BTR

BATON ROUGE
METROPOLITAN AIRPORT

Baton Rouge Metropolitan Airport

Master Plan Update

Volume I:
Master Plan Report

April 2018

Kutchins & Groh

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BATON ROUGE
METROPOLITAN AIRPORT

Baton Rouge Metropolitan Airport
Master Plan Update

Chapter One
Introduction

Kutchins & Groh

CHAPTER ONE
Introduction

The purpose of this updated Airport Master Plan is to provide guidance for the continued improvement of the Baton Rouge Metropolitan Airport (BTR) over a 20-year planning horizon. This chapter provides the background and summary of the processes and findings of the Master Plan Update.

In accordance with Federal Aviation Administration (FAA) Advisory Circular (AC) 150-5070-6B, *Airport Master Plans,* the information, findings, and recommendations contained in this report, as developed by Kutchins & Groh, LLC, represent an update of the *2007 Baton Rouge Metropolitan Airport Master Plan*.

Since that Master Plan was completed, major changes to the Airport and the aviation industry have occurred. These include the mergers of multiple air carriers, the reduction of frequency of flights, and the Great Recession. More important than these events is the completion of most of the recommended development from the 2007 plan – including extension of runway 4L/22R, rehabilitation and improvements to the airfield paving system throughout the facility, expansion of the Airport Security Checkpoint, and expansion of the Atrium and Terminal to better accommodate passengers and customers of the Capital Region. To address these changes, the Sponsor elected to update the master plan for the Airport.

1.1 AIRPORT SETTING

The Airport is owned and operated by the City of Baton Rouge, Parish of East Baton Rouge, and the Baton Rouge Metropolitan Commission, though it does not receive money from the City-Parish general fund and is therefore self-supporting, BTR operates as an enterprise fund and generates its own revenue.

BTR is classified in the National Plan of Integrated Airport Systems (NPIAS) as a primary airport, serving origin/destination passengers (those beginning or ending their flight in Baton Rouge). Currently, commercial service is provided by regional air carriers under the flags of American Airlines, Delta Airlines, and United Airlines, with direct flights to Dallas/Fort Worth,

Atlanta, Houston and Charlotte. The Airport is the nation's 134th busiest[1] in terms of passengers and the 110th busiest[2] in terms of total aircraft operations

BTR is located approximately five miles north of Downtown Baton Rouge in the northwest portion of East Baton Rouge Parish (see ***Exhibit 1-1, Airport Location Map***). The Airport is easily accessed from Interstate 110 via Veterans Memorial Boulevard and Captain Ryan Drive.

As the capital of Louisiana, the City of Baton Rouge had a population of 229,493 in 2010, according to the U.S. Census.

