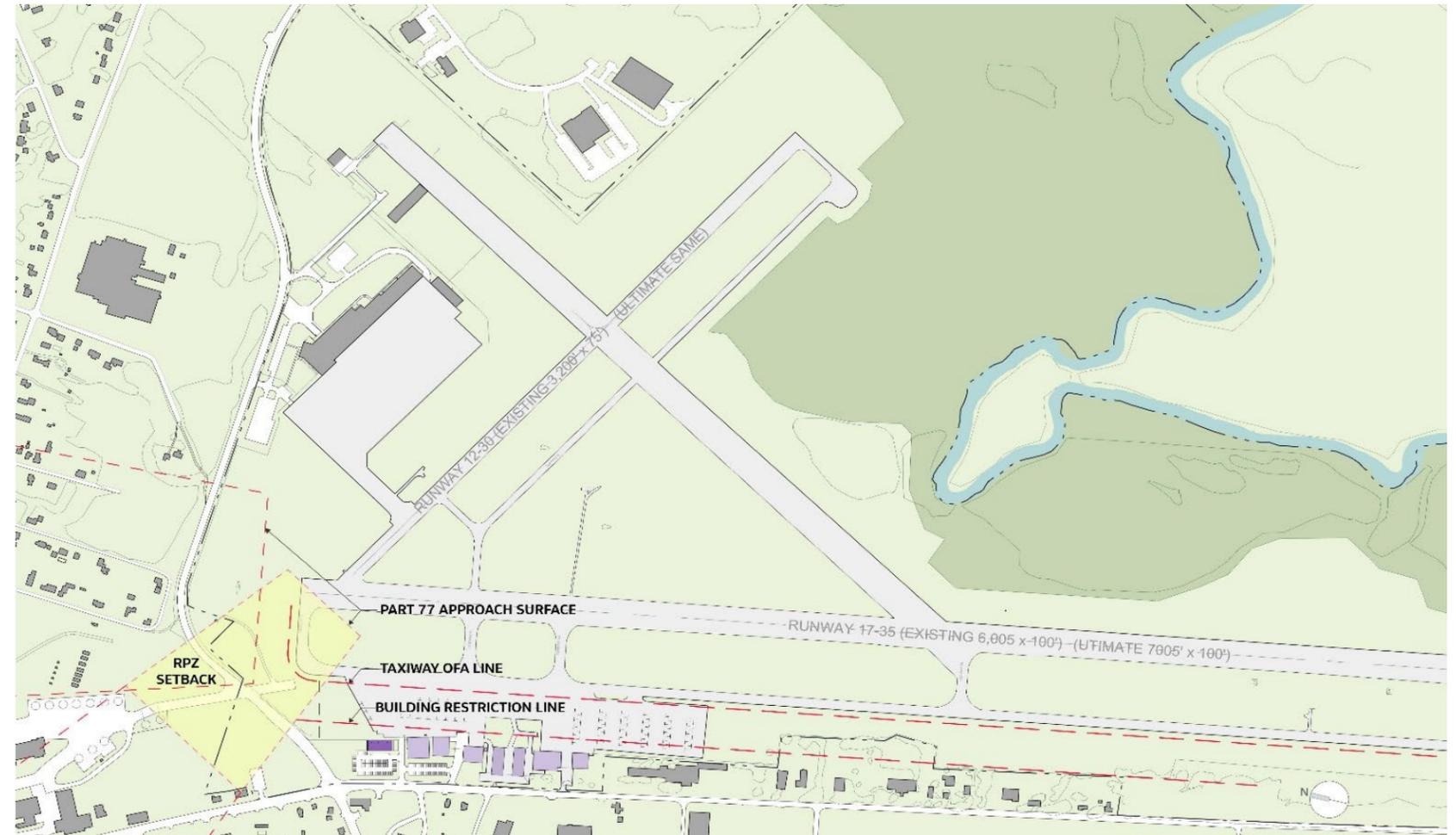


Figure 12. FAA Setbacks – Terminal Building

- 8) Pilot lounge set aside is not necessarily a need. A 10-foot by 12-foot room with toilet is adequate;
- 9) Public lobby space that can be reconfigured for a community event is useful. So long as the public can use the space (the FAA) will fund. If space is rented, then the FAA won't pay for it;
- 10) Having a café would be a bonus. Kid friendly is important. Community use of the airport is important to make it inviting;
- 11) Should only be one floor. Height restrictions – FAA Transitional Surface;
- 12) Ground level play space on the site - with lower fencing;
- 13) Capture the essence of NH;
- 14) More presence on the street;
- 15) Consider space for a playground. It can be magnet to help drive the restaurant. One thing drives another;
- 16) Consideration of moving the terminal to the north and use the corner for aviation development – hangar;
- 17) Think to the future – preservation – be mindful of the culture and image of the City– but don't want to juxtapose adding something out of place.

Based on the comments and discussion from the Design Working Group meeting held in January 2020 and noted above, a floor plan and the three site options shown below were developed by the Jacobs team.



5.2 Proposed Terminal Building Floorplan

The floor plan shown at right meets nearly every aspect of the design considered by the Design Working Group. It allows for a large, open lobby (900 SF) capable of hosting medium sized groups as well as an area to showcase the essence of NH life through visual media display and decor.

The floorplan has been programmed to accommodate a tenant such as a restaurant, café or small office with the option to expand (1,575 SF). This tenant space has open views of the airfield as well as a street view. Airport administration and a rental car vendor are provided 675 SF of space with access to the airside.

A flight planning and crew rest area is provided as well (405 SF). This space would be used by transient pilots to access weather data and other flight briefing resources prior to departing. For those pilots that are not overnighing, the pilot room and rest area afford the crew with space to eat a meal, converse, and relax while waiting for passengers which could be many hours.

A tenant space of 325 SF offers the potential to host another tenant or be used as a community-oriented room for STEM (Science, Technology, Engineering and Math) educational activities.

The design team reviewed three options regarding where the building would be located on the site.

- 1) Keep the terminal in existing location;
- 2) Move the terminal building north to allow for construction of a new hangar adjacent to the new terminal building;
- 3) Move the terminal building north and rotate it for better visibility to arriving aircraft and from the adjacent streets.

A rendering of the proposed building design is shown below and building layouts for each option considered are shown on the following pages.



Figure 13. Proposed Terminal Floor Plan



5.2.1 Proposed Terminal Siting Concept #1 – Existing Location

Pros:

- Auto parking lot is reconfigured to allow for development of an outdoor community area such as a park or pavilion to observe air traffic at the airport.
- An outdoor eating space could be added off the north facing tenant space.

Cons:

- Does not offer optimal street or airside presence.
- Does not offer the best views of airside activity from inside the building.

Figure 14. Option 1 – Proposed Terminal Site Plan

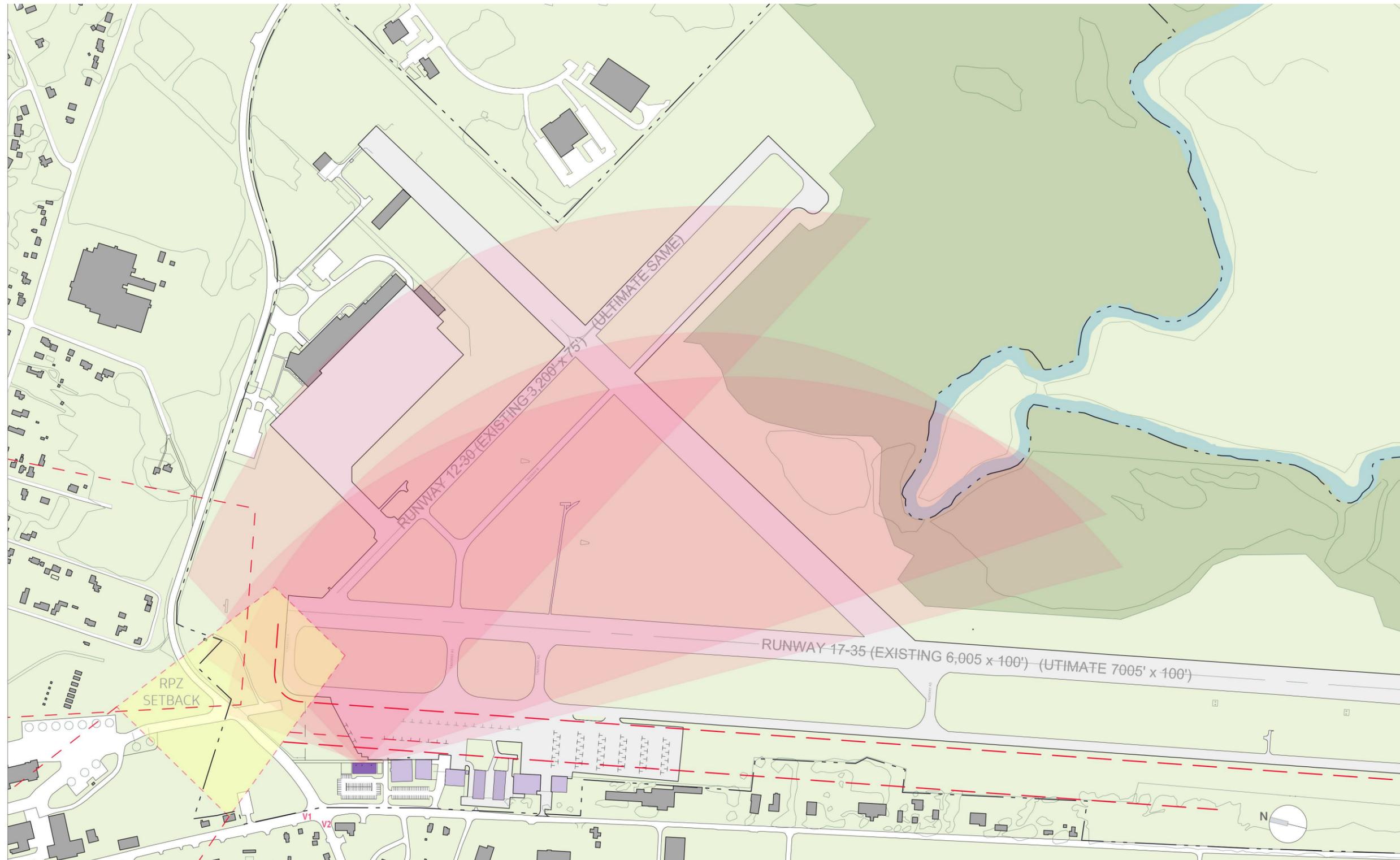


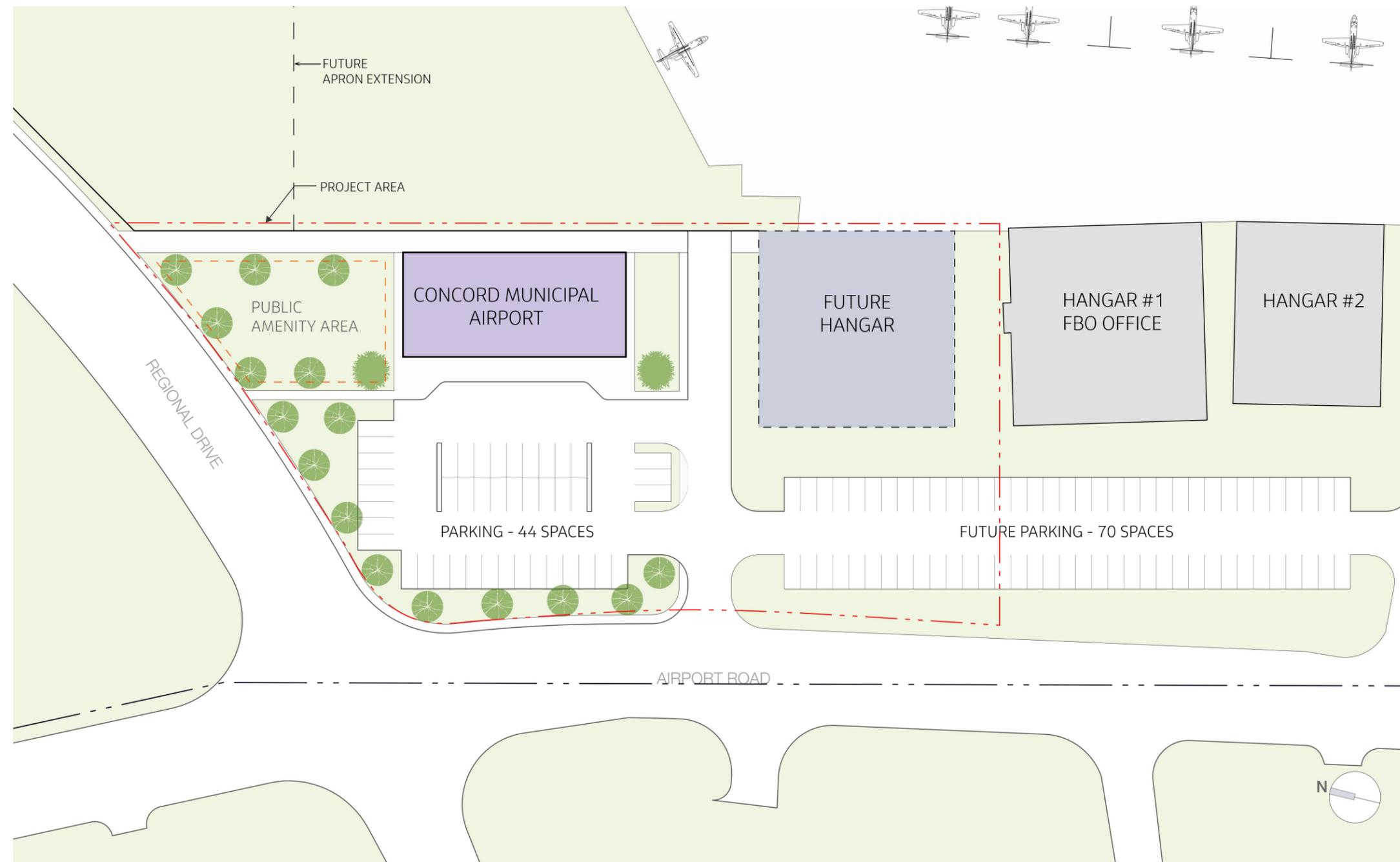
Figure 15. Option 1 – Views From Proposed Terminal



Figure 16. Airport Road View – Option 1



Figure 17. Old Turnpike Road View – Option 1



5.2.2 Proposed Terminal Siting Concept #2

Pros:

- Accommodates building footprint for future aircraft storage hangar
- Increased automobile parking from Option 1
- Public amenity space

Cons:

- Reduced outdoor public amenity space from Option 1
- No concession for outdoor tenant space
- Does not offer best visibility from roadways or airside

Figure 18. Option 2 – Proposed Terminal Site Plan

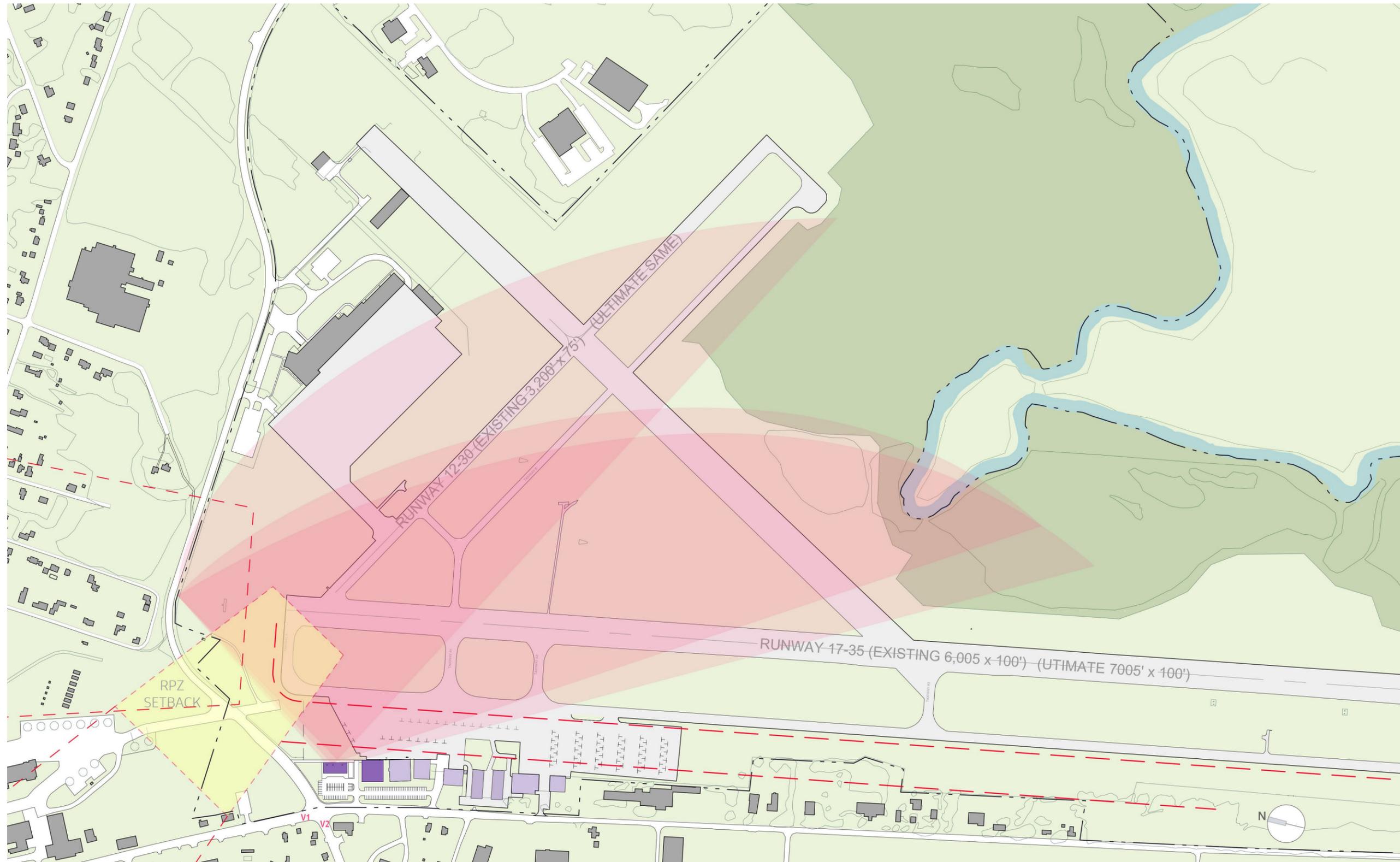


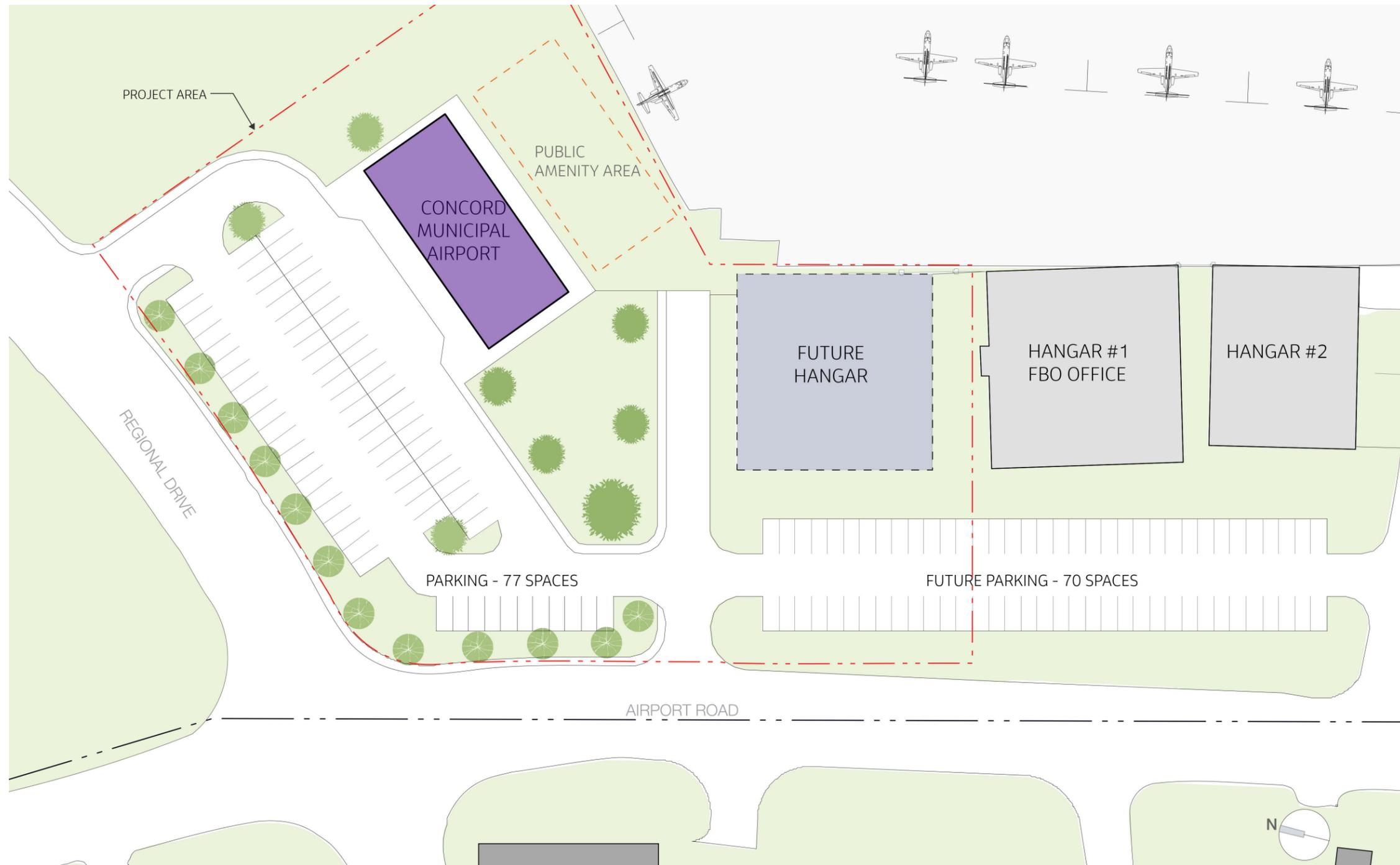
Figure 19. Option 2 – Views From Proposed Terminal



Figure 20. Airport Road View – Option 2



Figure 21. Old Turnpike Road View – Option 2



5.2.3 Proposed Terminal Siting Option 3

Pros:

- Provides optimal street and airside visibility
- Public amenity space
- Accommodates footprint for additional aircraft storage hangar
- Most automobile parking versus Options 1 & 2

Cons:

- Requires more site preparation than Options 1 & 2

Figure 22. Option 3 – Proposed Terminal Site Plan

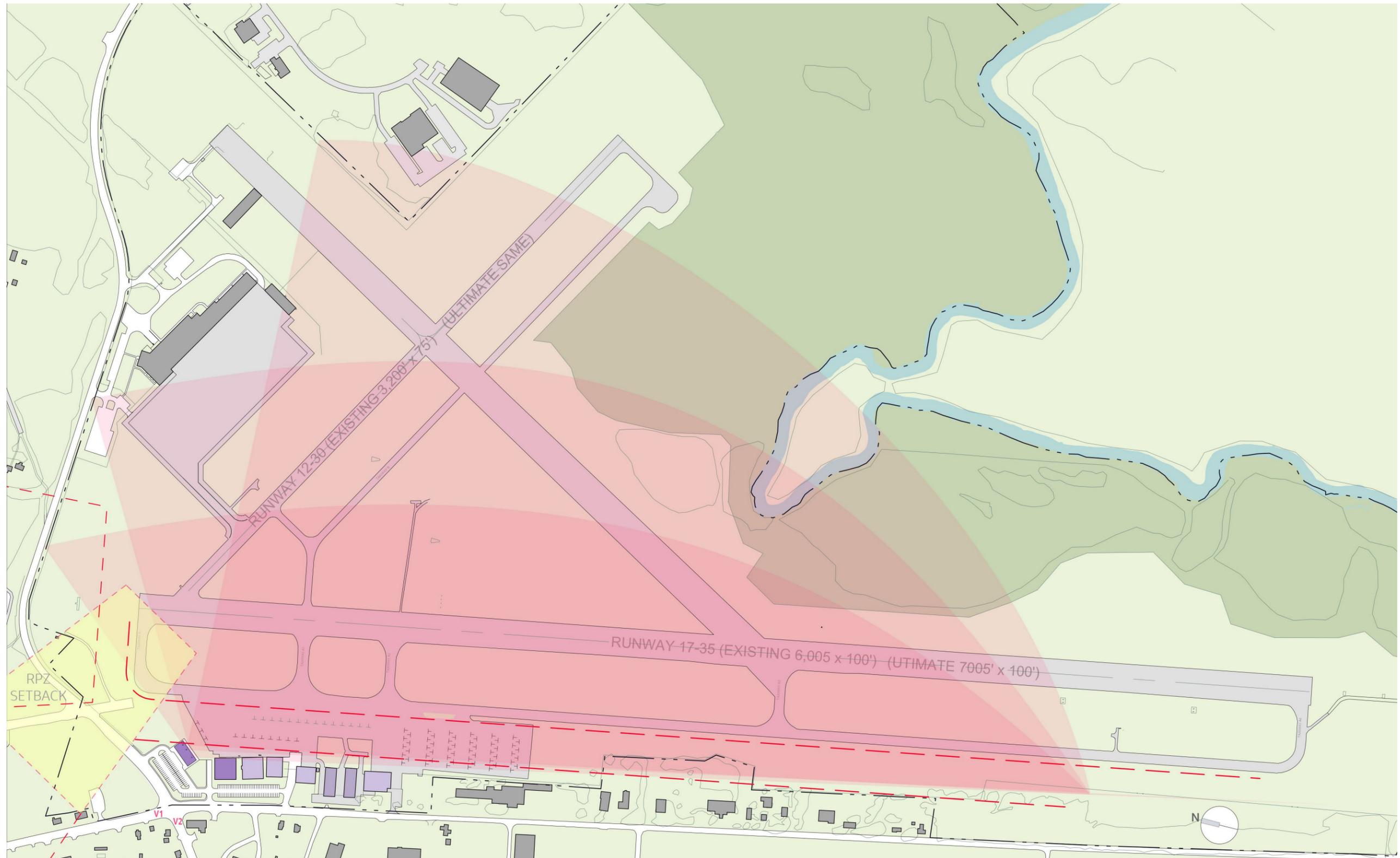


Figure 23. Option 3 – Views From Proposed Terminal



Figure 24. Rotated Terminal Old Turnpike Road View - Option 3



Figure 25. Rotated Terminal Airport Road View - Option 3



Renderings of two different terminal designs were developed for consideration. For each alternative the floor plan remains the same. The significant difference in the alternatives is the layout of the roof line and entry way.

Building Alternative A



Street-side view



Airside view



Airside oblique view



Building Alternative B



Street-side view



Airside view



Airside oblique view

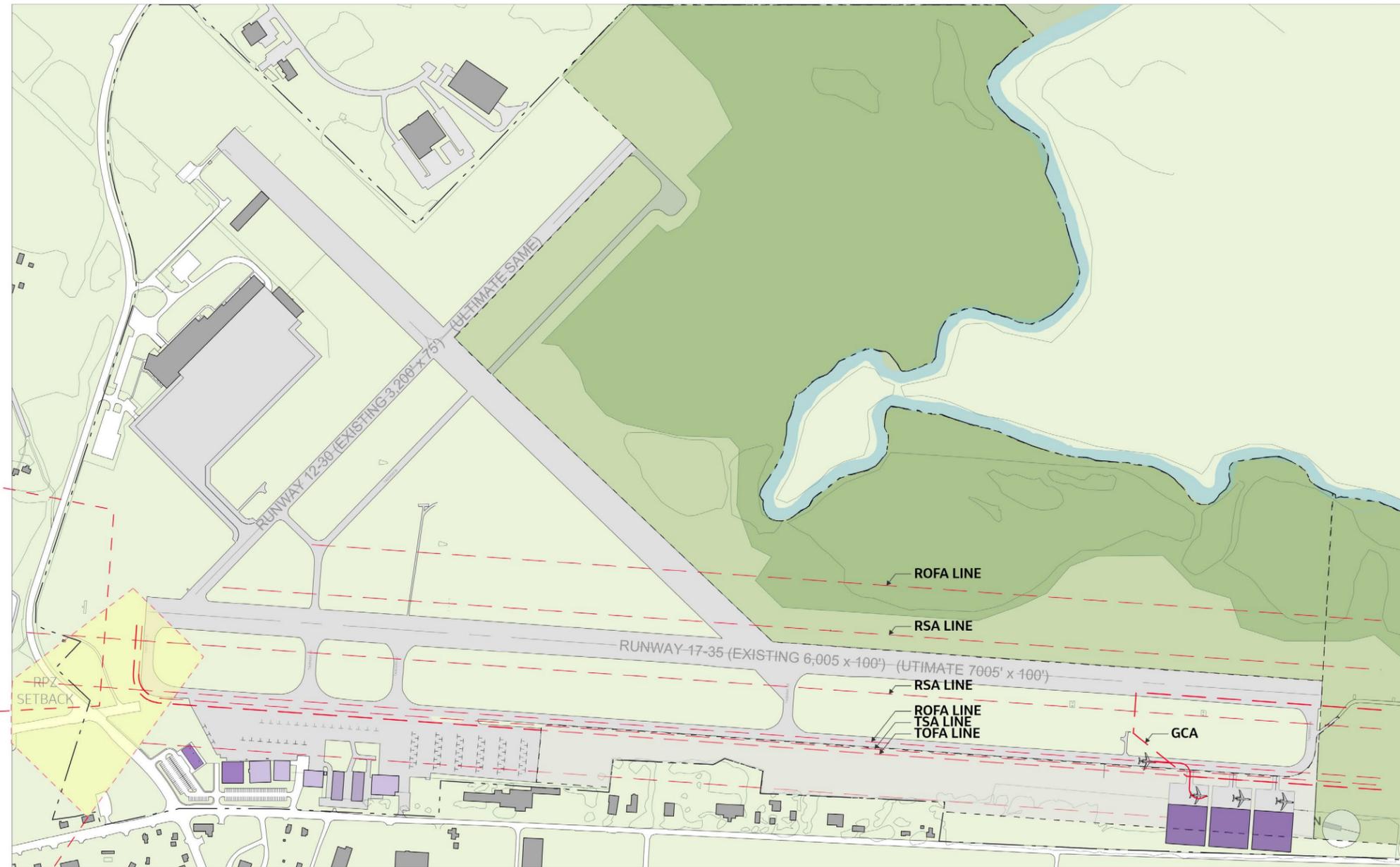


Figure 26. Concord Airport Site Plan and Proposed Hangar Development

5.3 South Corridor Development

Aircraft storage hangar construction was determined to be the highest and best use of airport property located along the southern corridor of Regional Drive. There is high demand for aircraft storage space for the foreseeable future. Lease of airport land for hangar development offers a low impact, stable source of airport revenue that is compatible with the airport.

Then entire corridor within airport property between the airport fence line and the Taxiway Object Free Area (TOFA) was considered in this study. There is very limited developable land from the south aircraft parking ramp to the end of residential/business development. The land on airport property in this area is within Conservation Zone 4 and cannot be developed without written approval by several Federal and State agencies. In addition, the space available is less than a 100' corridor and would infringe up on the adjacent TOFA. There is a wider corridor (approximately 220' wide) available just south of the residences, but it too lies within Conservation Zone 4.

The area that was chosen as the most desirable is further south still, and straddles Conservation Zone 4 and Development Zone 8. Approval would be needed to build in this area as approximately 6.5 acres of Conservation Zone 4 would need to be rezoned as Development Zone.

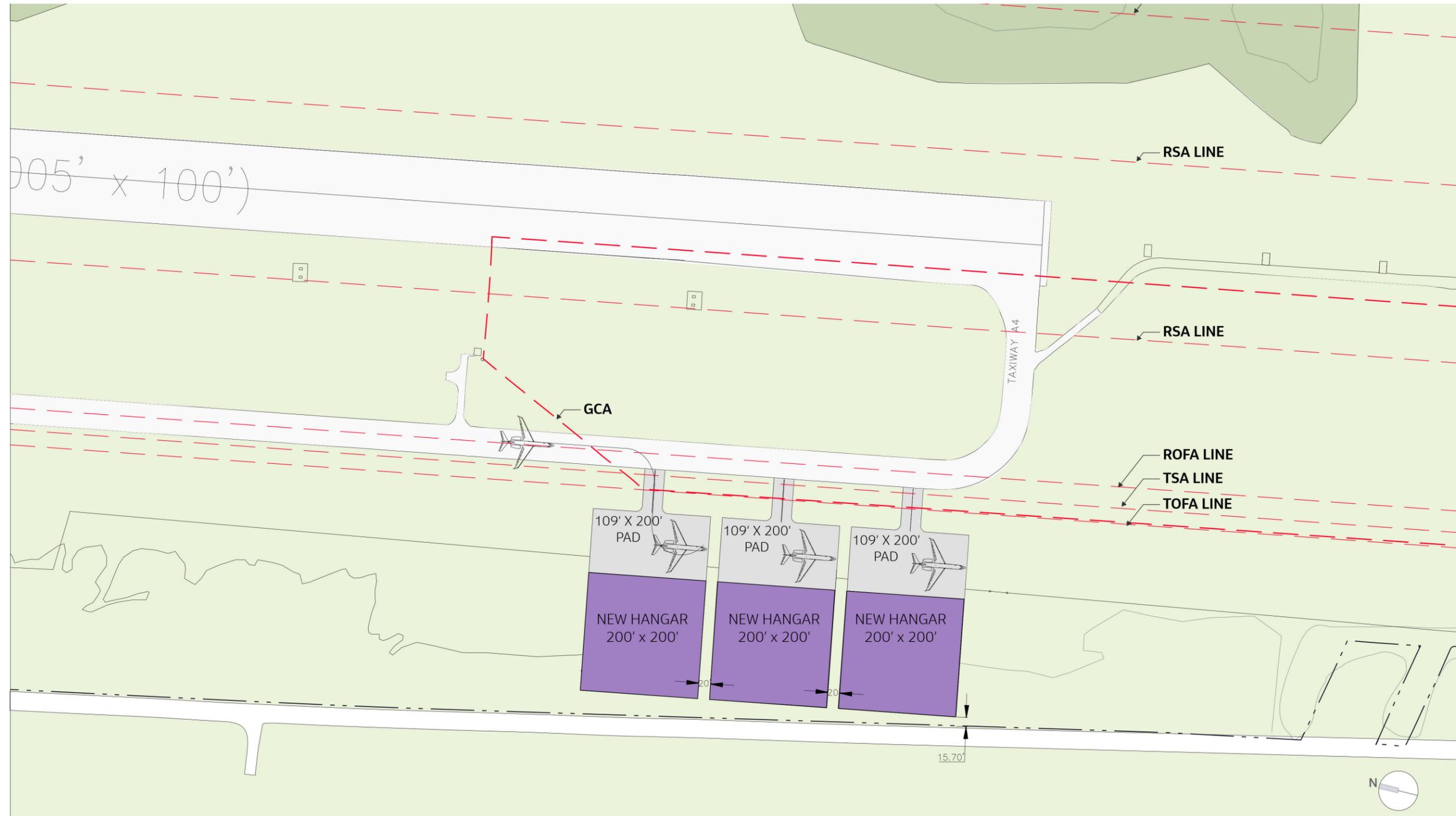


Figure 27. Proposed South Corridor Hangar Development

Appendix 1
Inventory



Appendix 1. Inventory

This section provides more detail and photos of each building within the terminal study area.

1.1 Main Terminal Building (MTB)



The main part of the Concord Municipal Airport Terminal Building is a two-story brick structure that was constructed in 1937. A single-story brick expansion on the north side of the building was later added in 1961, making the total size of the MTB 9,300 SF. The building includes office space, storage rooms, a lounge area for pilots and passengers, restrooms, and a kitchen. Previously, the office space was occupied by Northeast Airlines, the National Weather Bureau, FAA Flight Service Station, the NH DOT Division of Aeronautics (primarily on the second floor), and other private entities. Currently Concord Aviation Services occupies an office in main part the Terminal Building, although their primary point of business, as well as Hertz, is in Hangar 1.



Figure 1-1. Main Terminal Building – West Facing Façade

Front (West) façade of the Concord Municipal Airport Main Terminal Building. This view shows the main part of the terminal where a pilot lounge, restrooms, and small kitchen are located.



Figure 1-2. Main Terminal Building- West Facing Façade

Front (West) façade of the Concord Municipal Airport Main Terminal Building. This view shows the extension off the left of the terminal where office space is located.



Figure 1-3. Main Terminal Building – East Facing Façade
Rear (East) façade of the Main Terminal Building as seen from the South West corner of the corporate apron. This view shows the airside entrance into the main part of the terminal building.



Figure 1-4. Main Terminal Building - East Facing Façade
Rear (East) façade of the Main Terminal Building as seen from the North West corner of the corporate apron. This view shows the extension off the main part of the terminal where offices are located.

The building is generally in fair condition. In 2018 a donation was provided to the City to make cosmetic improvements to the lobby area. There are no visible cracks or areas of crumbling in the exterior brick walls or building foundation. The roof appeared to be in good condition and there are no signs of leaking or obvious roof damage. The windows are single pane with no insulation and appear to be original to the building. Although the windows looked to be in good condition, the nature of single pane windows provide very little in means of energy efficiency or comfort to those inside the building in terms of ambient noise and/or outside temperatures. The carpeted areas of the building are in good condition with no visible staining or areas of wearing. The newer portion of the Terminal Building as well as the restrooms and kitchen area all have linoleum flooring. The linoleum in these areas is in generally good condition, however there are areas where the flooring is slightly more worn and dated such as in the kitchen.

The finishes within the MTB are in fair, but dated, condition. In 2018 the building received its first cosmetic update since 1961. The ceiling in the original part of the building is sheetrock and painted which looks to be in good condition. The ceiling in the Terminal expansion is tile which show no evidence of water damage or staining and are also in good condition. The walls and trim have been painted as part of the recent cosmetic updates. The paint is in excellent condition, the various trim around the original part of the terminal has been neatly painted and all the paint is new. The walls are in good condition with no holes, cracks, or bowing present. Portions of the lighting around the building have been updated. The waiting area and pilot lounge in the original part of the Terminal Building have been fitted with updated lighting fixtures. The remainder of the building utilizes both recessed and hanging florescent lighting.



Figure 1-5. Kitchen
The kitchen located in the original part of the Terminal Building.

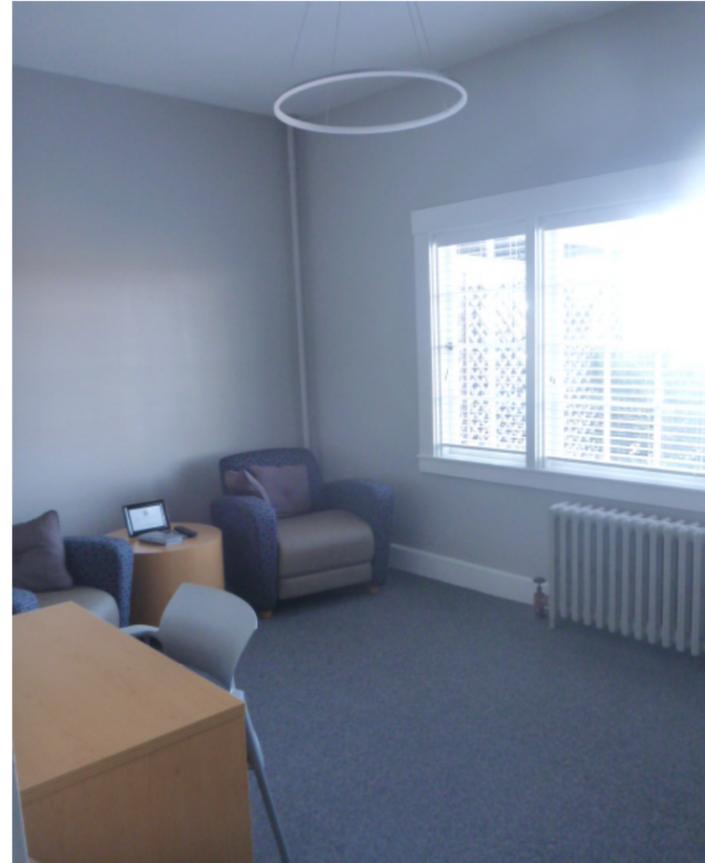


Figure 1-6. Pilot Lounge.
Recently updated Pilot Lounge located in the older part of the Terminal.



Figure 1-7. Hallway leading to Offices
Hallway in newer terminal expansion leading to offices.

All the utilities in the building are functioning including the heating and plumbing. There are several restrooms in the Terminal Building. A women's restroom and handicap accessible unisex restroom are in the older part of the terminal and a single unisex restroom is in the expansion. The building is heated using exposed radiators throughout. Additionally, there are multiple air-conditioning units installed in various windows of the building. The Terminal Building could benefit from more energy efficient upgrades in the means of windows, HVAC, and lighting.



Figure 1-8. Restroom Located in Expansion
One of two unisex bathrooms in the building. This restroom is located in the newer part of the terminal.



1.2 Hangar #1 FBO Office

Hangar #1 is located about 80 feet to the south of the Terminal Building. It is constructed of a steel frame, wood siding, and has an aluminum roof. The aluminum roof is in good condition and has recently been renovated. This hangar is heated and insulated. Other utilities include plumbing and electricity. The exterior of Hangar #1 looks to be in fair condition. The white paint on the exterior of the hangar is in poor condition and chipping throughout. The windows appear to be single pane glass and original to the hangar. The hangar was constructed in 1937.

Concord Aviation Services uses Hangar #1 for a variety of activities. Half of the hangar is used as a maintenance facility which includes a work shop, parts storage, restrooms, and a small office space. The other portion of the hangar contains the front office for the FBO and Hertz rental cars. This includes a lounge area with a vending machine, office space for pilots, areas for flight instruction, and restrooms.



Figure 1-9. Hangar #1 FBO –North Facing Façade

Landside entrance (North) of Hangar #1 as seen from the Southwest corner of the Main Terminal Building.



Figure 1-10. Hangar #1 FBO –East Facing Façade

Airside entrance (East) of Hangar #1 as seen from the Southeast corner of the Main Terminal Building.

The interior of Hangar #1 is in fair, but dated, condition. Beginning with the front offices, the walls throughout this portion of the hangar are finished with wood paneling. It appears that the wood paneling has been recently painted along with the molding around the door frames, ceiling, and window frames. The floor is covered with the same linoleum that is in the older portion of the Terminal Building. The floor appears worn and the pattern is dated. The ceiling is also finished with wood paneling which has been painted. Both the walls and ceiling are sturdy and show no signs of bowing or cracking.

The front office is lit with older florescent lighting throughout and no cosmetic updates have been made to the interior of this hangar other than new paint. Hertz rental cars uses about 18 feet of modular reception counters allowing for two to three agents to assist customers. The reception area for Concord Aviation Services occupies about 30 SF of space which utilizes the same modular counters. All of the modular counters are in fair condition and show areas of heavy wear. Additionally, the design looks dated throughout the office.



The additional office space towards the rear (West) of the building is used for flight instruction and desk space for pilots. There are about eight desks which are mostly divided by office cubical walls. This rear office area is in dire need of refurbishment. The area is cluttered, tight, and poorly laid out (desk space is very limited due to computers taking up most of the area). The desks are in poor condition and some are beginning to bow from the weight of the extremely out-of-date computer monitors and other materials on top of them. Other than filing cabinets there is no storage area for instruction materials in this part of the hangar. The office furniture looks heavily worn and in need of replacement. The restrooms in this half of the hangar are in the rear next to an exposed HVAC system. There is a men's and women's restroom, neither of which are handicap accessible. The restroom stalls are made of plywood which has been painted and the doors have been fitted with eyehooks for locks. The dimensions of the stalls are small and not accommodating to those with disabilities.



Figure 1-11. Lounge Area
Hangar #1 as seen from the Concord Aviation Services reception counter.



Figure 1-12. Reception Counters
Reception counters for Concord Aviation Services as seen from the lounge area.



Figure 1-13. Hertz Rental Cars
Hertz rental car reception counters as seen from the FBO reception counters.



Figure 1-14. Rear Office Space

Office space located in the rear (West end) of the Hangar 1. This space is used by visiting pilots and for flight instruction.



Figure 1-15. Rear Office Space

Rear office space as seen from the entrance into the restrooms.



Figure 1-16. Exposed HVAC
HVAC unit located in the very rear of the Hangar directly next to the restrooms. This utility is not enclosed in a closet.



Figure 1-17. Men's Restroom
Men's Restroom as seen from the HVAC unit (not shown) which is located directly to the left.



Figure 1-18. Women's Restroom

Women's Restroom which is located directly right of the Men's Restroom.

The other half of Hangar #1 is the Concord Aviation Services aircraft maintenance facility. This half of the hangar is also heated and has a workshop, a restroom, parts storage, and small office space. The maintenance facility is well kept however it is in need of several repairs and updates. The ceiling is made of tile which is deteriorating in areas where the hangar doors open. This poses a potential hazard to both the people and aircraft inside if the debris from the ceiling were to fall. The roof on Hangar #1 was recently renovated and there are no signs of leaks on any of the ceiling tiles. The floor in the maintenance facility is made of concrete slabs that have been painted white. The concrete slabs are beginning to deteriorate in some areas and the white paint is fading throughout the floor. The interior walls are wooden and also painted white and gives the appearance of a bright and spacious facility which is lit by hanging fluorescent lights.



Figure 1-19. Hangar #1 Maintenance Facility

Maintenance facility located in Hangar #1.

The southern most portion of Hangar #1 is where the workshop, parts storage, small office space, and restroom are located. The office space is the only portion of the maintenance facility that is carpeted and the rest of the flooring is concrete. The portion of carpeting that is present appears to be very worn and dirty. The office is very bright due to two large windows and fluorescent lighting. The walls and ceiling throughout the southern portion of Hangar #1 are made of the same wood paneling as the North side where the reception counters are located.



Figure 1-20. Hangar #1 Maintenance Facility

The roof of the Hangar was recently renovated. Signs of water damage is evident from previous issues with the roof.



To the right of the office space is the entrance of the parts storage room. The storage room is a tight space that is equipped with steel shelving and cabinets which provide some means of organization. The shelving units are at capacity which in turn has caused parts to be stored on the floor and in the corners of the room. Towards the east end (rear) of the hangar is the workshop. The space is very bright in part to having three windows providing ample light. A large counter runs the length of the workshop in addition to a island of similar size in the center of the room. Counter space in the workshop is limited due to a lack of existing storage. The only available workspace is the island in the middle of the room. The condition of the workshop and parts room is overall fair, but lacks critical organization.



Figure 1-21. Parts Storage

Parts storage room is tight on space and available organized storage.

Continuing East is where the restroom and a washer and dryer are located. This is the rear of the hangar (East side) and this area is accessible from the workshop. This portion of the hangar is a very confined space that appears to be in disarray. The washing machine and dryer are available for maintenance employees who actively use them. The tight space appears to be doubling as a small storage space and laundry area. The very little shelving that exists is at capacity with clothing, cleaning supplies, and miscellaneous items. Additionally, this area houses another portion of the hangar's HVAC unit, a shower, and restroom. This portion of Hangar #1 is inadequate for providing a clean space for maintenance employees to use as its intended purpose.



Figure 1-22. Small Office Space

Small office space located on the South side of Hangar #1. This office space is connected to the maintenance facility and used by the maintenance employees.



Figure 1-23. Parts Storage

Shelves in the parts storage room as seen from the entrance way of the connected workshop. Note the storage shelves which are filled to capacity.



Figure 1-24. Workshop
Workshop as seen from the door way into the parts storage room.



Figure 1-25. Laundry Area
Washer and dryer located in the very rear of the South half of Hanger #1. Not pictured is the restroom and shower also located in this area.



Figure 1-26. Laundry Area

Part of the HVAC unit that occupies a large amount of space in the laundry area. Behind the brown divider (left) is the shower stall.



Figure 1-27. Workshop

Workshop as seen from the entrance of the laundry area. In the background is the doorway leading to the parts storage room.



1.3 Hangar #2

Hangar #2 is located immediately to the south of Hangar #1 about 30 feet in distance. This hangar is used primarily for aircraft storage and is heated, which is in high demand at the Airport. Hangar #2 is used as community aircraft storage managed by Concord Aviation Services. It is reported that although the hangar is heated, this utility is unreliable and in need of repairs. Hangar #2 is constructed of a steel frame and concrete block which are coated in plaster. The roof is aluminum and in good condition, there are no signs of water leaking inside of the hangar. The exterior of Hangar #2 is in poor condition. The grey paint that covers the exterior is starting to chip and there are areas where the plaster is cracking. The overall appearance of the hangar looks very tired and worn.



Figure 1-28. Hangar #2 - West Facing Façade
Landside view of the rear (West side) of Hangar #2 as seen from the Southwest corner of the FBO.



Figure 1-29. Hangar #2 - South Facing Façade
Airside view of front corner (Southeast corner) of Hangar #2.

The interior of Hangar #2 is in good condition given the distressed exterior. The floor is made of concrete slabs like those in the maintenance facility. Although the floor is covered in oil stains the overall condition of the concrete is in good condition. The ceiling which is covered in tiles is in good condition with no visible signs of damage or leaks. The interior walls are sturdy and made of numerous materials including concrete block, brick, and wood. There is shelving in the rear of the hangar, but it does not have a dedicated storage room, restroom, or office space.



Figure 1-30. Interior of Hangar #2
Interior of Hangar #2 as seen from the entrance (East side).



Figure 1-31. Interior of Hangar #2
Interior of the hangar as seen from the Southeast corner. The storage shelves can be seen in the very rear of the hangar.



1.4 Hangar #3

Hangar #3 is adjacent to Hangar #2 and is home to Craig Avionics. This aviation business has been a tenant of Concord Municipal Airport since 1988 and offers services for aircraft radio repair/installation. Hangar #3 is heated and has a breakroom, workshop, office space, restroom, and pilot lounge.



Figure 1-32. Hangar #3 – East Facing Façade
Front (East side) of the Hangar where Craig Avionics is located.

Hangar #3 is constructed of a steel frame, concrete blocks, an aluminum roof, and is partially covered in aluminum siding. The exterior of the hangar is in poor condition and is visibly worn. There is a small landside parking lot located on the north side of the hangar. There have been reports of flooding in this parking lot due to lack of suitable drainage. The water pools around the north entrance to the hangar which creates a dangerous hazard in the winter months.

The aluminum siding that covers a portion of the hangar appears dirty and in some areas the siding is warped. There is no visible cracking or crumbling in the walls. The aluminum roof was recently repaired. The ceiling is comprised of wooden planks covered in sheetrock panels. The ceiling is stained from water damage throughout and deteriorating in many areas which could create a potential hazard. The interior walls are also in need of attention. There are areas along the walls where the white insulation is badly stained and torn. The maintenance facility in Hangar #3 is very dimly lit despite having windows around the exterior. This Hangar is not equipped with nearly as many florescent lights as the maintenance facility located in Hangar #2. The floor in Hangar #3 is made of concrete slabs and is in good condition. The floor is clean and free of stains as it appears to be sealed for protection. The concrete slabs show no signs of heavy wear or deterioration.



Figure 1-33. Hangar #3 – East Facing Façade
Closer view of the front (East side) of Hangar #3



Figure 1-34. Hangar #3 Maintenance Facility
Interior of Craig Avionics Maintenance Facility as seen from airside (East) entrance.



Figure 1-35. Hangar #3 Maintenance Facility
Interior of Craig Avionics Maintenance Facility as seen from airside (East) entrance.



Figure 1-37. Hangar #3 – North Facing Façade
Landside entrance to Hangar #3. This small parking lot is reported to flood.



Figure 1-36. Hangar #3 Maintenance Facility
Airside entrance to Craig Avionics.



1.5 T-Hangars

To the south of Hangar #3 are two T-Hangars that are in good condition. The T-Hangars are made of steel frames, aluminum siding, and aluminum roofing. The exterior of the hangars is in good condition and there are a few areas where the siding is dented. The T-Hangar's do not have heating or plumbing but do have electricity. The aircraft bays are lit, and some hangar doors are fitted with clear plastic panes to allow for natural light.



Figure 1-38. North T-Hangar
North facing façade of the North T-Hangar.

Each T-hangar has six aircraft bays. There are three north facing and three south facing. Combined, both T-hangars provide twelve sheltered parking spaces which are currently all occupied. The pavement surrounding the T-hangar's is made of asphalt and is in fair condition. There are numerous large cracks in the asphalt that have been repaired with rubber crack sealant. The aluminum roofing is in good condition on both T-hangars and there have been no reports of leaking.



Figure 1-39. South T-Hangar
South facing façade of the South T-Hangar.



Figure 1-40. North T-Hangar
Cracks in the pavement around the West side of the North T-Hangar sealed with rubber.



1.6 Hangar #4

Hangar #4 offers additional heated community aircraft storage which is a commodity in high demand at the Airport. The heat in this hangar is reportedly much more reliable than the that of Hangar #2. The hangar is spacious and can accommodate small jet aircraft and twin turboprop aircraft such as a King Air. Hangar #4 is in good condition both externally and internally. The hangar is constructed of a steel frame, concrete blocks, aluminum siding, and an aluminum roof. The siding is in good condition and showing some signs of aging in a few areas of the structure. The roof is also in good condition and has not shown any signs of leaking or need for repair. The interior of Hangar #4 is very bright due to the white insulation covering the walls and the white paint on the concrete floors. The hanging florescent lights are fitted with newer bulbs that illuminate the hangar with bright white light. The ceiling is in good condition as well. The tiles show no signs of previous water damage or leaking. The insulation surrounding the interior of the hangar is also in good condition and does not show signs of sagging or warping. The floor in Hangar #4 is made of concrete slabs which are worn but fair condition. There are areas of the floor that have large cracks that span across several concrete slabs. Additionally, there are chips throughout the concrete as well as staining and areas of faded paint.



Figure 1-41. Hangar #4 – North East corner
East facing façade (front) and North facing façade (right side) of Hangar #4.



Figure 1-42. Hangar #4 Interior
Interior of Hangar #4 as seen from the Northwest corner.



Figure 1-43. Hangar #4 Interior
Large crack in the floor spanning across several concrete slabs.



The south side of Hangar #4 contains a large office space. The office space is in good condition and is not currently occupied by a tenant. The first-floor office space is bright and well-lit from multiple large windows. There is a lounge area in front of the offices which is furnished with four arm chairs and a lighting fixture. The linoleum floors are in good condition and appear clean and new. The walls and ceiling are both in good condition throughout the two stories of space. The ceilings are made of tile and show no signs of water damage or need of replacement. The walls are coated in newer paint and look to be in good condition. The second story of office space is carpeted throughout in with dark blue carpet which is in good condition. The offices are mostly empty, but the existing office furniture was in good condition as well.



Figure 1-44. Office Space
Lounge area on the first floor of office space in Hangar #4.



Figure 1-45. Office Space
First floor office space located on the South side of Hangar #4.

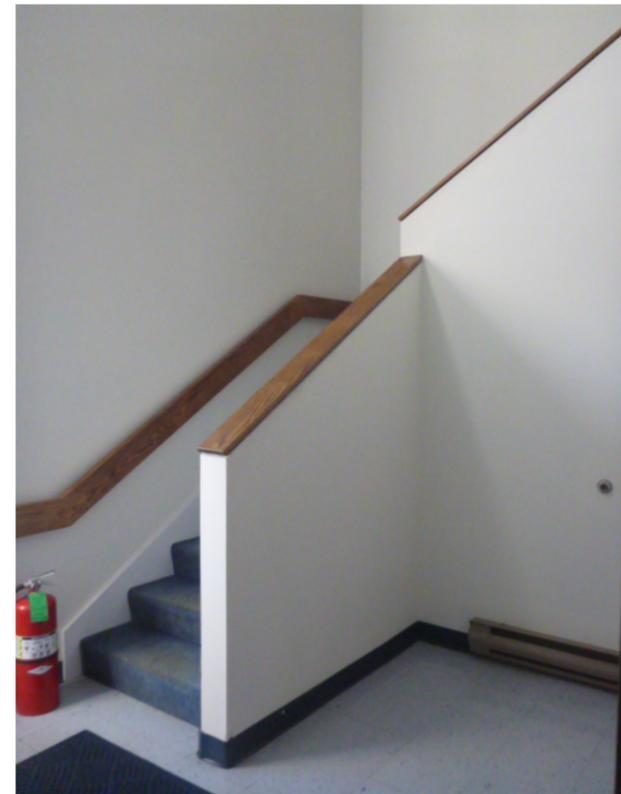


Figure 1-46. Office Space
Stairs leading to the second floor of office space in Hangar #4.

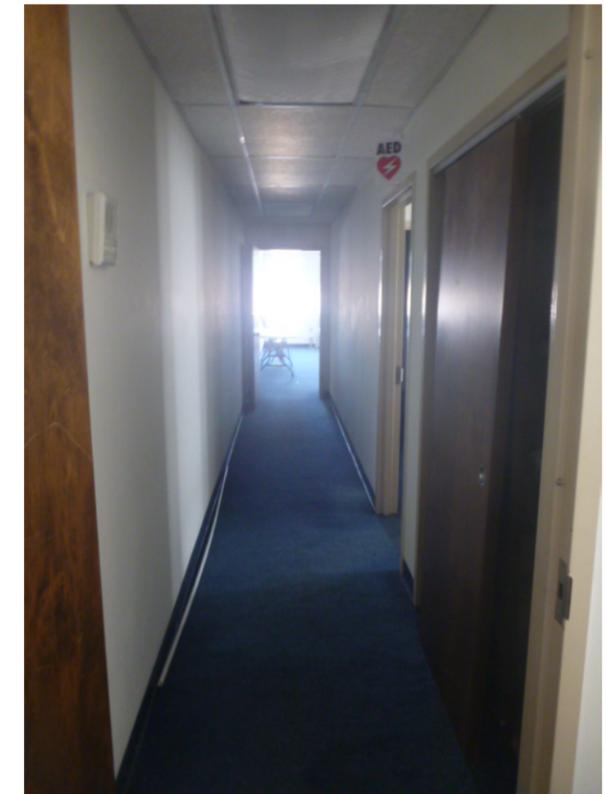


Figure 1-47. Office Space
Hallway on the second floor leading to offices.



Figure 1-48. Office Space
Large office on the second floor of Hangar #4.



Figure 1-49. Office Space

Large conference room on the second floor of office space in Hangar.



Figure 1-50. Hangar #4 - South Facing Façade

Exterior of Hangar #4, South façade.

1.7 New Hampshire State Police Hangar

The New Hampshire State Police Aviation Unit occupies the Southernmost hangar along Airport Road. The Hangar is located about 60 feet directly South of Hangar #4. The NH State Police Aviation Unit consists of two manned aircraft, a Cessna 182T fixed wing aircraft and a Bell 407 helicopter. The Aviation Unit specializes in enforcing motor vehicle and criminal codes using these aircraft. Recently, two unmanned aerial systems (UAS) have been added to the fleet to assist in criminal surveillance, searching for missing or wanted persons, and aerial photography.



Figure 1-51. NH State Police Hangar – East facing Façade

The hangar is constructed of a steel frame, aluminum siding, and an aluminum roof. The structure appears to be in generally good condition. The bi-folding hangar door is aluminum and in working condition. The aluminum siding around the hangar is in good condition and is not dented or warped. The roof is also in good condition and has not been reported to leak. Utilities for the hangar include heating, plumbing, and electricity. There is a small office space and restroom in the hangar used by the NH State Police Aviation Unit.



Figure 1-52. NH State Police Hangar – North facing Façade



Figure 1-53. Looking North
View of the North end of the Airport from the New Hampshire State Police hangar.

1.8 Airport Financial Review

Concord Airport is owned and operated by the City of Concord. Airport oversight is provided by the City's Community Development Department. The Fixed Base Operator (FBO), Concord Aviation Services, provides day-to-day airport management services under contract to the City.

AIRPORT ORGANIZATIONAL CHART

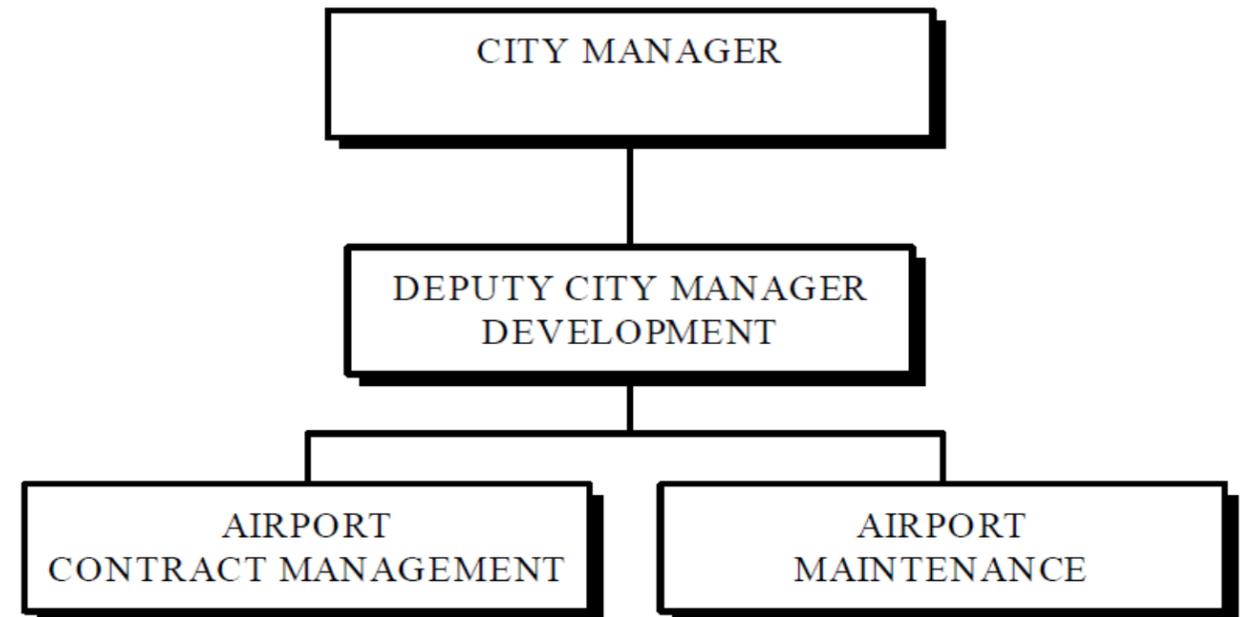


Figure 1-54. Airport Organizational Chart

Source: City of Concord, NH Operating Budget and Capital Improvement Program, FY 2020



1.9 Summary of Existing Financials

The Airport is listed as a Special Revenue Fund within the City's budget. In addition to the Airport, parking, community development engineering inspection, and property management are also special revenue funds.

As noted in the City's Budget, "Most enterprise/special revenue funds are fully self-supporting and provide administrative overhead payments to the General Fund."

The City's FY 2020 budget noted "Completed terminal lobby improvements at Concord Municipal Airport", which was done through a financial donation of \$20,000 (Source: Concord NH Comprehensive Annual Financial Report, FY 2018, pg. 71). The City's budget details that "City Council accepted a donation of labor, and appropriated funds, to renovate the terminal lobby and pilots' lounge at the Concord Municipal Airport, to make this entrance into Concord more attractive. This project was successfully completed in the summer of 2018."

Airport Special Revenue Fund

- FY19 was budgeted for a \$80,700 loss; estimated loss is \$66,600
- FY20 is budgeted for a \$82,400 loss

- Significant working capital reserves are in place through 2022

Figure 1-55.
 Source: City of Concord FY 2020 Budget Presentation, May 20, 2019

The Airport has been running an operating deficit for a number of years. The City makes up the difference with transfers from internal accounts. FAA Airport Sponsor Grant Assurance No. 24, *Fee and Rental Structure*, states: "It (i.e. the airport sponsor - the City of Concord) will maintain a fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, taking into account such factors as the volume of traffic and economy of collection." The largest source of revenue from the airport is 'building lease or rental', followed by 'fuel flow mark-up'. The largest expense categories are compensation, transfer out, outside services, supplies, and debt service.

A presentation made by the City on the FY 2020 Budget on May 20, 2019, noted the budget deficit (Figure 1-55). The budget presentation also noted certain projects in the Capital Improvement Plan (CIP) for the Airport, which include hangar repairs and the terminal as shown in Figures 1-56, Figure 1-57, and Figure 1-58).

Figure 1-56. City of Concord – Operating Budget and CIP, FY 2020 Airport Budget

	2017 Actual	2018 Actual	2019 Budgeted	2019 Estimated	2020 Budget
Revenue	\$344,919	\$354,333	\$365,199	\$358,713	\$362,378
Expense	\$346,878	\$373,157	\$445,908	\$425,332	\$444,765
Balance	-\$1,959	-\$18,824	-\$80,709	-\$66,619	-\$82,387

2020 Operating Budget					
Airport					
Fund Summary	2019 Budgeted	2019 Estimated	2020 Budget		
Revenue	\$365,199	\$358,713	\$362,378		
Expense	\$445,908	\$425,332	\$444,765		
Net Income (Loss)		(\$66,619)	(\$82,387)		
Beginning Working Capital		\$519,402	\$452,783		
Ending Working Capital		\$452,783	\$370,396		
<u>Reserve</u>					
This fund has a goal to target a working capital reserve that is 10% of operating expenses, including debt service and capital expenditures.					
Budget Detail	2017 Actual	2018 Actual	2019 Budgeted	2019 Estimated	2020 Budget
Revenue					
Airport Operators Grant	\$1,355	\$1,324	\$1,300	\$1,380	\$1,350
Fuel Flow Mark-up	\$30,740	\$30,288	\$41,035	\$30,000	\$30,000
Investment Income	\$2,863	\$6,720	\$3,500	\$6,950	\$6,200
Building Lease or Rental	\$309,961	\$316,001	\$319,364	\$319,364	\$324,828
Insurance Distributions & Credits	\$0	\$0	\$0	\$1,019	\$0
Total Revenue	\$344,919	\$354,333	\$365,199	\$358,713	\$362,378
Expense					
Compensation	\$83,699	\$65,203	\$82,559	\$66,660	\$84,363
Fringe Benefits	\$35,963	\$34,001	\$40,117	\$37,280	\$39,015
Outside Services	\$54,349	\$58,239	\$73,714	\$73,284	\$62,834
Supplies	\$16,622	\$24,477	\$42,993	\$42,993	\$43,955
Utilities	\$21,391	\$23,590	\$23,560	\$23,270	\$23,250
Insurance	\$6,529	\$6,618	\$6,165	\$6,160	\$5,919
Debt Service	\$33,847	\$33,640	\$32,840	\$32,840	\$53,500
Miscellaneous	\$44,818	\$45,835	\$46,600	\$45,485	\$46,395
Transfer Out	\$49,661	\$81,555	\$97,360	\$97,360	\$85,534
Total Expense	\$346,878	\$373,157	\$445,908	\$425,332	\$444,765

Figure 1-57.
 Source: City of Concord, NH Operating Budget and Capital Improvement Program, FY 2020



2020 Operating Budget				
Airport				
Service Indicators	2017 Actual	2018 Actual	2019 Estimated	2020 Projected
1. Number of Based Planes	87	88	95	95
<u>2020 Goals</u>				
1. Complete taxiway A rehabilitation.				
2. Complete terminal study.				
3. Pending Council approval, make improvements to Hangar 3 ceiling and drainage.				
<u>2019 Goals Status</u>				
1. Construct Phase 1 of Taxiway A rehabilitation. <u>9-Month Status:</u> Construction is anticipated to begin in late April 2019 and conclude in the summer.				
2. Conduct the Terminal Area Study. <u>9-Month Status:</u> Jacobs Consulting has scoped this project. Pending grant funding, project should begin in FY 2020.				

Figure 1-58. 2020 Operating Budget

Source: City of Concord, NH Operating Budget and Capital Improvement Program, FY 2020

1.10 Capital Improvement Plan (CIP)

The Airport's current Capital Improvement Plan (CIP) includes projects from Federal Fiscal Year (FFY) 2018 through FFY 2029 (Appendix 1). The CIP is updated annually. As a general aviation airport, it receives \$150,000 in non-primary entitlement (NPE) grants from the FAA. The City can bank four years of NPE grants – or a maximum of \$600,000 - if it has an FAA eligible project within the appropriate time frame.

The terminal project is shown extending over a three-year period, from FFY 2020 through 2022. The CIP has budgeted the non-primary entitlement (NPE) grant of \$150,000 per year for the design, permitting, and construction of the new terminal building, for a total of \$450,000. The CIP also notes that NHDOT and the City will each contribute 5%, which is \$8,333 each, or \$16,666 combined annually, for a total of \$49,998 over three years. That will result in a total of \$499,998 available from the FAA, NHDOT, and City over three years. However, that may not cover the total cost for the terminal program. The additional cost above \$499,998 of the terminal development program will be responsibility of the City.

The two most expensive projects in the CIP are scheduled to occur in FFY 2027, 2028, and 2029, and involve the design and construction of the rehabilitation of Runway 17-35, as well as the associated Runway Safety Area (RSA) south of the runway. Capital improvement projects in FY 2025 through 2029 are shown as underfunded, which means that there is no federal or state money budgeted for the projects in those years at this time.

1.10.1 FAA and NHDOT Grants

In addition to FAA grants, NHDOT issues grants for capital improvements, and the City must also provide the local share of each project's cost. NHDOT Bureau of Aeronautics administers the New Hampshire Airport Improvement and Maintenance program (NHAIM), which "supports the state's goals of preserving and enhancing the state's aviation system by providing funding assistance to eligible airports for airport projects that focus on state objectives of airport safety, airspace access, economic development, and airport capacity." (Appendix 2). Terminal building development is eligible for NHAIM funding, although the priority rating for terminal development is lower than a number of airport development projects, particularly those dealing with safety, capacity, and airspace.

Concord Municipal Airport

CIP # 75
\$155,000
Hangar 3 Repairs
Airport GO Bonds

CIP #77
\$250,000
Plow Truck & De-icing Equipment

Fed/State/Airport



Figure 1-59.

Source: City of Concord FY 2020 Budget Presentation, May 20, 2019

"The NHDOT/BOA will participate in funding up to 80% of eligible project costs. Determination of the funding shares will be made at the project scoping meeting. NHAIM Program funds cannot be used as any share of FAA's Airport Improvement Program projects. The airport sponsor or other non-NHDOT funding source must contribute the remaining project costs. If the non-NHDOT funding is not forthcoming, the project will not be funded."

The Airport also receives FAA discretionary grants, however all general aviation airports in New Hampshire compete for discretionary grants. Grant money is awarded based on assigned national priority rating (NPR) system, as shown in the CIP. The U.S. Congress creates and passes the Airport Improvement Program (AIP) legislation, which is the source of FAA grants to airports for capital improvements. Congress also revises and updates the AIP every several years, and as a result, it is difficult to predict what federal funding levels will be, the federal share of eligible projects, future priority rating systems, or other requirements or changes that may be imposed.



Concord Municipal Airport

CIP # 619
\$315,600

Equipment,
Signage,
Pavement,
Gates & Lights

Federal/Airport

Figure 1-60.
Source: City of Concord FY 2020 Budget Presentation, May 20, 2019

1.11 Forecasts of Aviation Activity

The purpose of the forecasting effort is to determine the level of potential future activity that may reasonably be anticipated in terms of users of the terminal building and other airport facilities within the study area. The forecasts consider historical trends as well as FAA prepared aviation forecasts as related to Concord Municipal Airport.

The forecasts of aviation activity are presented in the sections to follow.

1.11.1 FAA Terminal Area Forecast (TAF)

Data was compiled from the latest FAA Terminal Area Forecast (TAF) prepared for Concord Municipal Airport that was issued in January 2019. It includes both historical aircraft operations data between 1990 – 2017, as well as forecasts of operations between 2018 – 2045.

A series of charts are attached below illustrating the historical aircraft operations data at Concord Municipal Airport between 1990 and 2017, as well as the forecast data between 2018 and 2045. A discussion about the how the TAF is prepared by the FAA is attached below.

Forecast Process

Introduction

The Terminal Area Forecast (TAF) contains historical and forecast data for enplanements, airport operations, tracon operations, and based aircraft. The data cover 264 FAA towered airports, 254 Federal contract tower airports, 30 terminal radar approach control facilities, and 2,805 non FAA airports. Data in the TAF are presented on a U.S. Government fiscal year basis (October through September).

The TAF is available on the Internet. The TAF model and TAF database can be accessed at:

http://www.faa.gov/data_research/aviation/taf

The TAF model allows users to create their own forecast scenarios. The TAF database allows public access to historical and forecast aviation activity data by individual airport, state, or FAA region. In addition, links to the TAF from previous years are available via the address noted above.

The TAF is prepared to assist the FAA in meeting its planning, budgeting, and staffing requirements. In addition, state aviation authorities and other aviation planners use the TAF as a basis for planning airport improvements.

This document presents a set of summary tables on airport activity statistics. The airport activity data contained in the TAF consist of the following:

- **enplanements** (sum of originating and connecting passengers) for air carriers and regionals;
- **itinerant operations** for air carriers, commuters and air taxis, general aviation (GA), and military aircraft;
- **local operations** for civil and military aircraft; and
- **tracon operations** for aircraft operations under radar control.

Data on operations presented in the TAF show historical information from 1990 through 2017 and forecasts for 2018 to 2045.¹ The historical enplanement information in the TAF is from 1976 through 2017 and the 2018 figures represent estimates. The enplanement forecasts are from 2019 to 2045. Appendix A provides a detailed

Figure 1-61. Forecast Process

Source: FAA Terminal Area Forecast Summary
https://www.faa.gov/data_research/aviation/taf/media/taf_summary_fy_2018-2045.pdf



In addition, the FAA's Traffic Flow Management System Counts (TFMSC) tracks aircraft activity at specific airports through flight plan and approach control data. The majority of business jets file flight plans and use FAA air traffic control services, and the business jet activity data was compiled for Concord Municipal Airport between CY 2007 and 2018.

Similar to the majority of general aviation (GA) airports in the U.S., and in New Hampshire, Concord Municipal Airport does not have an air traffic control tower. As a result, there is no entity that counts aircraft operations, so activity levels at Concord Municipal Airport are estimated, not counted. In addition, the number of passenger enplanements are also not counted. At non-towered GA airports, the FAA relies on airport master plans, as well as input from airport managers and each state's Department of Transportation.

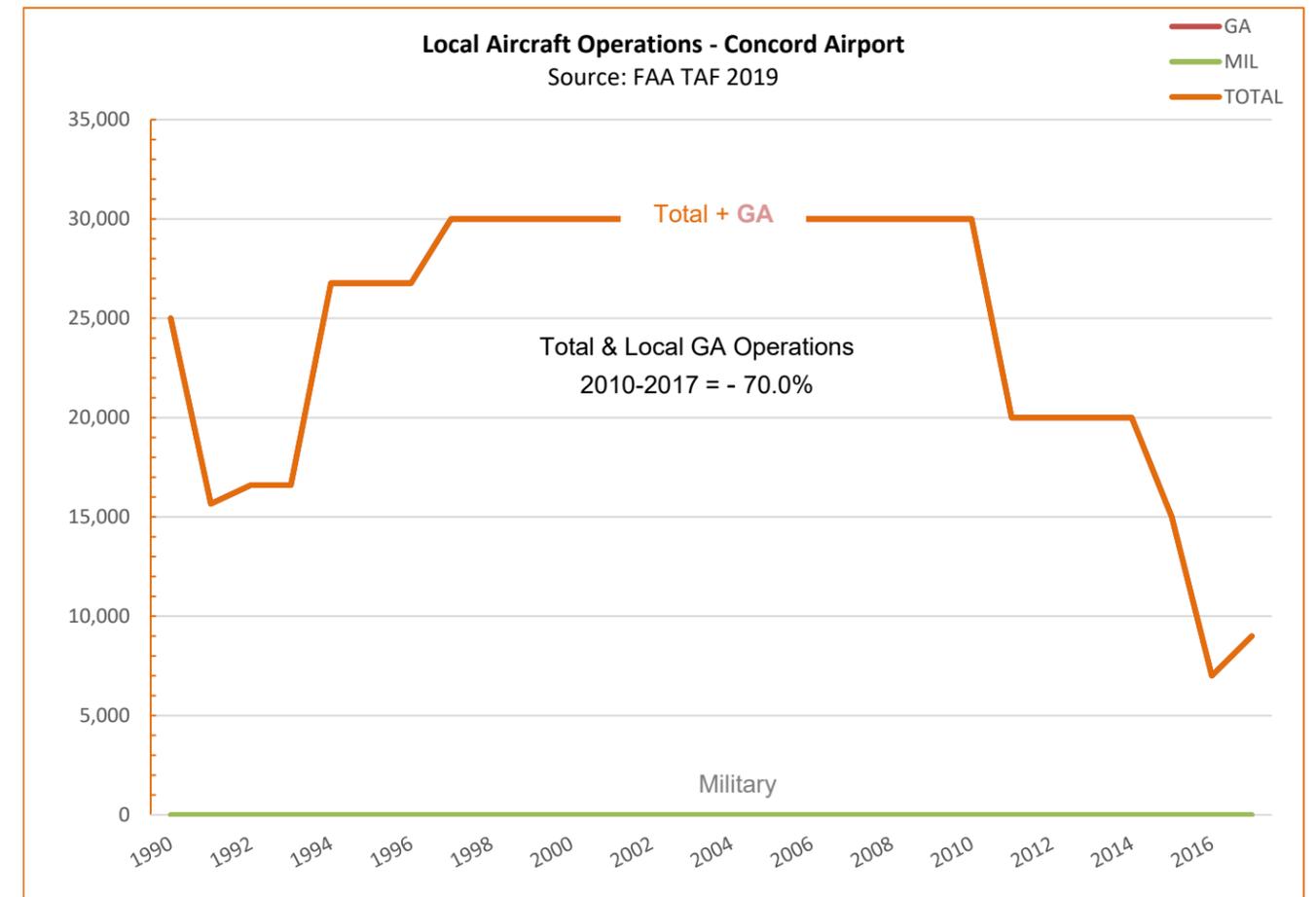
1.12 Historical Data

Historical operational data compiled by the FAA for Concord Municipal Airport displays a decline in aircraft operations. Local, itinerant, and total aircraft operations have fluctuated at Concord Municipal Airport between the years 1990 and 2018 but ultimately have declined by 64.2% (Chart 1). Historical data also indicates a 70% decline in the number local aircraft operations between the peak year of 2010 and 2017 (Chart 2).

CHART 1



CHART 2



There are also itinerant military aircraft operations at Concord Municipal Airport. Concord Municipal Airport is home to the New Hampshire Army National Guard (NHANG) HQ State Area Command as well as NHANG's 1159th Medical Company Air Ambulance and helicopter support facility. The Army Guard operates UH-60 Blackhawk helicopters, which are based at Concord Municipal Airport. Total itinerant aircraft operations also exhibit similar declining trends. Itinerant operations have decreased by 61.3% between the years 1990 and 2017 (Chart 3).

Business jet operations at Concord Municipal Airport declined between 2007 and 2018. Operations shrunk from 1,173 to 44, a decline of 62.5% in that time period (Chart 4). Some of the factors in that decline include the loss of one of two NASCAR Cup Series races each year at the NH International Motor Speedway in Loudon. The races generated a sizeable portion of business jet operations each year. Other factors include the deep economic recession in 2008-2010 which impacted corporate aircraft activity across the U.S., as well as competition from the fixed base operator (FBO) at Manchester Airport, Signature Flight Support, which is 23 miles south of Concord.



CHART 3

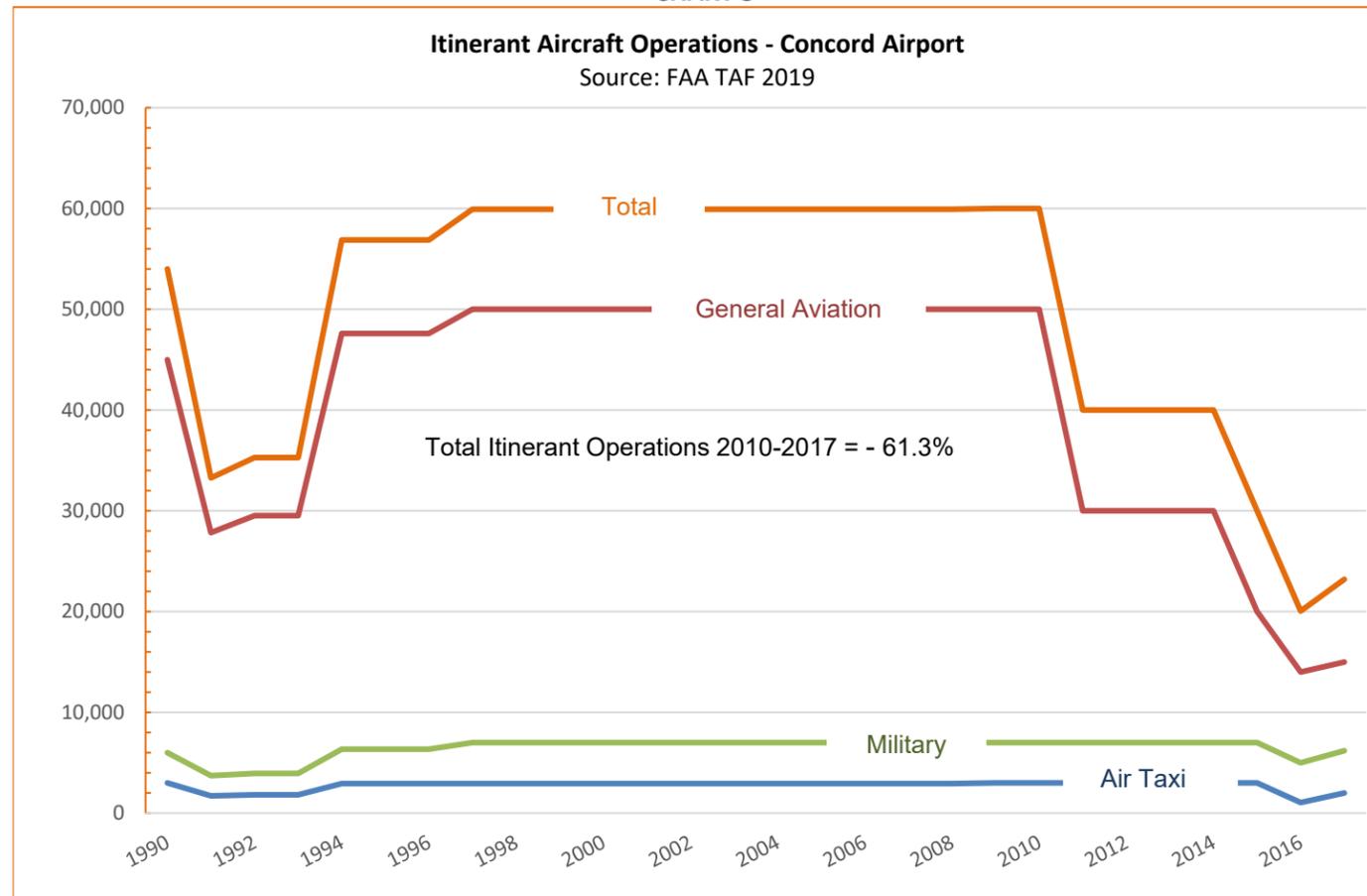
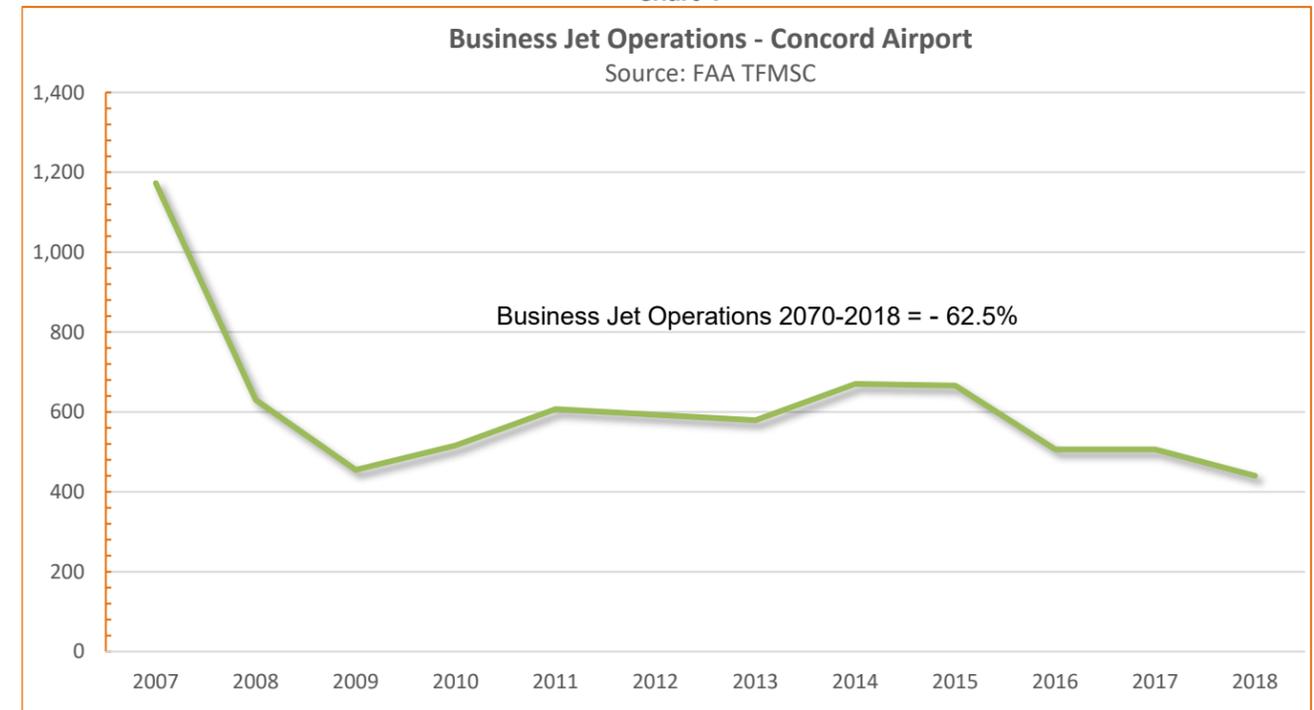


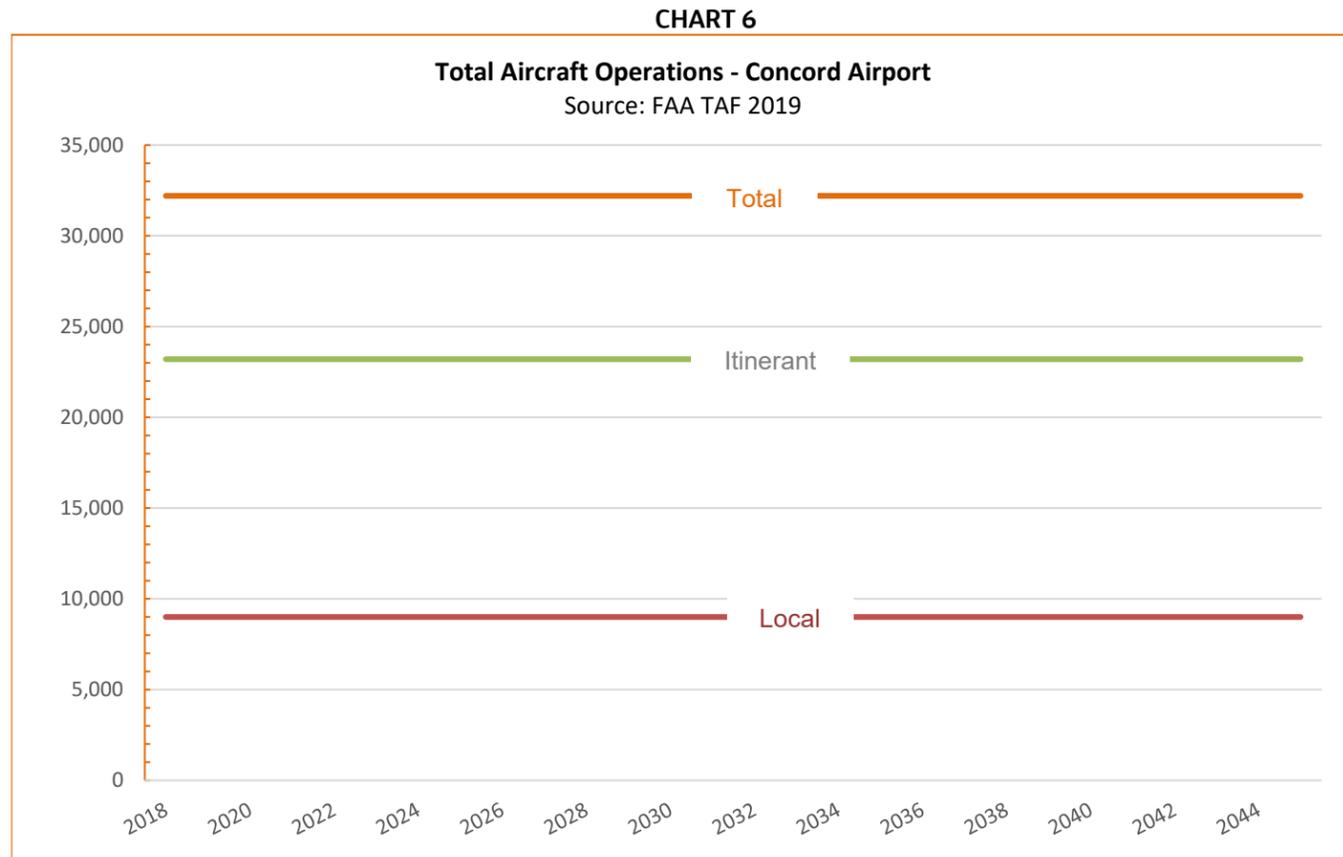
Chart 4





1.13 Forecasted Data

The FAA's Terminal Area Forecast (TAF) does not anticipate any growth in aircraft operations or passenger enplanements throughout the forecast period from the years 2018 to 2045 (Chart 5). Total aircraft operations are forecasted to remain steady at 32,200 per year, or an average of 88 operations per day. Nationally, FAA projects that turbine powered corporate aircraft operations will grow faster than piston-engine aircraft activity. Factors that impact GA aircraft activity levels include disposable personal income (DPI), local-regional-national economic trends (employment, GDP, inflation), the cost of aircraft operations, the performance of the stock market, and any impediments to access to GA aircraft including security regulations..



Records from FAA's National Based Aircraft Inventory Program show that there are 71 based aircraft at Concord Airport. At the peak in 2008, the FAA's TAF indicates that there were 111 based aircraft. FAA's 5010 Airport Master Record for Concord Airport shows the following activity and based aircraft as of October 2019:

Figure 1-62. Activity and Based Aircraft as of October 2019

Based Aircraft	
Single Engine (SE):	64
Multi Engine (ME):	4
Jet (J):	0
TOTAL FIXED WING (SE+ME+J):	68
Helicopters:	3
Gliders:	6
Military:	10
Ultra-Light:	4
Aircraft Operations	
Air Carrier:	0
Air Taxi:	2,000
General Aviation Local:	9,000
General Aviation Itinerant:	15,000
Military:	6,200
TOTAL OPERATIONS:	32,200
Operations for 12 Months Ending:	12/31/2017

Source: GCR AirportIQ 5010 Airport Master Records and Reports
<https://www.gcr1.com/5010web/dashboard/basedaircraft>

This section on land use and zoning is prepared to ensure that compatible land development is proposed within the project area. Members of the City of Concord engineering and planning staff were active participants in the preparation of this study.

1.14 Existing Land Use

The City of Concord's Master Plan 2030, prepared by the City Planning Board and adopted by the City in 2008, provides guidance in terms of both existing and future land use and zoning. The City of Concord encompasses a total of 63.71 square miles, and is divided into six neighborhood districts:

- Penacook
- West Concord
- East Concord
- Concord Heights
- South End
- North/West End

Terminal Area Study



Concord Municipal Airport is situated in the Heights neighborhood (Figure 1-63). The site of the Airport had been the former military parade grounds. Concord Municipal Airport is accessed via I-93, by either Exit 13 onto Manchester Street and then Old Turnpike Road to Airport Road, or by Exit 14, Loudon Road and Airport Road.

The Heights neighborhood is comprised of mixed land uses including high and medium density residential, commercial, industrial, office park, and institutional. Single and multi-family residential land uses extend along Airport Road and Pembroke Road, as well as commercial and industrial land uses.

The land uses along Regional Drive, north of the airport, are primarily industrial, commercial, and office parks. On-airport land uses are primarily aviation oriented, including the NH Army National Guard support facility, with the exception of the designated conservation zones, which are discussed in Section 1.1.5.

The City's Master Plan notes: "The City of Concord owns a majority of the Soucook River frontage between Routes 106 and 3 as a buffer area for the municipal airport, and while this land is not truly held for conservation purposes, it cannot be developed or sold."

Regarding the Heights neighborhood district, the City's Master Plan notes:

"The NH National Guard Reservation at the corner of Airport and Loudon Roads is included in an Institutional area together with the land immediately to the east which is being acquired for runway buffering north of the airport. The land along the east side of Airport Road that directly abuts the municipal airport is also included in an Institutional category.

Industrial areas on the Heights include a triangular-shaped land area on Terrill Park Drive, Old Turnpike Road, and Airport Road; land south of Pembroke Road on Route 106, Industrial Park Drive, the east end of Regional Drive, and portions of Chenell Drive. Integra Drive is also included in an Industrial category.

Office park areas lie south of Pembroke Road between Canterbury Road and land on the east side of Chenell Drive, with another area to the north of Pembroke Road just east of the powerlines, and a third southerly of Chenell from the end of the airport property easterly across Route 106. An area reserved for future Office Park development lies south of Manchester Street westerly of Integra Drive."

The land use goals presented in the Master Plan that are relevant to the airport and Heights neighborhood, include:

- Provide for land uses to support economic development which encompasses a broad range of economic activities that provide employment opportunities, facilitate necessary services, and make goods available to the citizenry, as well as expand the tax base of the City.
- Promote orderly transition among land uses and separate or buffer incompatible uses to the greatest extent possible in order to limit or minimize undesirable impacts to adjacent land uses.
- Coordinate the location, timing and intensity of future development with the availability and capacity of public facilities and utilities, and with the fiscal resources of the community.
- Provide for the reservation of land area of adequate size and in appropriate location for public facilities and utilities that will serve the future land uses.
- Coordinate land use planning with transportation planning to ensure that the land use does not overburden the capacity of, or exceed acceptable levels of service within, the City's transportation system, so that individual components of the transportation system are appropriately utilized, and so that the ability to expand the transportation system is preserved where necessary.
- Improve and enhance the overall appearance and aesthetics of the community inclusive of architectural features, streetscapes, landscapes, and signage.
- Continue to preserve, respect, and enhance the City's historical resources inclusive of buildings, districts, streetscapes, and landscapes.

As illustrated in Figure 1-64 on the following page, the Airport is zoned industrial district (IN). Property to the east and north of the Airport is also zoned industrial district. Other zoning districts contiguous to the Airport include:

- Institutional (IS) – i.e., the NH Army National Guard
- Single Family Residential (RS)
- Open Space Residential (RO)
- Highway Commercial (CH)
- Opportunity Corridor Performance District (OCP)
- Office Park Performance District (OPF)

The existing airport terminal building, and a possible replacement building, are consistent with both the City's zoning, as well as with existing and planned on- and off-airport land uses.

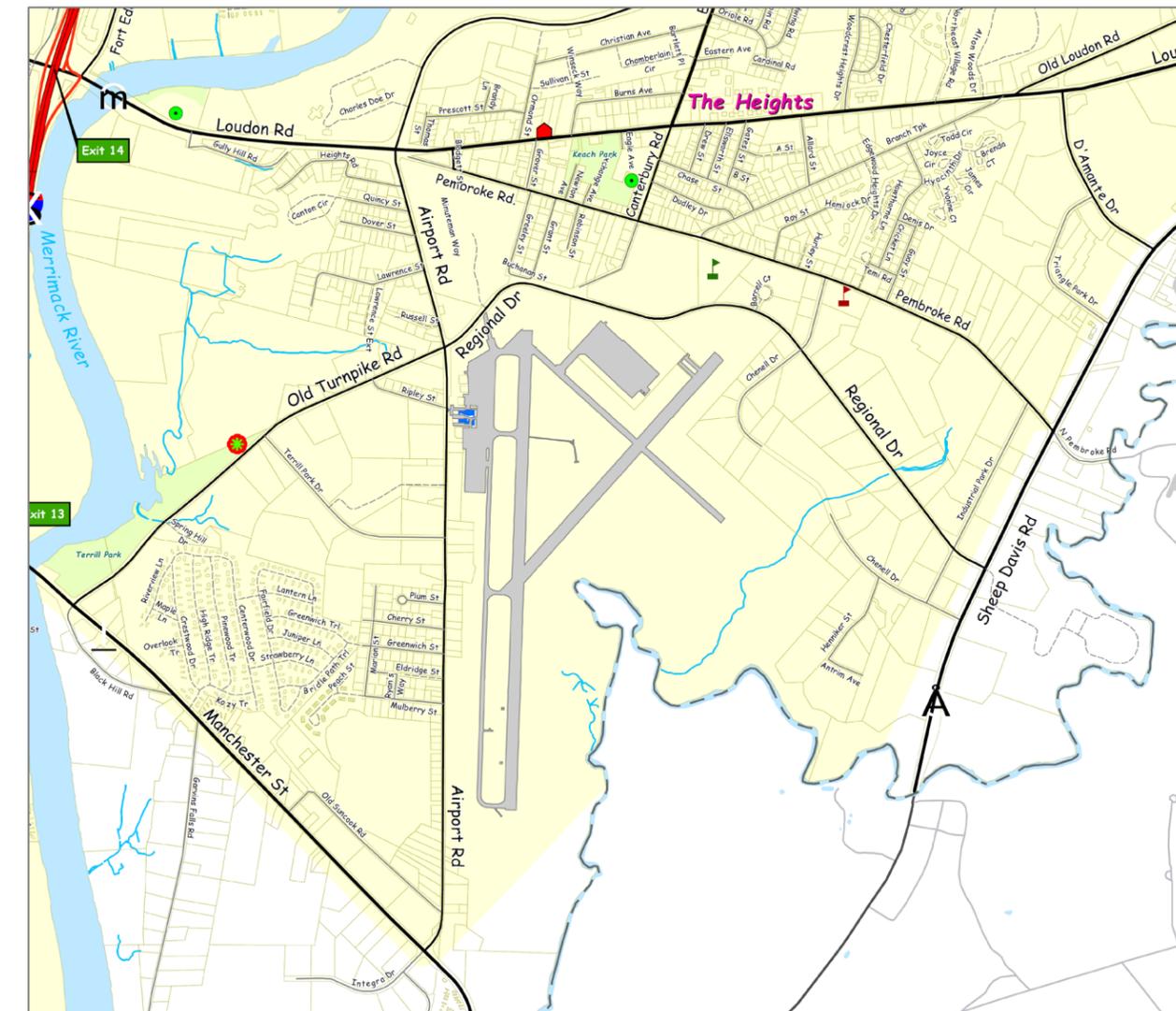


Figure 1-63. Adjacent Zoning and Land Use

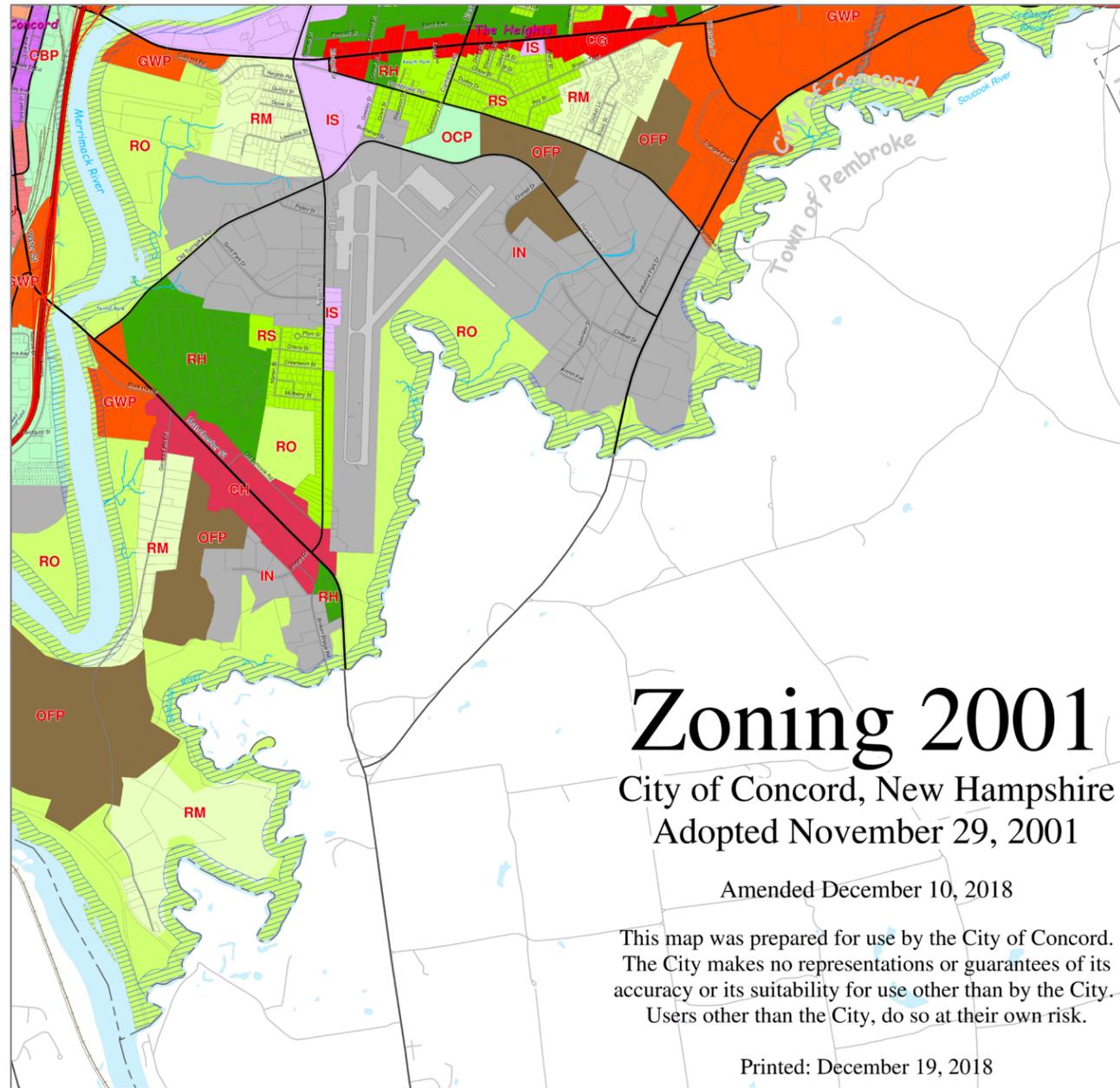


Figure 1-64. Zoning 2001
Source: City of Concord Master Plan, 2008

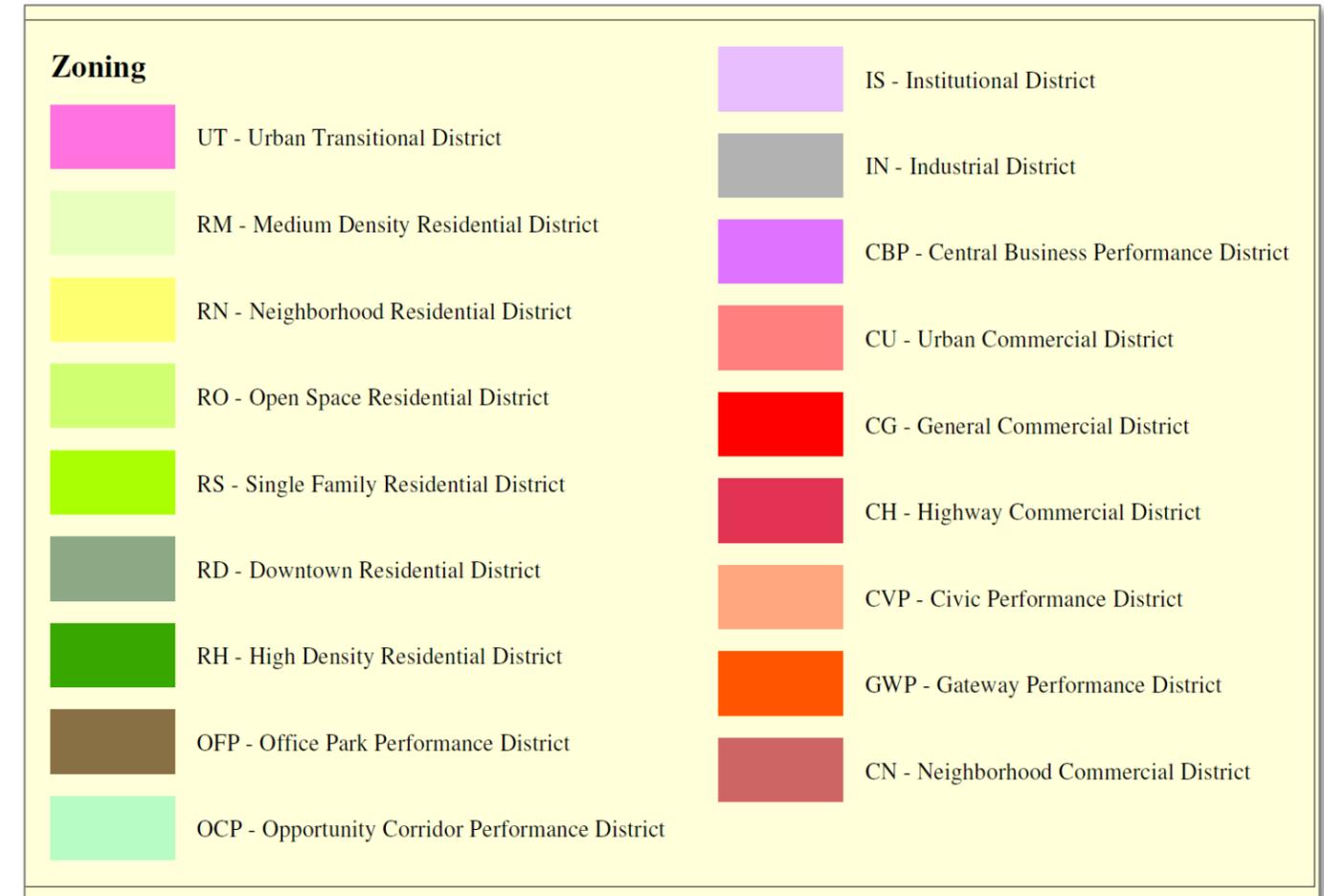


Figure 1-65. Zoning Districts
Source: City of Concord Master Plan, 2008

Terminal Area Study



The City of Concord adopted its Master Plan in 2008. One of the land use goals that were adopted in the Master Plan included:

“Protect and conserve important open space, environmentally sensitive areas, and natural resources outside the Urban Growth Boundary. It should be noted that the airport is the site of one of the largest areas of blue lupine in New England, which is the habitat of the Karner Blue Butterfly, which is a nationally and state endangered species.”

The Master Plan also noted:

“In terms of endangered species, the Karner Blue butterfly has been identified by both the federal and State governments, endangered, two other butterflies, the Frosted Elfin and Persius Duskywing Skipper butterfly were identified by the State. The habitat for these butterflies is the pine barrens found on parts of Concord Heights on the easterly side of the Concord Airport. Some of the airport is subject to a Conservation Management Agreement with the US Fish and Wildlife Service and the NH Fish and Game Department to protect the butterfly habitat.”

Land uses on Concord Municipal Airport are primarily aviation oriented, including the NH Army National Guard support facility. However, there are also designated conservation areas designed to protect the blue lupine flowers, which is habitat for the endangered species of the Karner Blue Butterfly (see Figure 1-66 for a plan of the development and conservation zones.)

An agreement was signed in 2000 by the City of Concord, the US Fish & Wildlife Service, the NH Fish and Game Department, the NH DOT Division of Aeronautics, the NH Department of Resources and Economic Development, and the NH Army National Guard, titled the Concord Municipal Airport Development and Conservation Management Agreement. The Agreement states in part:

“This Agreement is entered into by the above parties for the purpose of managing airport lands in a manner that provides and enhances essential habitat for federally- and state-listed threatened and endangered species of Lepidoptera, such as the Karner Blue Butterfly. This Agreement shall serve as the City's compensation to offset the loss of species and habitat in the designated Development Zones as illustrated on Exhibit A herein. Development within the designated Development Zones may proceed without further consultation under the Endangered Species Act of 1973 {16 U.S.C. 1531-43}, the New Hampshire Endangered Species Conservation Act (RSA 212-A), or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes.”

The existing Airport terminal and a possible replacement terminal building are in the designated development zone (DZ), and a new terminal building on the existing terminal site would not impact designated conservation zones (CZ).

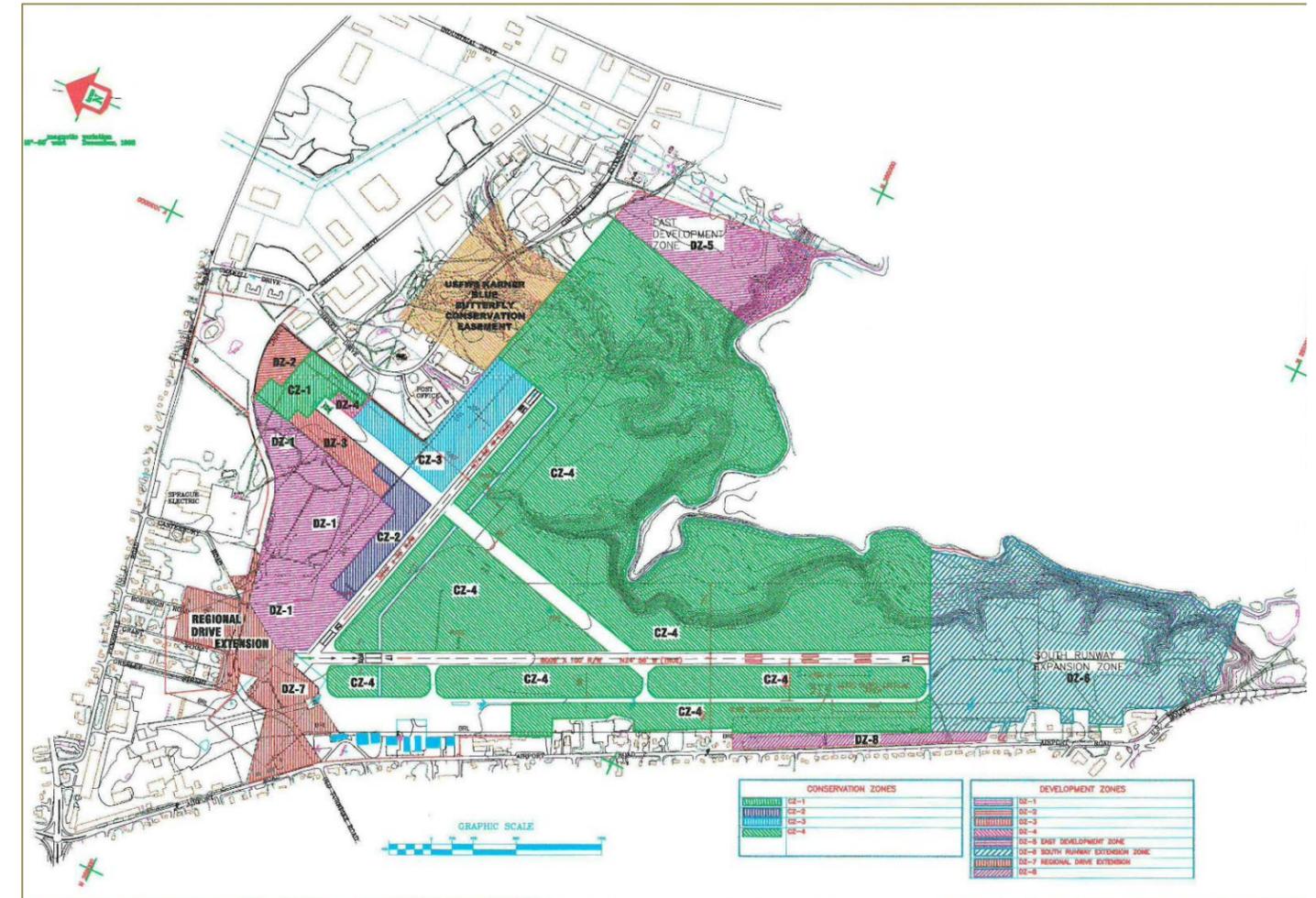


Figure 1-66. Development (DZ) and Conservation Zones (CZ) – Exhibit A

**Appendix 2
Hazmat Report**

June 10, 2019

Mr. John Gorham
Jacobs Engineering Group Inc.
2 Executive Park Drive, Suite 205
Bedford, NH 03110

Re: Concord, NH Airport Terminal
Hazmat Survey Findings
RPF File No. 199583

Dear Mr. Gorham:

On December 10, 2019 and December 12, 2019 RPF Environmental, Inc. (RPF) conducted a survey at the Concord Airport Terminal located at 71 Airport Road in Concord, NH. The survey was performed in the building, as designated by you or your site representative, for accessible hazardous building material as indicated herein. Below is a summary of findings, discussion of the results and preliminary recommendations for proper management of the identified hazardous building material. Attached to this report are the survey data tables, laboratory results, survey methodologies and limitations.

This report is not intended to be used as an abatement specification or work plan. To proceed with abatement work, the following important steps are necessary:

1. A work plan or project design documents must be prepared prior to abatement by a certified abatement project designer. The abatement specification or work plan should then be used to solicit bids from qualified abatement contractors. Only properly licensed contractors should be used for asbestos abatement and disposal.
2. A qualified industrial hygiene/testing consultant should conduct sufficient testing and inspections of the work, independent of the abatement contractor. The consultant should also prepare final abatement reports for the work.

Summary of Findings

The Concord Airport is a two-story masonry structure. The scope of the survey included accessible asbestos-containing building material in accordance with the initial asbestos inspection requirements prior to renovation or demolition work as stated in the State regulations and applicable federal regulations. In addition, the survey included screening for lead paint (LP), polychlorinated biphenyls (PCB) light ballasts and suspect PCB caulking.

Asbestos

Existing survey and testing information reviewed during this survey included limited building survey report prepared by RPF Environmental dated November 28, 2019.

Based on the review of the existing survey records, the following materials are identified as ACBM:

- Grey Ceiling Tile

During this survey, several types of additional suspect asbestos-containing building material (ACBM) were observed by RPF, including friable and nonfriable suspect material. Based on the testing performed by RPF asbestos was detected in the following materials:

- Wall Paneling Adhesive
- Carpet Adhesive
- Ceiling Tile Adhesive
- Window, Door, and Duct Caulking
- Exterior Building Seam Caulking
- Thread Sealant
- Sheet Flooring and Adhesive
- Flue Cement
- Window Glaze

Numerous other suspect materials were identified during this survey but not sampled in order to remain within the overall project budget. For the purposes of this inspection, the following materials are assumed to be asbestos containing. These assumed ACBM include the following:

- Green and White Swirl Floor Tile
- Beige Floor Tile
- Green and Black Swirl Floor Tile
- Green Vinyl Sheet Flooring
- Black Sheet Flooring
- Green Floor Tile
- Dark Blue Floor Tile
- Light Blue Floor Tile
- Beige Mottled Floor Tile
- Pipe and Fitting Insulation

Except for the window caulking, exterior portions of the building were inventoried only. Sampling was not performed of exterior suspect ACBM in order not to damage the integrity of the materials at this time. When feasible and prior to demolition or disturbance, exterior materials should be sampled, including representative core samples or roofing, and analysis performed for asbestos content.

Lead Paint

Based on the year of construction and extent of renovation conducted over the years, it is reasonable to assume that some lead paint (LP) is present. RPF conducted limited spot testing of paint and LP was confirmed to be present on various interior and exterior building components. The intent of the lead testing was for potential lead hazardous waste disposal screening purposes only.

Polychlorinated Biphenyls, Mercury, Refrigerants

Based on the RPF visual observations, polychlorinated biphenyl (PCB) containing light ballasts, mercury containing switches, and fluorescent light bulbs are present through the building. In addition, it is assumed the Freon or other CFCs are present in various refrigeration, cooling units and related equipment.

Depending on the extent of renovation and final construction plans, proper abatement and/or management of the materials will be required in accordance with applicable State and federal regulations. Renovation and demolition plans should be reviewed by a certified industrial hygienist and a licensed project designer for possible asbestos impact issues. Based on the impact assessment and planned usage, technical specifications should be prepared for abatement, as applicable. A management plan should also be prepared to address any asbestos or other hazardous material scheduled to remain after construction.

Discussion of Findings

Asbestos-Containing Building Material

Asbestos is the name for a group of naturally occurring minerals that separate into strong, very fine fibers. The adverse health effects associated with asbestos exposure have been extensively studied for many years. Results of these studies and epidemiological investigations have demonstrated that inhalation of asbestos fibers may lead to increased risk of developing one or more diseases. In all cases, extreme care must be used not to disturb asbestos-containing materials or to create fiber release episodes.

In the accessible locations surveyed, RPF identified fifty-four (54) homogeneous groups of accessible suspect asbestos-containing building material. Suspect materials were identified based on current industry standards, EPA, and other guideline listings of potential suspect ACBM.

The following is a summary list of the suspect ACBM identified and sampled during this survey:

- Plaster, Finish and Base Layer
- Yellow Wall Paneling Adhesive
- Brown Canvas Back Sheet Flooring and Mastic
- Brown Wall Paneling Adhesive
- Yellow Carpet Adhesive
- Sink Basin Undercoat
- Stair Tread Cover
- Thread Sealant
- Brown Fiberboard
- Pebbled Sheet Flooring and Mastic
- Ceramic Tile Adhesive

- 12" Fixed Ceiling Tile (pinhole pattern)
- Brown Ceiling Tile Adhesive
- 12" Fixed Ceiling Tile (smooth)
- Ceramic Floor Tile Grout
- Ceramic Wall Tile Grout
- Yellow Covebase Adhesive
- Window Caulk (multiple types)
- Window Glaze (multiple types)
- Building Seam Caulk
- Flue Cement
- Duct Tape
- 2x4 Spotted Suspended Ceiling Tile
- Wall Surfacing Material
- Gypsum Board and Joint Compound
- Textured Surfacing
- Yellow Wall Paneling Adhesive
- Covebase Adhesive
- Duct Caulking
- Brown Sheet Flooring
- Door Caulk

A total of one-hundred-twenty-eight (128) samples were extracted from the different groups of suspect material in accordance with EPA sampling protocols. Of the samples collected by RPF, asbestos was detected in thirteen (13) groups of suspect ACM.

Table 1 of Appendix A includes a list of ACM and accessible asbestos identified in the building, EPA category listings, and asbestos content. A listing of the different homogenous groups of suspect material identified, samples collected, and analytical results is included in Appendix A.

The ACM identified during this survey consists of friable and nonfriable material. Both the friable and nonfriable ACM was observed to be in good to fair condition and, left undisturbed and properly managed, is unlikely to cause any major fiber release episodes.

Exterior building components, with the exception of accessible window caulk, were not included in the scope of the inspection. In addition, the structure was in current use at the time of the survey and full destructive or exploratory survey methods were not feasible. Suspect materials encountered at the site subsequent to this survey, which are not included on the enclosed listings of suspect material sampled, should be assumed to be ACM until proper testing proves otherwise (for example prior to any disturbance due to maintenance, renovation or demolition activity). Please notify RPF in this event to arrange for proper testing and assessments. Please reference the attached methodology and limitations.

Lead Paint Screening

Based on the type and age of building construction, it is reasonable to assume that various painted surfaces contain some lead. It is not uncommon in buildings such as this and that have had various renovation and upgrades to have both lead containing paint and non-lead containing paint. Lead is a toxic metal that was used for many years in paint and other products found in and around buildings and homes. Exposure to lead may cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Children six years old and under are most at risk; however, adults are also susceptible to the effects of lead over exposure.

For the purposes of this survey, RPF performed screening for lead in paint using a Niton X-Ray Fluorescence (XRF) Meter of various interior and exterior painted surfaces. The results of this lead screening are included at Table 3 of Appendix A.

The results of this testing showed lead concentrations in various interior and exterior painted surfaces at ranging from 0.01 to 10.1 milligrams per square centimeter (mg/cm²). The intent of the lead testing was for potential lead hazardous waste disposal screening purposes only.

Based on this limited testing, it should be assumed that other painted surfaces at the site may also contain lead.

Current State of New Hampshire Lead Poisoning regulations consider any paint that contains greater than 1.0 mg/cm² to be lead-based paint. However, the intent of this survey was for construction purposes only and preliminary demolition waste stream implications, not for compliance with State, HUD, or any regulatory abatement order.

Any surfaces with lead present should be managed in accordance with current rules and guidelines, including but not limited to OSHA worker safety rules and State and EPA waste handling and disposal regulations. U.S. Occupational Safety and Health Administration (OSHA) construction rules do not specify any "safe" or acceptable levels of lead within paint for the purposes of occupational exposures. Therefore, construction work involving paint found to contain lead must be completed in accordance with OSHA regulations, not limited to the lead standard, 29 CFR 1926.62. Contractors completing work in areas found to contain lead, or where it is reasonable to assume lead may be present, should be notified of the presence (and potential presence) of lead and proper work protocols should be used.

As lead was found to be present in the screening, proper waste testing with TCLP extraction for lead and potentially other toxic materials should also be completed prior to disposal of any waste generated in accordance with current EPA requirements. Often times it is recommended that pre-demolition TCLP testing be completed such that waste can be segregated as required during demolition activity. Construction/demolition waste that is found to contain lead greater or equal to 5.0 milligrams per liter (mg/L) by TCLP analysis must be handled and treated as hazardous waste.

Please also note that construction and renovation work involving lead paint in housing and child-occupied facilities built before 1978 is also regulated under the EPA Renovation, Repair, and Painting (RRP) rule. Any contractors conducting such work must be properly certified and must use lead safe work methods pursuant to the EPA RRP rule. In addition, pursuant to Title X requirements landlords and sellers are required to disclose the results of lead inspections to tenants and purchasers, and to provide the warning notice and pamphlets in accordance with Title X and State requirements.

PCB Light Ballasts

For this survey, RPF inventoried a total of approximately 75 light fixture ballasts throughout the building. Visual spot checks of accessible fixture ballasts were conducted throughout the survey areas. The ballasts inspected were checked for a "No PCBs" label. Unmarked ballasts and ballasts without date stamps are assumed to be PCB containing. Two ballasts that were accessed and checked by RPF were labeled as "PCB-Free".

The remainder of the light units could not be checked during this preliminary survey due to accessibility and it was not feasible to de-energize the systems during the survey. Therefore, the potential exists that some of the units not checked may have PCB ballasts.

During demolition of the lights, additional inspections should be performed as noted above. PCB and non-PCB ballasts should be segregated and packaged for waste disposal in accordance with State and federal requirements. There is a substantial cost difference for disposal of PCB ballasts versus non-PCB ballasts. It is also recommended that prior to proceeding with site work, it be requested that the Client or Building Owner provide documentation of PCB ballasts removed and replaced in the building, if available.

PCBs have been shown to cause chronic toxic effects and are a human carcinogen. PCBs are toxic according to the U.S. EPA and are a regulated material. The two primary federal laws that affect the handling of PCBs are the Toxic Substance Control Act and the Superfund Law (CERCLA). Other regulations include various State requirements, Department of Transportation, U.S. OSHA, and the Resource Conservation and Recovery Act. The regulations establish various requirements for the removal, handling, storage and disposal of PCBs.

With regard to light ballasts, approximately half were manufactured prior to 1979 and nearly all pre-1979 ballasts contain PCBs. Ballasts manufactured after July 1, 1978 and that do not contain PCBs are required to be clearly marked "No PCBs". Please note that it is possible that post 1979 ballasts may contain some PCBs in the capacitor oils and more information should be requested if needed for applicable State and federal agencies. PCBs may also be present in common household appliances with small capacitors and as dielectric fluids; other electric equipment such as transformers, switches and voltage regulators; and recent studies have shown PCB content in caulk and some paints. Documentation of current conditions and in-depth hazard assessments, and laboratory testing for these other PCB usages, is beyond the scope-of-work for this initial survey.

PCB in Caulking

One (1) composite samples of building caulk was collected and submitted for analysis to determine PCB content. The sample was comprised of discrete caulking materials collected from various exterior window trim, door trim and building seams. The samples were analyzed by Eastern Analytical, Inc. using EPA Method 8082. PCB-containing caulk is considered PCB bulk product waste if the concentration of PCBs in the caulk is greater than or equal to (\geq) 50 ppm pursuant to 40 CFR § 761.3. PCB bulk product waste includes waste derived from manufactured products containing PCBs in a non-liquid state where the concentration at the time of designation for disposal is \geq 50 ppm PCBs. The results of the PCB analysis are included in Appendix B and showed less than 50 ppm of PCBs in the sample collected.

Visual Observations for Mercury Switches, Fluorescent Light Bulbs, and other HazMat

During the site visit, RPF conducted visual inventories of accessible mercury switches, fluorescent light bulbs and other potentially hazardous or regulated materials present associated with the building. Based on these observations, the following items were observed and inventoried:

Description	Quantity
Fluorescent Light Bulbs	210
Mercury Switches	0
Emergency Lighting/Exit Signs	8
AC Units	8
Refrigerator/Freezers	3
Water Cooler/Fountains	1
Lead Acid Batteries	26

These items generally require special handling, packaging and disposal during renovation or demolition activities. In addition to the above, RPF observed a variety of general cleaning chemicals, stored paints, and other chemicals that may require special handling or disposal. A comprehensive inventory of these items was beyond the scope of this preliminary survey.

Conclusions

Based on the survey findings, the building was found to contain ACBM, LP and other hazardous building material.

In accordance with current regulatory requirements, ACBM that may be impacted or disturbed (such that asbestos fiber release occurs) by renovation, demolition or other such activity must be removed by qualified, licensed firms. Although regulations for removal of nonfriable ACBM are somewhat less stringent than the requirements for friable ACBM, it should be noted that nonfriable ACBM that is subjected to grinding, abrasion, and other forces, could be rendered friable. In this event, the nonfriable ACBM would be re-categorized friable ACBM.

ACBM that will not be impacted by renovation or demolition activity may be left in place if managed properly and if the materials are maintained in good condition. ACBM to remain in the building should be included in an asbestos management plan and operations and maintenance (O&M) program detailing the measures to be used to safely occupy the building until the ACBM is fully removed. An accredited Management Planner should prepare the O&M Program in accordance with the guidelines set forth in 40 CFR Part 763 (ASHERA).

Work impacting LP, fluorescent light bulbs, mercury and potential PCB ballasts must be performed in accordance with current State and federal standards, including but not limited safe work practices, engineering controls, proper waste packaging, and proper disposal. Work involving LP may require notification of tenants, if rented or leased space, prior to start of work.

Sufficiently in advance of the start of renovation and/or remediation work, abatement project design should be completed. As part the initial design steps any planned renovation and demolition activity should be reviewed for potential impact on ACBM. Asbestos removal is highly regulated at the State and federal level, and in some cases, at the local level also. Notification to NH Air Resources is required 10-days prior to the start of interior abatement work and demolition. Only qualified, trained, and licensed firms, as applicable, should be engaged to complete asbestos

removal or other abatement activity. Asbestos abatement work must be designed (abatement specifications or work plan prepared) by accredited personnel.

All employees and contractors that may access or otherwise disturb areas with suspect ACBM present should be notified of the presence of ACBM and possible hidden ACBM, and the need to use caution when proceeding with work. Appropriate notifications, labeling and other hazard communications should be completed to all employees, contractors and others in accordance with US OSHA regulations and other applicable requirements (including asbestos labeling in accordance with 29 CFR Part 1926). The scope of RPF services for this survey did not include labeling of ACBM or hazard communications to other employees, building occupants, contractors, or subcontractors.

Documentation of current ACBM conditions and in-depth hazard assessment is beyond the scope-of-work for this initial survey. With the exception of the specific testing and analysis detailed herein, no other samples of materials, oil, water, ground water, air, or other suspect hazardous materials were collected in the course of this inspection that supports or denies these conclusions. No additional services beyond those explicitly stated herein were performed and none should be inferred or implied. The summary and conclusions are based on reasonably ascertainable information as described in this report. RPF Environmental, Inc. makes no guarantees, warranties, or references regarding this property or the condition of the property after the period of this report.

If you have any questions at this time, or if you would like to discuss the remediation process, please call our office.

Sincerely,
RPF ENVIRONMENTAL, INC.



Allan D. Mercier, CMC
Field Operations Manager

Enclosures:

- Appendix A: Data and Analytical Tables
- Appendix B: PCB Laboratory Results
- Appendix C: Example Photographs
- Appendix D: Summary of Methodology and Limitations

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APPENDIX A

TABLE 1
**JACOBS ENGINEERING
 Concord Airport Terminal Building**
SUMMARY OF ACBM IDENTIFIED

Building Material	Location	Approximate Quantity	EPA Category	Asbestos Results
Interior				
Wall Paneling Adhesive	1 st Floor Hallway, south end wall 2 nd floor, Room 204, north side	110 square feet	Category II Nonfriable	3% Chrysotile
Carpet Adhesive (mixed yellow and black)	Throughout the FAA Room	450 square feet	Category I Nonfriable	3% Chrysotile
Ceiling Tile Adhesive	2 nd floor, Room 204	420 square feet	Category II Nonfriable	3% Chrysotile
Pebble Pattern Sheet Flooring and Black Mastic	1 st floor, Room C2 and K	600 square feet	Category II Nonfriable	3%-30% Chrysotile
Thread Sealant	1 st floor, Room B2	<3 linear feet	Category II Nonfriable	2% Chrysotile
Flue Cement	1 st floor, Room B2 and B3	10 linear feet	Friable	50% Chrysotile
Flooring (various colors and types) and Mastic	Throughout Building	Estimated 2,500 Square Feet	Category I Nonfriable	Assumed ACBM
Pipe and Fitting Insulation	Throughout Basement	250 Linear Feet	Friable	Assumed ACBM
Window Glaze	Throughout Exterior	21 windows @ 15 lf./window	Category II Nonfriable	2% Chrysotile
Door Caulking	Throughout Exterior	2 Doors @ 14 linear feet/door	Category II Nonfriable	2% Chrysotile
Window Caulking	Throughout Exterior	21 windows @ 15 linear feet/window	Category II Nonfriable	2% Chrysotile
Building Seam Caulk	Exterior, west side of building	10 linear feet	Category II Nonfriable	3% Chrysotile
Duct Caulking	Exterior, west side of building	10 linear feet	Category II Nonfriable	2% Chrysotile

Notes:

- Table 1 does not include a listing of all ACBM and suspect ACBM present at the site, only the materials found to be ACBM during the limited testing of this limited survey. Full testing and inspections are required to further identify the types, locations and quantities of ACBM present at this site.
- Please note that Category 1 and Category 2 nonfriable ACM are recategorized as friable and/or RACM under certain conditions. Current State asbestos regulations are more strict and comprehensive than the EPA NESHAPs requirements.
- All quantities are approximate only and should be confirmed during abatement project design and abatement bidding.
- It is likely that some concealed or inaccessible ACBM is present. Care should be used when renovating/demolishing inaccessible building space. Further explorative survey work may be necessary during design and/or in conjunction with demolition.

TABLE 2

**JACOBS ENGINEERING
Concord Airport Terminal Building**

Polarized Light Microscopy – EPA 600/R-93/116 Method

Samples Collected: December 12, 2019

Sample ID	Description	Asbestos Content
121219-HG1a - A	Plaster Finish, White, North Side Wall in FAA Room	None Detected
121219-HG1a - B	Plaster Base, Tan, North Side Wall in FAA Room	None Detected
121219-HG1b - A	Plaster Finish, White, North Side Ceiling in Room F	None Detected
121219-HG1b - B	Plaster Base, Tan, North Side Ceiling in Room F	None Detected
121219-HG1c - A	Plaster Finish, White, South Side Wall in Room M	None Detected
121219-HG1c - B	Plaster Base, Tan, South Side Wall in Room M	None Detected
121219-HG1d - A	Plaster Finish, White, North End Of 1st Floor Hallway	None Detected
121219-HG1d - B	Plaster Base, Tan, North End Of 1st Floor Hallway	None Detected
121219-HG1e - A	Plaster Finish, White, North Wall in Room H	None Detected
121219-HG1e - B	Plaster Base, Tan, North Wall in Room H	None Detected
121219-HG1f - A	Plaster Finish, White, West Wall in Room C2	None Detected
121219-HG1f - B	Plaster Base, Tan, West Wall in Room C2	None Detected
121219-HG1g	Plaster, White, North Wall in Room 204	None Detected
121219-HG3a	Wall Paneling Adhesive, Yellow, At the South End of the First Floor Hallway	3% Chrysotile
121219-HG3b	Wall Paneling Adhesive, Yellow, At the South End of the First Floor Hallway	*SFP
121219-HG7a - A	Canvased Back Sheet Flooring, Brown, On the West Side of Room F	None Detected
121219-HG7a - B	Mastic, Brown, On the West Side of Room F	None Detected
121219-HG7b - A	Canvased Back Sheet Flooring, Brown, in the Middle of Room 204	None Detected
121219-HG7b - B	Mastic, Brown, in the Middle of Room 204	None Detected
121219-HG10a	Wall paneling adhesive, brown, north side of 204	3% Chrysotile
121219-HG10b	Wall paneling adhesive, brown, west side of 204	*SFP
121219-HG11a	Carpet Adhesive, Yellow, South Side of FAA Room	3% Chrysotile
121219-HG11b	Carpet Adhesive, Yellow, South Side of Room K	*SFP
121219-HG12a	Fixed 12" Tile, Big and Little Hole Spotted Pattern, South Side of C2	None Detected
121219-HG12b	Fixed 12" Tile, Big and Little Hole Spotted Pattern, North Side of K2	None Detected
121219-HG13a	Adhesive, Brown, Behind Fixed Ceiling Tile in 204	3% Chrysotile
121219-HG13b	Adhesive, Brown, Behind Fixed Ceiling Tile in 204	*SFP
121219-HG14a	Fixed 12" Ceiling Tile, East Side of Room 204	None Detected
121219-HG14b	Fixed 12" Ceiling Tile, Middle of Room 204	None Detected
121219-HG15a	Ceramic Floor Tile Grout, Beige, North Side of Men's Bathroom II	None Detected
121219-HG15b	Ceramic Floor Tile Grout, Beige, West Side of Men's Bathroom II	None Detected
121219-HG16a	Ceramic Wall Tile Grout, Beige, North Side of Men's Bathroom II	None Detected
121219-HG16b	Ceramic Wall Tile Grout, Beige, North End of First Floor Hallway	None Detected
121219-HG17a	Covebase Adhesive, Yellow, West Side of FAA Room	None Detected
121219-HG17b	Covebase Adhesive, Yellow, East Side of FAA Room	None Detected

Notes:

- SFP Means analysis was terminated because asbestos was detected on a previous homogenous sample.
- Please reference the full report for discussions and additional information and limitations pertaining to these results.

TABLE 2
(continued)

JACOBS ENGINEERING
Concord Airport Terminal Building

Polarized Light Microscopy – EPA 600/R-93/116 Method
Samples Collected: December 12, 2019

Sample ID	Description	Asbestos Content
121219-HG18a	Window caulking, white, exterior north east side windows outside room C2	None Detected
121219-HG18b	Window caulking, white, exterior northeast side windows outside C1	2% Chrysotile
121219-HG19a	Window glazing, white, northeast side windows outside C2	None Detected
121219-HG19b	Window glazing, white, northeast side windows outside C1	None Detected
121219-HG20a	Exterior Building Seam Caulking, White, West Side of Building	3% Chrysotile
121219-HG20b	Exterior Building Seam Caulking, White, West Side of Building	*SFP
121219-HG22a	Flue Cement, Gray, in Room B2	None Detected
121219-HG22b	Flue Cement, Gray, in Room B6	None Detected
121219-HG23a	Window Glazing, Black, in Room B5	None Detected
121219-HG23b	Window Glazing, Black, in Room B6	None Detected
121219-HG24a	Duct Tape, Silver, On the Floor in Room 202	None Detected
121219-HG24b	Duct Tape, Silver, On the Floor in Room 202	None Detected
121219-HG25a	Sink Basin Undercoating, White, in Room H	None Detected
121219-HG25b	Sink Basin Undercoating, White, in Room H	None Detected
121219-HG26a	Stair Tread Cover, Black, At the Top of the Second Floor Staircase	None Detected
121219-HG26b	Stair Tread Cover, Black, At the Bottom of the Second Floor Staircase	None Detected
121219-HG27a	Thread Sealant, White, in Room B2	2% Chrysotile
121219-HG27b	Thread Sealant, White, in Room B3	*SFP
121219-HG29a	Fiberboard, Brown, Northeast Side of Room B5	None Detected
121219-HG29b	Fiberboard, Brown, Southeast Side of Room B5	None Detected
121219-HG30a - A	Sheet Flooring, Pebble, Middle of Room C2	None Detected
121219-HG30a - B	Mastic, Black, Middle of Room C2	3% Chrysotile
121219-HG30b - A	Sheet Flooring, Pebble, South Side of Room K	30% Chrysotile
121219-HG30b - B	Mastic, Black, South Side of Room K	*SFP
121219-HG34a	Ceramic Tile Adhesive, Yellow, North Side of the Men's II Bathroom	None Detected
121219-HG34b	Ceramic Tile Adhesive, Yellow, North End Of 1st Floor Hallway	None Detected
121219-HG35a	2x4 Spotted Suspended Ceiling Tile, Brown, East Side of the FAA Room	None Detected
121219-HG35b	2x4 Spotted Suspended Ceiling Tile, Brown, East Side of Room 204	None Detected
121219-HG38a	Flue Cement, Gray, in Room B2	50% Chrysotile
121219-HG38b	Flue Cement, Gray, in Room B3	*SFP
121219-HG41a	Surfacing Material, White, On North Wall in 2nd Floor Bathroom	None Detected
121219-HG41b	Surfacing Material, White, On North Wall in 2nd Floor Bathroom	None Detected
121219-HG41c	Surfacing Material, White, On South Wall in 2nd Floor Bathroom	None Detected
121219-HG42a - A	Gypsum Wallboard, Gray and Tan, North Side of Room C1	None Detected
121219-HG42a - B	Joint Compound, White, North Side of Room C1	None Detected

Notes:

- SFP Means analysis was terminated because asbestos was detected on a previous homogenous sample.
- Please reference the full report for discussions and additional information and limitations pertaining to these results.

TABLE 2
(continued)

JACOBS ENGINEERING
Concord Airport Terminal Building

Polarized Light Microscopy – EPA 600/R-93/116 Method
 Samples Collected: December 12, 2019

Sample ID	Description	Asbestos Content
121219-HG42b - A	Gypsum Wallboard, Gray and Tan, North Side of Room C	None Detected
121219-HG42b - B	Joint Compound, White, North Side of Room C	None Detected
121219-HG43a	Ceramic Tile Grout, Beige, Main Entryway into Room Q	None Detected
121219-HG43b	Ceramic Tile Grout, Beige, Main Entryway into Room Q	None Detected
121219-HG44a	Textured Surfacing, White, Southeast Wall of Room C2	None Detected
121219-HG44b	Textured Surfacing, White, South Side of Room C2	None Detected
121219-HG44c	Textured Surfacing, White, Southwest Side of Room 2	None Detected
121219-HG45a	Wall paneling adhesive, yellow, room 202	None Detected
121219-HG45b	Wall paneling adhesive, yellow, room 203	None Detected
121219-HG47a	Covebase Adhesive, Brown, inside Room C2	None Detected
121219-HG47b	Covebase Adhesive, Brown, North End of First Floor Hallway	None Detected
121219-HG48a	Duct Caulking, White, West Side of Building	2% Chrysotile
121219-HG48b	Duct Caulking, White, West Side of Building	*SFP
121219-HG49a	Window caulking, white, west side windows	None Detected
121219-HG49b	Window caulking, white, west side windows	2% Chrysotile
121219-HG50a	Window glaze, white, west side windows	None Detected
121219-HG50b	Window glaze, white, west side windows	2% Chrysotile
121219-HG51a	Sheet Flooring, Brown, 2nd Layer, South Side of Room H	None Detected
121219-HG51b	Sheet Flooring, Brown, 2nd Layer, East Side of Room G	None Detected
121219-HG52a	Window glazing, white, east side windows	None Detected
121219-HG52b	Window glazing, white, east side windows	None Detected
121219-HG53a	Window caulking, white, east side windows	None Detected
121219-HG53b	Window caulking, white, east side windows	None Detected
121219-HG54a	Door caulking, white, east side door	None Detected
121219-HG54b	Door caulking, white, west side door	2% Chrysotile

RPF Project Number: 199583

Notes:

- SFP Means analysis was terminated because asbestos was detected on a previous homogenous sample.
- Please reference the full report for discussions and additional information and limitations pertaining to these results.

TABLE 3
**JACOBS ENGINEERING
 Concord Airport Terminal Building**
XRF Testing Results

Sample Collected: December 10, 2019

Component	Substrate	Color	Location	Result (mg/cm ²)
Calibration	--	--	SRM 2573	1.00
Calibration	--	--	SRM 2573	1.10
Calibration	--	--	SRM 2573	1.00
Wall	Plaster	Cream	East side, FAA room, below window	0.18
Wall	Plaster	Cream	South side, FAA room, below grounding unit	0.02
Wall	Plaster	Cream	West side, left of door	0.03
Wall	Plaster	Cream	North side, right of electrical box	0.02
Frame	Metal	Green	East side window, in FAA room	0.05
Wall	Plaster	Cream	West wall, hallway across from FAA (Room 1)	0.02
Wall	Concrete brick	Green	South wall in room across from FAA (Room 1)	0.08
Door	Metal	Green	West door in room across from FAA	0.03
Wall	Plaster	White	East wall in Room 0	0.02
Wall	Plaster	Blue	North wall, Room N	0.02
Door	Wood	Clear	Wood door frame	0.00
Wall	Plaster	Salmon	West wall, meter room in Room A	0.00
Wall tile	Ceramic tile	Mint	South end of 1 st floor hallway, east side wall	0.06
Wall	Plaster	Yellow	Room F, north side wall	0.01
Door	Wood	Cream	Room F, west side door	0.60
Door frame	Wood	Cream	Room F, west side frame	0.60
Ceiling	Plaster	Cream	Room F, ceiling	0.01
Sink	Porcelain	White	Men's room 2, sink	0.40
Radiator	Metal	Green	Men's room 2, west side wall	0.06
Window casing	Wood	Green	Men's room 2, west side wall	7.40
Window sash	Wood	Green	Men's room 2, west side wall	5.40
Windowsill	Wood	Green	Men's room 2, west side wall	1.20
Window screen frame	Wood	Green	Men's room 2, west side wall	0.01
Urinal	Porcelain	White	Men's room 2, east side	5.70
Toilet	Porcelain	White	Men's room 2, east side	3.80
Wall	Plaster	Beige	North side, section Q	0.01
Door	Wood	White	West side, double doors, section Q	0.40
Lower wall	Wood	Gray	South side, section Q	0.40
Door	Wood	White	Section G	0.60
Window casing	Wood	White	South side of section G	0.01
Sink	Porcelain	White	Men's room, west side sink	8.40
Window casing	Wood	White	Men's room, south side window	0.23
Urinal	Porcelain	White	Restroom, right of kitchen, west side	0.00
Toilet	Porcelain	White	Restroom, right of kitchen, west side	0.00

TABLE 3
(continued)

JACOBS ENGINEERING
Concord Airport Terminal Building

XRF Testing Results
 Sample Collected: December 10, 2019

Component	Substrate	Color	Location	Result (mg/cm ²)
Wall	Concrete Block	White	South wall, boiler room	0.00
Wall	Concrete	Gray	North wall, B1	0.00
Wall	Concrete	Pink	West wall, B1	0.00
Door	Wood	Dark Gray	Door, B3	0.09
Door	Wood	Green	Door, B7	0.24
Door	Wood	Pink	Door, B4	0.02
--	Concrete	Green	North wall, B4	0.03
Radiator	Metal	Aqua	Room 201	0.40
Wall	Plaster	Beige	Hallway, south wall	0.23
Door casing	Wood	Brown	Room 202, closet	0.00
Ceiling	Plaster	White	Room 202B	0.09
Wall	Plaster	White	West side, wall	4.60
Radiator	Metal	Silver	East side, radiator 203	3.20
Sash	Wood	White	East side, window	4.10
Door	Wood	White	Closet door, 203	0.01
Radiator	Metal	White	Radiator, Room 205	2.60
Wall	Plaster	White	East wall, Room 205	4.60
Bathtub	Porcelain	White	Bathroom tub	4.10
Sink	Porcelain	White	Bathroom sink	7.30
Radiator	Metal	Cream	Bathroom radiator	1.00
Wall	Plaster	White	East hallway, wall	6.90
Wall	Plaster	Blue	201 & 202	4.2
Ceiling	Concrete	Black	B4 ceiling	0.00
Wall	Wood	Cream	North wall, B6	0.01
Wall	Concrete	Cream	West wall, B6	0.01
Water Pipe	Metal	White	Pipe, B6	0.10
Wood board	Wood	White	Along east wall, B5	1.10
Pole support	Metal	White	B6, middle of room	4.10
Ceiling	Concrete	White	B6	0.00
Wall	Wood	White	B6, east wall	0.00
Pole	Metal	Dark Gray	B7, north	10.1
Paint storage	Wood	Dark Gray	B7, east wall	2.40
Floor	Concrete	Dark Gray	B7	0.19

TABLE 3
(continued)

JACOBS ENGINEERING
Concord Airport Terminal Building

XRF Testing Results
 Sample Collected: December 10, 2019

Component	Substrate	Color	Location	Result (mg/cm ²)
Floor	Concrete	Red	Outside B7	0.12
Casing	Wood	White	201, west window	0.00
Door	Wood	White	201, east door	0.00
Exterior door frame	Wood	White	Main entry	9.90
Exterior window sash	Wood	White	West side, windows	0.03
Exterior electrical room vent	Metal	Red	West facing vent	0.04
Window sash	Wood	White	North side, window	0.50
Gutter drain	Metal	Red	North side, gutter	0.09
Railing	Metal	Black	North side, rail	0.00
Calibration	--	--	SRM 2573	1.10
Calibration	--	--	SRM 2573	1.00
Calibration	--	--	SRM 2573	1.00

199583

Notes:

- Lead based paint as defined by current state lead poisoning prevention regulations, is any paint that contains in excess of 1.0 mg/cm² of lead. OSHA does not currently establish a percent lead for lead paint.
- mg/cm² milligrams per centimeter square; cps means hertz measurement
- Please reference the full report for discussions and additional information and limitations pertaining to these results.

APPENDIX B



SAMPLE CONDITIONS PAGE

EAI ID#: 204881

Client: RPF Environmental, Inc.

Client Designation: Jacobs Engineering / 199583

Temperature upon receipt (°C): 12.5

Received on ice or cold packs (Yes/No): N

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
204881.01	121719-S01	12/18/19	12/17/19	solid	98.6	Adheres to Sample Acceptance Policy

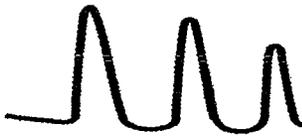
Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.

Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.

All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983
- 2) Standard Methods for Examination of Water and Wastewater, 20th, 21st, 22nd & 23rd Edition or noted Revision year.
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- 4) Hach Water Analysis Handbook, 4th edition, 1992



LABORATORY REPORT

EAI ID#: 204881

Client: RPF Environmental, Inc.

Client Designation: Jacobs Engineering / 199583

Sample ID: 121719-S01

Lab Sample ID: 204881.01
Matrix: solid
Date Sampled: 12/17/19
Date Received: 12/18/19
Units: mg/kg
Date of Extraction/Prep: 12/19/19
Date of Analysis: 12/20/19
Analyst: SG
Method: 8082A
Dilution Factor: 16

PCB-1016	< 0.3
PCB-1221	< 0.3
PCB-1232	< 0.3
PCB-1242	< 0.3
PCB-1248	< 0.3
PCB-1254	0.53
PCB-1260	< 0.3
PCB-1262	< 0.3
PCB-1268	< 0.3
TMX (surr)	82 %R
DCB (surr)	52 %R

Acid clean-up was performed on the samples and associated batch QC.
Detection limits elevated in response to the lower initial mass used for analysis.



QC REPORT

EAI ID#: 204881

Client: RPF Environmental, Inc.

Batch ID: 637122-51507/S121819PCB1

Client Designation: Jacobs Engineering / 199583

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
PCB-1016	< 0.02	0.12 (89 %R)	0.12 (91 %R) (2 RPD)	12/19/2019	mg/kg	40 - 140	30	8082A
PCB-1221	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	12/19/2019	mg/kg			8082A
PCB-1232	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	12/19/2019	mg/kg			8082A
PCB-1242	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	12/19/2019	mg/kg			8082A
PCB-1248	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	12/19/2019	mg/kg			8082A
PCB-1254	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	12/19/2019	mg/kg			8082A
PCB-1260	< 0.02	0.12 (87 %R)	0.12 (88 %R) (1 RPD)	12/19/2019	mg/kg	40 - 140	30	8082A
PCB-1262	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	12/19/2019	mg/kg			8082A
PCB-1268	< 0.02	< 0.02 (%R N/A)	< 0.02 (%R N/A) (RPD N/A)	12/19/2019	mg/kg			8082A
TMX (surr)	85 %R	82 %R	83 %R	12/19/2019	% Rec	30 - 150	30	8082A
DCB (surr)	79 %R	80 %R	80 %R	12/19/2019	% Rec	30 - 150	30	8082A

Samples were extracted and analyzed within holding time limits.

Instrumentation was calibrated in accordance with the method requirements.

The method blanks were free of contamination at the reporting limits.

Sample surrogate recoveries met the above stated criteria.

The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.

There were no exceptions in the analyses, unless noted.

*! Flagged analyte recoveries deviated from the QA/QC limits. Unless noted below, flagged analytes that exceed acceptance limits in the Quality Control sample were not detected in the field samples.

APPENDIX C



1. Yellow wall paneling adhesive behind wall panel at the south end of the first-floor hallway.



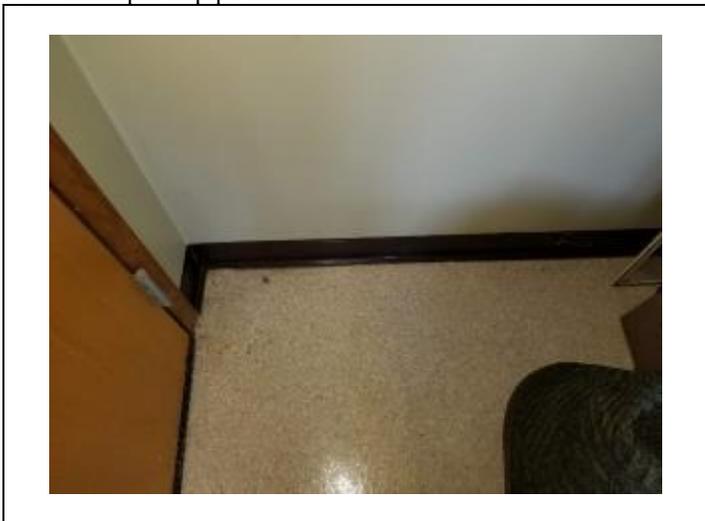
2. Flue cement in room B2..



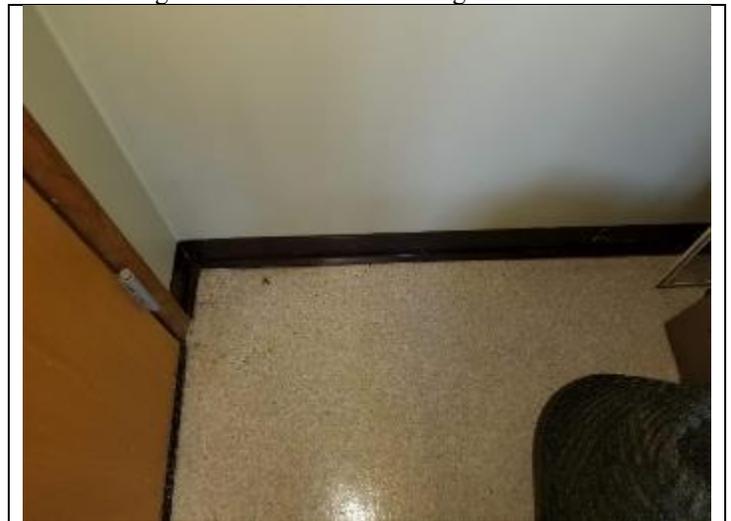
3. Example of pipe insulation run found in the basement.



4. ACM glue daub under fixed ceiling tiles.



5. ACM pebble pattern sheet flooring and adhesive in Room K.



6. Sheet Flooring.

APPENDIX C: SITE PHOTOGRAPHS

Site Address: 71 Airport Road
Concord, NH 03301



www.airpf.com
603-942-5432

Project No. 199583

APPENDIX D

Summary of Methodology: Asbestos-Containing Building Materials Survey

EPA accredited inspector(s) surveyed accessible space in the building or site areas included within the RPF Scope of Work (SOW) to identify suspect asbestos-containing building material (ACBM). Suspect ACBM was inventoried and categorized into homogeneous groups of materials. To the extent indicated in the report, samples were then extracted from the different groups of homogeneous materials in accordance with applicable State and federal rules and regulations. For surveys in which the SOW included full inspections of the affect space, sampling methodologies were based on the requirements set forth in 40 CFR Part 763 (EPA) and 29 CFR Part 1926.1101 (OSHA). For preliminary or limited surveys, findings apply to only the affected material or space as indicated in the RPF SOW and Report and additional inspection and testing will be required to satisfy regulatory obligations associated with renovation, demolition, maintenance and other occupational safety and health requirements. Sampling methodologies used are as set forth in 40 CFR Part 763 (EPA):

- Surfacing Material: 3 bulk samples from each homogenous area and/or material that is 1,000 square feet or less. 5 bulk samples from each homogenous area that is greater than 1,000 square feet but less than or equal to 5000 square feet. 7 bulk samples from each homogenous area that is greater than 5,000 square feet.
- Thermal System Insulation: 3 bulk samples from each homogenous area. 1 bulk sample from each homogenous area of patched thermal system insulation if the patched section is less than 6 linear or square feet. Samples sufficient to determine whether the material is ACM from each insulated mechanical system where cement is utilized on tees, elbows, or valves.
- Miscellaneous ACM: 3 samples from each miscellaneous material. 1 sample if the amount of miscellaneous material is less than 6 square or linear feet.

Collected samples were individually placed into sealed containers, labeled, and submitted with proper chain of custody forms to the RPF NVLAP-accredited vendor laboratory. Sample containers and tools were cleaned after each sample was collected. Samples were analyzed for asbestos content using polarized light microscopy (PLM). Although PLM is the method currently recognized in State and federal regulations for asbestos identification in bulk samples, PLM may not be sensitive enough to detect all of the asbestos fibers in certain types of materials, such as floor tile and other nonfriable ACBM. In the event that more definitive results are requested in cases of with negative or trace results of asbestos are detected, RPF recommends that confirmation testing be completed using transmission electron microscopy.

For each homogeneous group of suspect material, a “stop at first positive” (SFP) method may have been employed during the analysis. The SFP method is based on current EPA sampling protocols and means that if one sample within a homogeneous group of suspect material is found to contain >1% asbestos, then further analysis of that specific homogenous group samples is terminated and the entire homogeneous group of material is considered to be ACBM regardless of the other sample results. This is based on the potential for inconsistent mix of asbestos in the product yielding varying findings across the different individual samples collected from the same homogeneous group. Unless otherwise noted in the report, sample groups found to have 1% to <10% asbestos content are assumed to be ACBM; to rebut this assumption further analysis with point count methods are required.

Inaccessible and hidden areas, including but not limited to wall/floor/ceiling cavity space, space with obstructed access (such as fiberglass insulation above suspended ceilings), sub floors, interiors of mechanical and process equipment, and similar spaces were not included in the inspection and care should be used when accessing these areas in the future. Unless otherwise noted in the RPF Report, destructive survey techniques were not employed during this survey.

In the event that additional suspect materials are encountered that are not addressed in this report, the materials should be properly tested by an accredited inspector. For example, during renovation and demolition it is likely that additional suspect material will be encountered and such suspect materials should be assumed to be hazardous until proper inspection and testing occurs.

RPF followed applicable industry standards; however, various assumptions and limitations of the methods can result in missed materials or misidentification of materials due several factors including but not limited to: inaccessible space due to physical or safety constraints, space that is difficult to reach to fully inspection, assumptions regarding the determination of homogenous groups of suspect material, assumptions regarding attempts to conduct representative sampling, and potential for varying mixtures and layers of material sampled not being representative of all areas of similar material. Also reference the Limitations document attached to the report.

Summary of Methodology: Polychlorinated Biphenyls, Mercury and Refrigerants

Various, accessible fluorescent light fixtures were inspected to determine if the ballasts contain a “No PCBs” label. Ballasts that do not have the “No PCBs” label are assumed to contain PCB.

Only limited fixtures were checked based on accessibility and safety concerns. Further inspection will be required during the course of construction, maintenance, renovation and demolition.

Various equipment and machinery within the building may also contain PCB oils. Specific findings relating to such equipment and machinery were not included in the RPF SOW.

It is common to find fluorescent light bulbs, thermostats and switches are present in buildings. RPF performed a visual inspection of specific areas included in the RPF SOW in an attempt to identify such materials. Findings are limited to the specific accessible space accessed by RPF.

Various compressor and refrigerant equipment may be present and is should be assumed that such equipment contains Freon or other chlorofluorocarbons unless otherwise tested or documented. Although general comment may be provided in the RPF Report, the specific identification of all potential Freon and CFCs is not included in the RPF SOW.

The findings may or may not be fully representative of all of the entire building. Confirmation testing and analysis of PCB, refrigerants and mercury was not included in the RPF SOW.

RPF followed applicable industry standards; however, RPF does not warrant or certify that all hazardous material in or on the building has been identified and included in this report. Various assumptions and limitations of the methods can result in missed materials or misidentification of materials due several factors including but not limited to: inaccessible space due to physical or safety constraints, space that is difficult to reach to fully inspection, electrical safety considerations, and assumptions relating to areas or material being representative of other locations which in fact may not be representative. Also reference the Limitations document attached to the report.

LIMITATIONS

1. The observations and conclusions presented in the Report were based solely upon the services described herein, and not on scientific tasks or procedures beyond the RPF Environmental, Inc. Scope of Work (SOW) as discussed in the proposal and/or agreement. The conclusions and recommendations are based on visual observations and testing, limited as indicated in the Report, and were arrived at in accordance with generally accepted standards of industrial hygiene practice and asbestos professionals. The nature of this survey or monitoring service was limited as indicated herein and in the report or letter of findings. Further testing, survey, and analysis is required to provide more definitive results and findings.
2. For site survey work, observations were made of the designated accessible areas of the site as indicated in the Report. While it was the intent of RPF to conduct a survey to the degree indicated, it is important to note that not all suspect ACM material in the designated areas were specifically assessed and visibility was limited, as indicated, due to the presence of furnishings, equipment, solid walls and solid or suspended ceilings throughout the facility and/or other site conditions. Asbestos or hazardous material may have been used and may be present in areas where detection and assessment is difficult until renovation and/or demolition proceeds. Access and observations relating to electrical and mechanical systems within the building were restricted or not feasible to prevent damage to the systems and minimize safety hazards to the survey team.
3. Although assumptions may have been stated regarding the potential presence of inaccessible or concealed asbestos and other hazardous material, full inspection findings for all asbestos and other hazardous material requires the use of full destructive survey methods to identify possible inaccessible suspect material and this level of survey was not included in the SOW for this project. For preliminary survey work, sampling and analysis as applicable was limited and a full survey throughout the site was not performed. Only the specific areas and /or materials indicated in the report were included in the SOW. This inspection did not include a full hazard assessment survey, full testing or bulk material, or testing to determine current dust concentrations of asbestos in and around the building. Inspection results should not be used for compliance with current EPA and State asbestos in renovation/demolition requirements unless specifically stated as intended for this use in the RPF report and considering the limitations as stated therein and within this limitations document.
4. Where access to portions of the surveyed area was unavailable or limited, RPF renders no opinion of the condition and assessment of these areas. The survey results only apply to areas specifically accessed by RPF during the survey. Interiors of mechanical equipment and other building or process equipment may also have asbestos and other hazardous material present and were not included in this inspection. For renovation and demolition work, further inspection by qualified personnel will be required during the course of construction activity to identify suspect material not previously documented at the site or in this survey report. Bordering properties were not investigated and comprehensive file review and research was not performed.
5. For lead in paint, observations were made of the designated accessible areas of the site as indicated in the Report. Limited testing may have been performed to the extent indicated in the text of the report. In order to conduct thorough hazard assessments for lead exposures, representative surface dust testing, air monitoring and other related testing throughout the building, should be completed. This type of in depth testing and analysis was beyond the scope of services for the initial inspection. For lead surveys with XRF readings, it is recommended that surfaces found to have LBP or trace amount of lead detected with readings of less than 4 mg/cm² be confirmed using laboratory analysis if more definitive results are required. Substrate corrections involving destructive sampling or damage to existing surfaces (to minimize XRF read-through) were not completed. In some instances, destructive testing may be required for more accurate results. In addition, depending on the specific thickness of the paint films on different areas of a building component, differing amounts of wear, and other factors, XRF readings can vary slightly, even on the same building component. Unless otherwise specifically stated in the scope of services and final report, lead testing performed is not intended to comply with other state and federal regulations pertaining to childhood lead poisoning regulations.

6. Air testing is to be considered a “snap shot” of conditions present on the day of the survey with the understanding that conditions may differ at other times or dates or operational conditions for the facility. Results are also limited based on the specific analytical methods utilized. For phase contrast microscopy (PCM) total airborne fiber testing, more sensitive asbestos-specific analysis using transmission electron microscopy (TEM) can be performed upon request.
7. For asbestos bulk and dust testing, although polarize light microscopy (PLM) is the method currently recognized in State and federal regulations for asbestos identification in bulk samples, some industry studies have found that PLM may not be sensitive enough to detect all of the asbestos fibers in certain nonfriable material, vermiculate type insulation, soils, surface dust, and other materials requiring more sensitive analysis to identify possible asbestos fibers. In the event that more definitive results are requested, RPF recommends that confirmation testing be completed using TEM methods or other analytical methods as may be applicable to the material. Detection of possible asbestos fibers may be made more difficult by the presence of other non-asbestos fibrous components such as cellulose, fiber glass, etc., by binder/matrix materials which may mask or obscure fibrous components, and/or by exposure to conditions capable of altering or transforming asbestos. PLM can show significant bias leading to false negatives and false positives for certain types of materials. PLM is limited by the visibility of the asbestos fibers. In some samples the fibers may be reduced to a diameter so small or masked by coatings to such an extent that they cannot be reliably observed or identified using PLM.
8. For hazardous building material inspection or survey work, RPF followed applicable industry standards; however, RPF does not warrant or certify that all asbestos or other hazardous materials in or on the building has been identified and included in this report. Various assumptions and limitations of the methods can result in missed materials or misidentification of materials due to several factors including but not limited to: inaccessible space due to physical or safety constraints, space that is difficult to reach to fully inspect, assumptions regarding the determination of homogenous groups of suspect material, assumptions regarding attempts to conduct representative sampling, and potential for varying mixtures and layers of material sampled not being representative of all areas of similar material.
9. Full assessments often requires multiple rounds of sampling over a period of time for air, bulk material, surface dust and water. Such comprehensive testing was beyond the scope of RPF services. In addition clearance testing for abatement, as applicable, was based on the visual observations and limited ambient area air testing as indicated in the report and in accordance with applicable state and federal regulations. The potential exists that microscopic surface dust remains with contaminant present even in the event that the clearance testing meets the state and federal requirements. Likewise for building surveys, visual observations are not sufficient alone to detect possible contaminant in settled dust. Unless otherwise specifically indicated in the report, surface dust testing was not included in the scope of the RPF services.
10. For abatement or remediation monitoring services: RPF is not responsible for observations and test for specific periods of work that RPF did not perform full shift monitoring of construction, abatement or remediation activity. In the event that problems occurred or concerns arouse regarding contamination, safety or health hazards during periods RPF was not onsite, RPF is not responsible to provide documentation or assurances regarding conditions, safety, air testing results and other compliance issues. RPF may have provided recommendations to the Client, as needed, pertaining to the Client’s Contractor compliance with the technical specifications, schedules, and other project related issues as agreed and based on results of RPF monitoring work. However, actual enforcement, or waiving of, contract provisions and requirements as well as regulatory liabilities shall be the responsibility of Client and Client’s Contractor(s). Off-site abatement activities, such as waste transportation and disposal, were not monitored or inspected by RPF.
11. For services limited to clearance testing following abatement or remediation work by other parties: The testing was limited to clearance testing only and as indicated in the report and a site assessment for possible environmental health and safety hazards was not performed as part of the scope of this testing. Client, or Client’s abatement contractor as applicable, was responsible for performing visual inspections

of the work area to determine completeness of work prior to air clearance testing by RPF.

12. For site work, including but not limited to air clearance testing services, in which RPF did not provide full site safety and health oversight, abatement design, full shift monitoring of all site activity, RPF expresses no warranties, guarantees or certifications of the abatement work conducted by the Client or other employers at the job site(s), conditions during the work, or regulatory compliance, with the exception of the specific airborne concentrations as indicated by the air clearance test performed by RPF during the conditions present for the clearance testing. Unless otherwise specifically noted in the RPF Report, visual inspections and air clearance testing results apply only to the specific work area and conditions present during the testing. RPF did not perform visual inspections of surfaces not accessible in the work area due to the presence of containment barriers or other obstructions. In these instances, some contamination may be present following RPF clearance testing and such contamination may be exposed during and after removal of the containment barriers or other obstructions following RPF testing services. Client or Client's Contractor is responsible for using appropriate care and inspection to identify potential hazards and to remediate such hazards as necessary to ensure compliance and a safe environment.
13. The survey was limited to the material and/or areas as specifically designated in the report and a site assessment for other possible environmental health and safety hazards or subsurface pollution was not performed as part of the scope of this site inspection. Typically, hazardous building materials such as asbestos, lead paint, PCBs, mercury, refrigerants, hydraulic fluids and other hazardous product and materials may be present in buildings. The survey performed by RPF only addresses the specific items as indicated in the Report.
14. For mold and moisture survey services, RPF services did not include design or remediation of moisture intrusion. Some level of mold will remain at the site regardless of RPF testing and Contractor or Client cleaning efforts. RPF testing associated with mold remediation and assessments is limited and may or may not be representative of other surfaces and locations at the site. Mold growth will occur if moisture intrusion deficiencies have not been fully remedied and if the site or work areas are not maintained in a sufficiently dry state. Porous surfaces in mold contaminated areas which are not removed and disposed of will likely result in future spore release, allergen sources, or mold contamination.
15. Existing reports, drawings, and analytical results provided by the Client to RPF, as applicable, were not verified and, as such, RPF has relied upon the data provided as indicated, and has not conducted an independent evaluation of the reliability of these data.
16. Where sample analyses were conducted by an outside laboratory, RPF has relied upon the data provided, and has not conducted an independent evaluation of the reliability of this data.
17. All hazard communication and notification requirements, as required by U.S. OSHA regulation 29 CFR Part 1926, 29 CFR Part 1910, and other applicable rules and regulations, by and between the Client, general contractors, subcontractors, building occupants, employees and other affected persons were the responsibility of the Client and are not part of the RPF SOW.
18. The applicability of the observations and recommendations presented in this report to other portions of the site was not determined. Many accidents, injuries and exposures and environmental conditions are a result of individual employee/employer actions and behaviors, which will vary from day to day, and with operations being conducted. Changes to the site and work conditions that occur subsequent to the RPF inspection may result in conditions which differ from those present during the survey and presented in the findings of the report.

Appendix 3
Capital Improvement Plan



Federal Fiscal Years 2022-2026

20-Jul-20

Concord Municipal Airport

Concord
 CON
 Jacobs Engineering Group, Inc. (2015-2018 + optional 3 years)

Expand title to include study of the RW length

move so no overlap with terminal

15th Draft - FY 2021-2030 - for FY 2020 Grant Offers
 DRAFT - For Discussion Purposes Only

\$60K - cost estimate focus concept design

Validated Based Aircraft Counts	
Past Year	Current Year
70	

	Nat'l Priority Rating Airport Code = B	NPR: 0-100 pts	NPR Work Codes	Validated Based Aircraft Counts		CIP Years						UNDERFUNDED					Summary of
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Underfunded	
Total Federal Share (90% match)				\$209,289	\$150,000	\$150,000	\$150,000	\$300,000	\$540,000	\$395,000	\$500,000	\$1,000,000	\$6,220,000	\$825,000	\$14,210,789	\$22,755,789	
1 Purchase SRE [77] (dump, plows)		75	ST EQ SN	\$209,289													
2 Terminal Building (Phase I - Design, Permit, Bid)	Blank	45	ST TE IM		\$150,000												
3 Terminal Building (Phase II - 1/2 of Construction)		45	ST TE IM			\$150,000											
4 Terminal Building (Phase III - 1/2 of Construction)	Conceptual Design	45	ST TE IM				\$150,000										
5 Apron Pavement Maintenance - Design & Construct [492]	Final Design	60	RE AP IM					\$300,000									
6 Purchase SRE (self-propelled snowblower) [77]	Construction	47	ST EQ SN						\$540,000								
7 Obstruction Removal (placeholder)		47	ST OT OB							\$205,000							
8 Prepare Airport Master Plan Update		66	PL PL MA							\$190,000							
9 Design Only: Rehabilitation and RSA Improvements to Runway 17-35		70	RE TW IM								\$500,000					\$500,000	
10 Construct Only: RSA Improvements to Runway 17-35 (300' R/W Extension to South and shift thresholds)		48	ST RW SF									\$1,000,000				\$1,000,000	
11 Construct: R/W 17-35 Rehabilitation [72]		70	RE RW IM										\$6,220,000			\$6,220,000	
12 Design Only: Based Apron Rehab. and Based Apron Expansion [534]		60	RE AP IM											\$150,000		\$150,000	
13 Construct Only: Based Aircraft Apron Expansion [534]		46	CA AP EX											\$675,000		\$675,000	
14 Design Only: Itinerant Apron Expansion [468]		66	RE TW IM												\$150,000	\$150,000	
15 Construct Only: Itinerant Apron Expansion (468)		66	RE TW IM												\$1,000,000	\$1,000,000	
16 Construct SRE Building Upgrade (add drive-thru bay) [77]		39	ST BD SN												\$337,500	\$337,500	
17 Construct Only: Based Apron Rehabilitation [534]		60	RE AP IM												\$1,080,000	\$1,080,000	
18 Design and Rehabilitate Taxiway (was old R/W 3-21) [72]		66	RE TW IM												\$900,000	\$900,000	
19 Environmental Assessment (for runway extension)		68	PL PL MA												\$290,000	\$290,000	
20 Property Acquisition for Obstruction Removal [71] (in R/W 17 RPZ)		47	ST OT OB												\$427,500	\$427,500	
21 Design & Construct: Drainage/Erosion Repairs (R/W 17&30 intersection)		70	ST RW IM												\$1,575,000	\$1,575,000	
22 Design and Construct: Terminal Building**[383]		35	ST TE IM												\$3,150,000	\$3,150,000	
23 Install New Fuel Farm [471]		19	OT OT FF												\$500,000	\$500,000	
24 Design and Construct: R/W 17-35 Extension & RSA Improvements		54	CA RW EX												\$3,315,789	\$3,315,789	
25 Construct Hangar Replacement (Hangars 1, 2, & 3) [536]		32	ST BD MS												\$1,485,000	\$1,485,000	
Sponsor's Share (5% match)				\$11,627	\$8,333	\$8,333	\$8,333	\$16,667	\$30,000	\$21,944	\$27,778	\$55,556	\$345,556	\$45,833	\$789,488	\$1,264,211	
State's Share (5% match)				\$11,627	\$8,333	\$8,333	\$8,333	\$16,667	\$30,000	\$21,944	\$27,778	\$55,556	\$345,556	\$45,833	\$789,488	\$1,264,211	

CARES Act Group 1 Funds to pay for the 10% non-federal share of this project.

Will need to review AIP-eligible equipment list. AIP-eligibility at non-Part 139 certificated airports is limited to two carrier vehicles that were paid for with AIP funds that are 10 years old or less.

Note: While GA terminal buildings must be funded with NPE \$ only, per FAA Order 5100.38D, Table N-7(e), CON does not need to treat this as a revenue generating project ...no restrictions on funding after this project phase is funded.

Can only be an attachment with no carrier vehicle

Consider titles in the names to cover all the items ex. tiedowns, stub taxiways.

Note: [xx] following each project name corresponds to CON's budget items.
 ** Currently eligibility is limited to airport (non-primary) entitlement funds from FAA.

Appendix 4
FAA OE/AAA Review



Archive Search Results: Notice of Proposed Construction or Alteration - On Airport

For information only.

This proposal has not yet been studied. Study outcomes will be posted at a later date. Public comments are not requested, and will not be considered at this time.

Overview	
Study (ASN): 2020-ANE-457-NRA	Received Date: 03/31/2020
Prior Study:	Entered Date: 03/31/2020
Status: Proposed	Map: View Map
Construction / Alteration Information	
Notice Of: Construction	Case Information
Duration: Permanent	Component Type: BUILDINGS
if Temporary : Months: Days:	Development Type: BUILDINGS - Construction
Work Schedule - Start: 09/20/2022	Other Desc:
Work Schedule - End: 09/20/2023	Prior Study:
	Date Determined:
	Letters: None
Structure Details	
Nearest State: NH	Common Frequency Bands
Loc ID: CON	Low Freq High Freq Freq Unit ERP ERP Unit
Airport: CONCORD MUNI	
City: CONCORD	
Latitude: 43-12-24.15 N	
Longitude: 71-30-33.79 W	
Horizontal Datum: NAD83	
Site Elevation (SE): 336 (nearest foot)	
Structure Height (AGL): 21 (nearest foot)	
Describe/Remarks	
Proposed new terminal building.	
Specific Frequencies	

Previous

[Back to Search Result](#)

Next

Appendix 5
Stakeholder Meetings

ACTION ITEMS:

1. Edit the report that was recently sent out regarding the Airport inventory
2. Terminal building site selection – why on the corner vs not further down airport road.
3. Business aspect of restaurant from other airports – find out and relay to Carlos (lease rates, # patrons, air vs land side patrons, \$ income, etc...)
4. Did airports already have tenants when they built new ones or was it a built and the tenants followed?
5. Develop building and site concepts (Min, Med and Max in costs). Consider building to front of roads vs. set back to the airside.

Comments on study Heath presented from Carlos. Just 1) FBO – CAS and 2) Military number on the chart are not zero.

Existing Conditions –

1. Consider demolition – does not meet the program of modern terminal; foundational – code and use issues. Recommend removal b/c of these items. (Michael)

Design Themes –

1. Building blocks for today's meeting.
2. Contemporary terminal building? (Carol) – what is meant? Reply - image – how contemporary will it look. What is there is not necessarily what we would want to keep.
3. Aviators as well as the community (Susie) – something for all not just the few aviators. We see the dual use.
4. Can't rely just on the aviator for financial sustainability. (Susie)
5. How long will this project take place? (Heather) Updating the entire zoning ordinance, what way does the City want to see. About 8 months for study to complete. (Heath) Heights is the neighborhood.
6. We did not design yet b/c we did not want to get in front of the process. (Michael)
7. Community centers along airport road south could be a consideration. (Michael)

Program Analysis –

1. MA completed 5 terminal buildings. Jacobs collected the functional requirements of these buildings – establishes the framework.
2. All share approximately the same area – 5000 SF

3. South Bridge costs are less b/c of the renovation also the area is 3500 SF.
4. Cost/SF on the chart are all in costs (land, site, etc...) more like \$300/SF
5. Did the others have a tenant already when they went out? (Carlos) – Yes about ½ of them did. (Heath)
6. Did we have the costs of the land so we can pull them out? (Trish)
7. At new terminals, do airports have a restaurant or what % has an airport. (Mike) Heath says there should be an opportunity for a restaurant.
8. Aviation alone can't sustain a restaurant – need landside as well. Email of the group going to 5 different airports – about 10 people go to the restaurant out of 35. (Dave)
9. Tremendous circulation on Regional Drive (Heather)
10. Historically the land on the corner would be ideal – there was previous discussions about this corner – has this been discussed? (Trish) The land is under P&S and is with the guard. City Council has agreed but not approved by FAA. Status with the national guard. (Carlos & Carol)
11. Restaurants in GA terminals OK with FAA with some restrictions. How did MA fund it? (Carol) State of MA supported – there was a program at the MA.
12. \$1.5M on the low end is really expensive. CNH is tearing down and building new. Be realistic about the costs (Carol)
13. In MA the gas tax get's split into different funding sources – some to aviation. In the State of NH no \$\$ from car gas tax go to aviation. (Trish)
14. There maybe other low interest loans outside of FAA. (Carol).
15. Is there a push for funding other sources? (Heather) for surface transportation (Trish)
16. Airports that invest in terminal – based on experience – stimulates the airport as it becomes better. Focus on the concept – then check in the costs – will always be a hurdle. (Rick)
17. Does the FAA have any problems with private funds being added to the project. Is that a problem? (Dave) FAA money is still all there as long it is public. FAA will pay for basic flooring but the City wants to increase quality (terrazzo) – City will have to pay the increased value/difference. (Carol)
18. IN district setback will be less in upcoming change (Heather) – however the City can waive the set back – the 50' shown is too big (Carlos) Building and parking setbacks will differ. (Heather)
19. Can we put the building on the corner? (Carlos)
20. Planning – would like to have walkng and have the building closer to the road with circulation closer to airside (Heather)
21. Idea would to have rental cars in the terminal to drive up activity. (Michael)
22. Would not want to put the building 2 far back because couldn't see the airport (Rita)
23. Anywhere the public will be in the building need to see the building, airport management needs to see the airport activity, restaurant would be airside visibility (Carol)

24. Pilot lounge set aside is not necessarily a need. Likely to be long term stay then will get a hotel. Locker room and shower concept is not needed. (Rick) 10'x12' room with toilet is adequate.
25. Public lobby space that can be reconfigured for a community event is useful. So long as the public can use the space (FAA) will fund. If space is rented then FAA won't pay for it. (Carol)
26. We need to present what the FAA will pay the maximum vs what it will look like if the City has to provide more information (Carol)
27. Getting students to the airport, STEM, is we had a playground considered. Café would be a bonus. Kid friendly is important. Community use of the airport is important to make it inviting – community use of the airport. (Rita)
28. City won't be able to manage the shared space – need technology to enter and leave off hours. (Carlos)
29. Existing tenants – long term plans – example FAA RCO facility is there. Need data on who is staying. (Jacobs)
30. FAA array on the wooden tower. Is a RCO (radio). FAA will have to relocate it. (Trish)
31. 1 floor or 2 floors? (Rita) Program on 1 floor. 2nd floor could be put in place but will need elevator, stairs, etc... (Michael)
32. Height restrictions – FAA transitional surface – add a beacon on the building. (Heath)
33. Approach as a Min, medium, max on the costs. (Michael)
34. Ground level play space on the site -with lower fencing (Carol)
35. Funding – NHF&G – personal endowment – education/insects – several hundred thousand \$. NHF&G public affairs could be a help. (Heidi)
36. CAP maybe a partner (Trish)
37. Primary season funding from representative (Trish)
38. Educations – press the button and learn about the butterfly or about the aviation – interactive video (Susie) Students go to NHF&G building frequently – could come here.
39. No plans for a conservatory or public place in the City (Carlos)
40. Local artist council – could weave in the KBB, Lindbergh, primaries. (Heather)
41. President wall – place for a photo opportunity
42. Advisory board will be interested in capturing the NH essence
43. Turned down 100 people rallies (Dave). No current space.
44. School board – physics of flight, weather, land management, business, biology – how to translate into dollars and sense – this is a value added opportunity. (Dave)
45. Grants to bus kids to the site (\$800 for 600 students)
46. Concepts from MA program – character from NH not shown in the photos – MA photos are sterile (Martha) Will look at fitting to the site. 1936 was the hayday of the airport. Granite façade. (Trish) Needs to some degree needs to look like a terminal. (Michael)
47. We do not have the scope for what a restaurant revenue generation. (Heath)
48. How are the current restaurants doing at airports – financial data about how they are doing? (Carlos) Heath to get.

49. More presence on the street – what mitigation can we do to move the building closer to the roadway as the City is looking to do. – effects the balance of the corridor (Heather).
50. Playground can be magnet (Michael) helps drive the restaurant. Aviation theme playgrounds in MVY and New Bedford. One thing drives another.
51. Need place to push snow (Carol)
52. Federal funds – will require mitigation of the historical aspects (Carol)
53. Playground – not a park – parks have different status. (Carol)
54. Consideration of moving the terminal to the south and use the corner for aviation development – hangar (Dave) In the study (Heath)
55. 4-6 weeks to develop the conceptual plans. (Heath)
56. Any input – Carlos appreciated the beginning of this – consider NH-esque. Costs. State capitol, primary, KBB, NASCAR.
57. Likes Beverly – off the shelf (Carlos)
58. City council will be interested in what is important about Concord. Concord coach, concord clock, Lindbergh (Carlos) If it is to NH themed the City council will tell the state to pay for it.
59. Had a map of the arts district of where the things are here (Heather)
60. Think to the future – preservation – be mindful of the culture and image of the City (Susie) – but don't want to juxtapose adding something out of place. (Michael)

CON Terminal Meeting – 3.4.20

JG missed the first 10 minutes – Heath's intro and first few slides

Arrived when MG was on the site layout.

Site Layout

- Susie Pegg asked how does the public get access to the tarmac on 2nd layout with terminal centered on the site
- Carol noted that in the future the apron would be constructed to the north to abut up to the terminal
- Terminal on the road – poor relationship to the airfield. In downtown, want the buildings to be close to the street but not at this site.
- Conditioned hangar – Dave – would be an ideal location. Dave would appreciate the hangar option to build and the green space. Also moves the building closer to Regional drive under Option.
- Could we turn the building? Want it to be willful turned. Consider to maximize the public view from Regional Drive. Will be able to see from the airport – primary see the runway. Will take away the view from the road.
- Approaches are clear

Floor Plan

- Lobby is the fulcrum of the layout
- 5450 SF floor plan
 - o Lobby – public function, last time there was level of enthusiasm to create a public space, presidential wall (granite with state seal)
 - o Admin space – need to see out to the airfield
 - o Pilot's lounge with own lavatory

Elevation

Option A:

- Quonset type façade – airport like
- Lobby looking through open space
- Glass views – admin and restaurant
- Carlos: East facing – sun glare – how to deal with it (fritted glass, automated shade control)
- Carol: Jet blast – pebbles a concern with the glass
- Roof line is a pavilion – straight lines
- Rick – looks too mid-century 'ish'. Not in favor.

Option B:

- Carol: South face get passive heating from the materials on the south walls – currently have windows
- Rick: Can we get a cost estimate on the current vs. future heating/cooling costs. Heath – not in this project but would be in the future project
- MD – would go for LEED platinum. Small – like a large home – could consider triple glazing.
- Carlos – is all the shade control and triple glazing in the \$3M budget. MD said yes. We think this budget is in the \$2M range. Not the furniture.
- Restaurant – would be gravel floor and the first tenant get's to add what they want to put in
- Do we need a fence in front of the building? Purpose (people) – no fence needed
- Restaurant – 1,000 SF is too small.
- Admin – suggested program was 800-900 SF. Currently the airport does not have a need for that much space. Looking at how we grow going forward. Reduce this space? Move meeting space to take over the admin space and expand the restaurant. Consider future proofing the building. All other airports have had the admin space used by the FBO and Airport manager.
- Need the city to do research on the size of restaurant (café).
- Admin space not to get hung on it. Could break up space and have another tenant in the space.
- Preference: Carlos: Option 2 looks like a rest area. Option 1 is preferred by Carlos as it looks like a movie north by northwest.
- Building will be the magnet for the passenger flow – would want the terminal building to be the location of the airport manager/fbo. Makes sense for the airport manager/fbo to be in the terminal. Dave came around to the idea that if the FBO moves to the admin space if a good use as it helps with revenue generation purposes
- How to manage the stormwater. How does this work with the roof coming together in a valley – will it cause a problem for the city in the future. MG said is important to maintain the roof. In the next stage (design) this would be investigate with Cost Benefit analysis of the costs to maintain. Probably white rubber roof.
- Carol – the more maintenance free can make it. Loves the arches. Make them convex. MG confirmed that the top of Option B is flat. CN acknowledged.
- Dave – ceiling heights – glass cleaning and heating – can the ceilings be lowered. MG yes. Dave does not like the idea of pitching the water to the valley as a concern. Roof line could higher in the middle? Will lower the views on the outside.
- Heating and cooling to scale – like a house...a pad mounted equipment outside the building.

April meeting with Airport Advisory Meeting to show refinements.

- Option A is generally preferred
- Program makes sense – don't make it smaller
- Rotate on the site

Per Susie Pegg - Restaurants wants hood space for frying. Susie Pegg says that would be too small. Susie would feels that around 2K SF is needed.

Terminal Study – look at the south area...additional hangars.

Appendix 6
Development and Conservation Management Agreement

CONCORD MUNICIPAL AIRPORT DEVELOPMENT AND CONSERVATION MANAGEMENT AGREEMENT

THIS DEVELOPMENT AND CONSERVATION MANAGEMENT AGREEMENT is made and executed on this 9th day of November, 2000, by and through the CITY OF CONCORD, New Hampshire having its principal office at 41 Green Street, (City Manager's office) Concord, New Hampshire 03301 (hereinafter referred to as "City"); the U. S. FISH AND WILDLIFE SERVICE, having its principal office at 22 Bridge Street, Concord, New Hampshire 03301 (hereinafter referred to as the "Service"); the NEW HAMPSHIRE FISH AND GAME DEPARTMENT, having its principal place of business at 2 Hazen Drive, Concord, New Hampshire 03302 (hereinafter referred to as the "Department"); the NH DEPARTMENT OF RESOURCES & ECONOMIC DEVELOPMENT, 172 Pembroke Road, Concord, New Hampshire 03301 (hereinafter referred to as "DRED"); the NH DEPARTMENT OF TRANSPORTATION, DIVISION OF AERONAUTICS, 65 Airport Road, Concord, New Hampshire 03301 (hereinafter referred to as "NHDOT"); and the NH ARMY NATIONAL GUARD, State Military Reservation, 4 Pembroke Road, Concord, New Hampshire 03301-5652 (hereinafter referred to as the "NHARNG").

This Agreement is entered into by the above parties for the purpose of managing airport lands in a manner that provides and enhances essential habitat for federally- and state-listed threatened and endangered species of Lepidoptera, such as the Karner Blue Butterfly. This Agreement shall serve as the City's compensation to offset the loss of species and habitat in the designated Development Zones as illustrated on Exhibit A herein. Development within the designated Development Zones may proceed without further consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the New Hampshire Endangered Species Conservation Act (RSA 212-A), or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes.

WITNESSETH:

WHEREAS, the Karner Blue Butterfly (Lycaeides melissa samuelis) is a federally-endangered species under the Endangered Species Act of 1973; and the Karner Blue, Persius Duskywing (Erynnis persius persius), and Frosted Elfin (Callophrys irus) are endangered species and Pine Barrens Zanclognatha Moth (Zanclognatha martha) is a threatened species under the New Hampshire Endangered Species Conservation Act (RSA 212-A); and

WHEREAS, Wild Lupine (Lupinus perennis) is the host plant to these butterfly (Lepidopteran) species and the Blunt-Leaved Milkweed (Asclepias amplexicaulis) and Golden Heather (Hudsonia ericoides), are threatened under the New Hampshire Native Plant Protection Act of 1987 (RSA 217-A); and

WHEREAS, the Concord Pine Barrens consist of the unique and greatly diminished Pitch Pine Scrub Oak Pine Barrens ecosystem which provides habitat for the aforementioned species; and

WHEREAS, the City is the owner of certain real estate, hereinafter described, which encompasses natural features of recognized value (namely a significant portion of the declining Concord Pine Barrens natural community, habitat essential to the aforementioned species, a portion of the only known Karner Blue Butterfly population in New England, and the largest Frosted Elfin, Persius Duskywing, Golden Heather and Wild Lupine populations in New Hampshire); and

WHEREAS, the City granted a Conservation Easement approximately 28 acres, more particularly described in Exhibit A as USFWS Conservation Easement, for the purposes of the preservation and maintenance of habitat for the Karner Blue Butterfly, as well as protection and enhancement of plants, animal habitat, and wildlife populations; and

WHEREAS, the City is obligated under its agreements with the Federal Aviation Administration (hereinafter referred to as the "FAA") to plan, manage, and maintain the operational areas of the Airport; and

WHEREAS, the designation of the Karner Blue as an endangered species affords the species protection and initiates a program for recovery; and

WHEREAS, the Service is the agency authorized under the Federal Endangered Species Act of 1973 (16 U.S.C. 1531-43) as amended to administer protective regulations and programs for threatened and endangered species; and

WHEREAS, the Department is the agency with jurisdiction pursuant to RSA 212-A over State endangered and threatened wildlife species charged with the protection, conservation, and enhancement of said species; and

WHEREAS, DRED is the agency with jurisdiction pursuant to RSA 217-A over State endangered and threatened plant species charged with the protection, conservation, and enhancement of said species; and

WHEREAS, the City, the Service, Department, DRED, and the NHARNG all are committed to preserving the wildlife and plant populations located on, about, and indigenous to said Concord Pine Barrens (Airport Site), more particularly described as Exhibit A, attached hereto and made a part hereof; and

WHEREAS, the NHARNG has proposed to assist the Service, Department, and DRED with the actions outlined in the "Final Environmental Assessment for Replacement of the New Hampshire Army National Guard Army Aviation Support Facility, Concord, New Hampshire" (to be published); and

WHEREAS, the City, NHDOT, and FAA approved the March 1996 Airport Master Plan and the Airport Layout Plan on April 15, 1997, that set forth existing and future projected uses and development, and which incorporated the Airport Conservation Management Agreement that preceded and is replaced by this Agreement;

NOW, THEREFORE, the parties mutually covenant and agree as follows:

1. DESCRIPTION OF PREMISES

The premises subject to this Development and Conservation Management Agreement (hereinafter referred to as "Agreement") are described in Exhibit A as Conservation Zones 1, 2, 3, and 4 and Development Zones 1, 2, 3, 4, 5, 6, 7, and 8. The areas subject to the Agreement are described as follows:

a. Conservation Management Zones

The Service, Department, DRED and NHARNG may proceed within these zones to undertake management actions in accordance with Sections 4 and 5 herein. The City will not undertake any development activities in the conservation zones without written consent of the Service, Department, and DRED.

(i) Conservation Zone 1 (CZ 1)

The area directly northeast of Discontinued Runway 3/21, as depicted in Exhibit A. Said zone shall be in the airport side of the airport fence and shall continue along the easterly edge of the airport fence, 120 feet wide, southerly to connect it with CZ 3.

(ii) Conservation Zone 2 (CZ 2)

The area directly west of Discontinued Runway 3/21 and north of Active Runway 12/30 as depicted in Exhibit A.

(iii) Conservation Zone 3 (CZ 3)

The area directly east of Discontinued Runway 3/21 and north of Active Runway 12/30 as depicted in Exhibit A. Said zone shall be in the airport side of the airport fence.

(iv) Conservation Zone 4 (CZ 4)

The area of the airport south and east of Runway 12/30, west of Runway 17/35 to the Building Restriction Line and east of Runway 17/35 to the Soucook River and DZ 5, East Development Zone as depicted in Exhibit A.

b. Development Zones

While the City may voluntarily conserve threatened and endangered species and habitat within these zones, the City or its designee may proceed to develop in these zones for all activities specified in the March 1996 Airport Master Plan and Airport Layout Plan approved April 15, 1997, except as specified in this Agreement, without further consultation with the Service, Department, or DRED under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the New Hampshire Endangered Species Conservation Act (RSA 212-A), or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, Biological Opinion and 2) other federal and state statutes. As the Airport Layout Plan is amended, such amendments shall be consistent with this Agreement. Neither the

Service, Department, nor DRED shall propagate or reintroduce State or Federal Threatened or Endangered species or habitat, or undertake habitat management, in the development zones except as specified in 4.a.ii, without the written consent of the City. Future amendments to the Master Plan and Airport Layout Plan shall comply with the Agreement.

(i) Development Zone 1 (DZ 1)

The area west of Discontinued Runway 3/21, north of Active Runway 12/30 and south of Regional Drive as depicted in Exhibit A.

(ii) Development Zone 2 (DZ 2)

The area directly north of CZ 1 and directly south of Regional Drive Extension as depicted in Exhibit A.

(iii) Development Zone 3 (DZ 3)

The area directly west of Discontinued Runway 3/21 as depicted in Exhibit A.

(iv) Development Zone 4 (DZ 4)

The area directly east of Discontinued Runway 3/21 as depicted in Exhibit A.

(v) Development Zone 5 (DZ 5) East Development Zone

The area in the East Development Zone directly east of Runway 12/30 as depicted in Exhibit A.

(vi) Development Zone 6 (DZ 6) South Runway Extension Zone

The area south of Runway 17/35 continuing to the eastern, southern, and western boundaries of the airport property as depicted in Exhibit A.

(vii) Development Zone 7 (DZ 7) Regional Drive Extension

The area north of Runway 17/35 to the boundaries of the Airport property including that area necessary to extend Regional Drive from its current western terminus to Airport Road designated in Exhibit A labeled Regional Drive Extension.

(viii) Development Zone 8 (DZ 8)

The area designated in Exhibit A labeled DZ 8 located west of the Building Restriction Line and east of Airport Road.

2. UNDERSTANDING OF COMPENSATION

The signatory agencies agree to accept this Agreement as the City's compensation to offset the loss of species and habitat in the designated Development Zones as illustrated in Exhibit A. Development within the designated Development Zones may proceed without further consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the

New Hampshire Endangered Species Conservation Act (RSA 212-A), and/or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes.

Neither the Service, Department, nor DRED shall propagate or reintroduce State or Federal Threatened or Endangered species or habitat, or undertake habitat management, in the development zones except as specified in 4.a.ii, without the written consent of the City.

3. TERM OF AGREEMENT AND RENEWAL

This Agreement shall have an initial 15-year term which shall automatically continue for one (1) additional fifteen year period unless it is mutually amended or terminated in writing by all signatory agencies. At the conclusion of the second fifteen year term, the Agreement shall automatically continue for four (4) 5-year periods if biological benchmarks laid out in the Conservation Management Plan as specified in Section 6 herein, are met. These benchmarks will be determined by the Service, Department and DRED and will reflect the conservation goals for the preservation, protection, and propagation of federal and state threatened and endangered species and their habitat.

4. USE OF PREMISES

a. Each party may proceed to undertake such activities on the premises as described herein in Section 1 and as follows:

(i) **Conservation Zones**

The Service, Department, DRED, and NHARNG may proceed to ensure the perpetuation of the natural features thereon including, but not limited to, the right to restrict general public access (excepting City, FAA, NHDOT Division of Aeronautics, or NHARNG personnel, or their designees) to sensitive natural areas; remove woodchuck and other foragers; propagate Wild Lupine and nectar species; manage woody vegetation through manual and mechanical clearing and prescribed fire; monitor rare species populations including, but not limited to, Karner Blue Butterflies, Frosted Elfin Butterflies, Persius Duskywing Skippers, and Wild Lupine; and release rare species including, but not limited to, Karner Blue Butterflies.

- a.) CZ 1 The Service, Department, DRED, and NHARNG may proceed in CZ 1 to undertake management actions in accordance with Sections 4 and 5 herein.
- b.) CZ 2 The Service, Department, DRED, and NHARNG may proceed in CZ 2 to undertake management actions in accordance with Sections 4 and 5 herein.
- c.) CZ 3 The Service, Department, DRED and NHARNG may proceed in CZ 3 to undertake management actions in accordance with Sections 4 and 5 herein.
- d.) CZ 4 The Service, Department, DRED and NHARNG may proceed in CZ 4 to undertake management actions in accordance with Sections 4 and 5 herein.

(ii) DZ 6 South Runway Extension Zone -

The Service, Department, and DRED may proceed to ensure the perpetuation of the natural features thereon including, but not limited to: restrict public access (excepting City, FAA, NHDOT Division of Aeronautics, or NHARNG personnel or their designees) to sensitive natural areas; remove woodchuck and other foragers; propagate Wild Lupine and nectar species; manage woody vegetation through manual and mechanical clearing and prescribed fire; monitor rare species populations including, but not limited to, Karner Blue Butterflies, Frosted Elfin Butterflies, Persius Duskywing Skippers, and Wild Lupine; and release rare species including, but not limited to, Karner Blue Butterflies. Such actions may proceed provided the City may proceed with the extension of the runway and taxiway and provided that they do not interfere with maintenance and operational requirements of Airport facilities.

b. The City and/or its designees:

(i) Development Zones -

- a.) DZ 1 The City or their designees may proceed to develop in DZ 1 all activities specified in the March 1996 Airport Master Plan and Airport Layout Plan approved April 15, 1997, except as specified in this Agreement, without further consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the New Hampshire Endangered Species Conservation Act (RSA 212-A), and/or the New Hampshire Native Plant

Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes.

b.) DZ 2 The City or its designees may proceed to develop in DZ 2 all activities specified in the March 1996 Airport Master Plan and Airport Layout Plan approved April 15, 1997, except as specified in this Agreement, without further consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the New Hampshire Endangered Species Conservation Act (RSA 212-A), and/or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes.

c.) DZ 3 The City or its designees may proceed to develop in DZ 3 all activities specified in the March 1996 Airport Master Plan and Airport Layout Plan approved April 15, 1997, except as specified in this Agreement, without further consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the New Hampshire Endangered Species Conservation Act (RSA 212-A), and/or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes.

d.) DZ 4 The City or its designees may proceed to develop in DZ 4 the approved 10 units of t-hangar development without further consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the New Hampshire Endangered Species Conservation Act (RSA 212-A), and/or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes. The City and/or its designees may proceed to develop a 30 foot wide access road with utilities to connect Chenell Drive and DZ 4 as depicted in Exhibit A. The adjacent wild lupine shall be clearly designated and protected during construction. The City agrees to require restrictive construction practices to limit the disturbance of habitat, to the maximum practicable, to the actual footprint of the access road and utilities and connecting stubs.

e.) DZ 5 The City or its designees may proceed to develop in DZ 5 all activities specified in the March 1996 Airport Master Plan and Airport

Layout Plan approved April 15, 1997, except as specified in this Agreement, without further consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the New Hampshire Endangered Species Conservation Act (RSA 212-A), and/or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes.

f.) DZ 6 The City may proceed in DZ 6 with the extension of the runway and taxiway as specified in the March 1996 Airport Master Plan and Airport Layout Plan approved April 15, 1997, and with maintenance and operational requirements of airport facilities without further consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the New Hampshire Endangered Species Conservation Act (RSA 212-A), and/or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes.

g.) DZ 7 The City or its designees may proceed to develop in DZ 7 all activities specified in the March 1996 Airport Master Plan and Airport Layout Plan approved April 15, 1997, in particular the extension of Regional Drive from its western terminus to Airport Road, except as specified in this Agreement, without further consultation under the Endangered Species Act of 1973 (16 U.S.C. 1531-43), the New Hampshire Endangered Species Conservation Act (RSA 212-A), and/or the New Hampshire Native Plant Protection Act (RSA 217-A), provided that such development is consistent with 1) the Service's August 18, 2000, formal Biological Opinion and 2) other federal and state statutes.

h.) DZ 8 The City or its designees may proceed to develop in DZ 8 all activities specified in the March 1996 Airport Master Plan and Airport Layout Plan approved April 15, 1997, and as specified in future City Master Plans, Airport Master Plans, and Airport Layout Plans, except as specified in this Agreement, with the concurrence of the Service, Department, and DRED.

(ii) Conservation Zones -

In accordance with the Conservation Management Plan, the City shall manage vegetation in these zones in cooperation with the Service, Department, and DRED to ensure the perpetuation of the natural features thereon. Management guidelines will be included in the Conservation Management Plan. Cooperative management activities can be conducted upon execution of this Agreement.

The City shall consult and cooperate with the Service, Department, and DRED on maintenance and operational activities (including, but not limited to, drainage maintenance and paving activities) to minimize the deleterious effects of these activities on the natural features thereon.

a.) CZ 1 and CZ 3

The City may proceed to construct a 30-foot-wide access road with utilities between CZ 1 and CZ 3 to connect Chenell Drive and DZ 4 as depicted in Exhibit A without further consultation with the Service, Department, or DRED. The City agrees to require restrictive construction practices to limit the disturbance of habitat, to the maximum practicable, to the actual footprint of the access road and utilities and connecting stubs.

b.) CZ 4

The City may proceed to construct a 35-foot-wide parallel taxiway with connecting stubs south of Runway 12/30 in CZ 4, as generally depicted in Exhibit A, with the concurrence of the Service, Department, or DRED as to the specific location. The City agrees to require restrictive construction practices to limit the disturbance of habitat, to the maximum practicable, to the actual footprint of the parallel taxiway and connecting stubs.

5. ACCESS AND MANAGEMENT

The City grants to employees, contractors, and cooperators of the Service, Department, DRED, and the NHARNG the right of unencumbered access to the Airport for the purposes of formulating the conservation management plan as specified in Section 6 herein and carrying out the conservation management practices specified therein. The Airport Manager or his designee shall be notified prior to said employees, contractors, and cooperators entering the airport property. Such access shall not interfere with the safe, efficient operations of the airport facilities and shall follow the Airport Safety Plan attached as Exhibit B.

6. CONSERVATION MANAGEMENT PLAN

The NHARNG, in coordination with the Service, Department, and DRED, will prepare and implement a Conservation Management Plan that will be based on the elements of the mitigation plan in the "*Final Environmental Assessment for Replacement of the New Hampshire Army National Guard Army Aviation Support Facility, Concord, New Hampshire*" (to be published) to guide the necessary long-term monitoring and management of State and Federal threatened and endangered species and habitat in the designated Conservation Zones in Exhibit A.

The Conservation Management Plan shall take into account the maintenance and operational requirements of airport facilities and the City's plans for future airport and area expansion and development. Conservation measures can be conducted upon execution of this Agreement.

7. WAIVER OF CLAIMS

The Service, Department, DRED and their agents agree to observe and conform to all safety procedures required by the City, the Fixed Base Operator (FBO), and the FAA while conducting activities within the Conservation Zones.

8. LIABILITY

There is no assumption of liability by any party signatory to this Agreement.

9. TERMINATION

This Agreement shall be terminated without penalty by mutual consent of all signatory parties if the Service, Department, and DRED determine that certain significant natural features on the property have ceased to exist or the role of the Service, Department, and DRED, as biological managers, is no longer possible or appropriate. In such event, the Service, Department, and DRED shall provide written notice of intent to terminate to all signatory parties at least sixty (60) days prior to the date of intended termination.

10. NOTICE

All notices, reports, statements, requests, or authorizations required to be given hereunder shall be sufficiently given by first class mail addressed to: the City Manager, City of

Concord, 41 Green Street, Concord, New Hampshire 03301, the U. S. Fish and Wildlife Service, 22 Bridge Street Concord, New Hampshire 03301, the New Hampshire Fish and Game Department, 2 Hazen Drive, Concord, New Hampshire 03302, the NH Department of Resources & Economic Development, P.O. Box 1856, Concord, New Hampshire 03302-1856, the NH Army National Guard, State Military Reservation, 4 Pembroke Road, Concord, New Hampshire 03301-5652, the NH Department of Transportation, Division of Aeronautics, 65 Airport Road, Concord, New Hampshire 03301, and the Federal Aviation Administration, 12 New England Executive Park, Burlington, Massachusetts 01803. The notice shall be effective upon receipt.

11. BINDING EFFECT

All of the terms, conditions, and covenants to be observed and performed by the parties hereto shall be applicable to their several successors and assigns, as the case may be. This Agreement is entered into with concurrence of all signatory agencies and remains in effect until the Agreement is mutually amended or terminated by all signatory agencies, according to the terms as specified in Section 3.

12. MEETINGS

Representatives of the Service, Department, DRED, the City, and the NHARNG and appropriate contractor and cooperators shall meet annually to review existing conservation management practices at the airport and any conflicts between these practices and airport operations, and discuss management strategies which would facilitate the recovery of the protected species at the airport in a manner that is compatible with safe, efficient airport operations.

13. HAZARDOUS MATERIALS

The City shall indemnify the other parties to this Agreement from any and all liabilities incurred as a result of the presence at the airport of any hazardous materials or oil, including any materials which are toxic, explosive, corrosive, flammable, or otherwise hazardous to health.

14. CHOICE OF LAW

This Agreement is being executed and is intended to be performed in the State of New Hampshire and shall be governed in all respects by the laws of that State.

15. REQUIRED CLAUSES

- a. This Agreement and all obligations of the Service, Department, and DRED hereunder are subject to availability of funds. Nothing contained herein shall be construed as binding the Service, Department, DRED, or the NHARNG to expend in any fiscal year any sum in excess of appropriation made by Congress or administratively allocated for the purpose of this Agreement for the fiscal year, or to involve the Service, Department, or DRED in any contract or other obligation for the further expenditure of money in excess of such appropriations or allocations.
- b. This Agreement will allow the City to continue to maintain, operate and plan the Airport in accordance and compliance with all FAA Grant Sponsor Assurances in particular B.1, 5.a. and b., 19.a., 20, 28 and 29 attached herein as Exhibit C and FAR Part 77.
- c. No member of Congress or resident Commissioner shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.
- d. During the performance of this Agreement, the parties agree to abide by the terms of Executive Order 11246 on nondiscrimination and will not discriminate against any person because of race, color, religion, sex, or national origin. The parties will take affirmative action to ensure that applicants are employed without regard to their race, color, religion, sex, or national origin.
- e. Notwithstanding the foregoing, any performance required of the NHARNG under this Agreement shall be contingent upon other and further agreement between NHARNG and the City in accordance with the parties' Memorandum of Understanding dated November 20, 1996, and which, at a minimum, shall include:
 1. Airport joint use agreement permitting construction of a new Army Aviation Support Facility on city property.
 2. Extension of Regional Drive in accordance with the City Master Plan.
 3. Conveyance of mutual long-term lease agreements, rights-of-way, or easements which shall conform to the City Master Plan (adopted December 15, 1993) with respect to the extension of Regional Drive.

IN WITNESS WHEREOF, the parties to this Development and Conservation Management Agreement have subscribed their names hereto on the day and year above first written.

Witness:

CITY OF CONCORD

Jan A. Tesser

[Signature]

Witness:

NH FISH & GAME DEPARTMENT

Angela L. Croteau

Wayne E. Vetter

Witness:

U. S. FISH AND WILDLIFE SERVICE

Florence L. Dube

[Signature]

Witness:

NH DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT

S. AH

George T. Bald

Witness:

NH ARMY NATIONAL GUARD

Judith A. Cleary

John E. Blair

Witness:

NH DEPARTMENT OF TRANSPORTATION,
DIVISION OF AERONAUTICS

Samuel J. Conway

Carol A. Murray