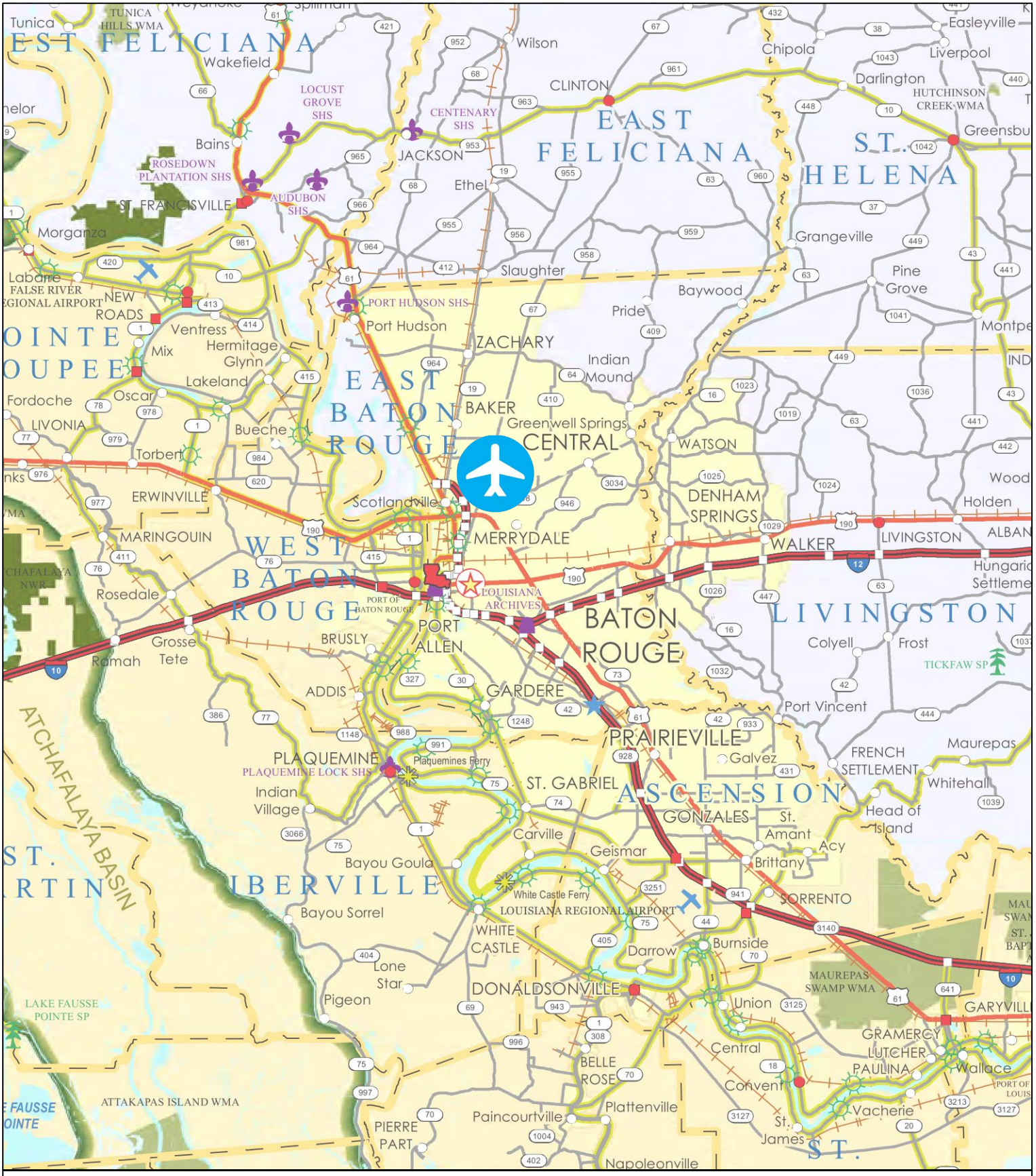
The Airport is home to three Fixed Base Operators (FBO): BTR Jet Center, Executive Aviation, and Landmark Aviation. An FBO is defined as a commercial business granted the right by an airport to operate on site to provide aeronautical services such as hangar space, fueling, tie-downs and parking, aircraft rental, aircraft maintenance, and flight instruction. BTR Jet Center provides tie-down services, limited hangar space, fuel, catering, pilot/passenger lounge, and on-site rental cars. Executive Aviation provides fuel, maintenance, charters, car rentals, limousine service and a lounge/lobby. Landmark Aviation provides maintenance services, fuel, concierge services, on-site rental cars and catering.

The overall area of the Airport property is approximately 1,250 acres, which includes approximately 700 acres dedicated to aviation operations and uses, located on land owned by the Baton Rouge Metropolitan Airport, including some parcels with runway access. Most infrastructure is already in place, including roads, electrical, natural gas, water and sewer. Full-time police services are provided by the Airport District and other City services are readily available. The site is ideally situated for a wide range of both aviation and non-aviation businesses.

1.2 BACKGROUND AND HISTORY

The Airport began operations during World War II as a military base for the United States Army Air Corps. It was known as Harding Field after construction was completed in 1941. In 1948, following the end of the World War II, the facility was converted to civilian use under the U.S. Surplus Property Act of 1944, and was renamed Ryan Field for Captain William Joseph Ryan in 1954. In 1969, the Airport Authority was created as the governing body of the airport. A twelve member Board of Commissioners is responsible for the operation and administration of the airport. In 1981, the facility was officially renamed as Baton Rouge Metropolitan Airport.

[1] Source: FAA CY 2014 Aircraft Certification Audit Information System (ACAIS)
[2] Source: FAA FY 2015 Air Traffic Activity System (ATAS)



Airport Location Map

BTR
BATON ROUGE METROPOLITAN AIRPORT

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GRAPHIC SCALE IN FEET

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EXHIBIT 1-1

BTR is a commercial service airport serving the air travel needs of residents in Southeastern Louisiana. As far as scheduled service is concerned, BTR is considered an O&D Airport (Origination and Destination), meaning that passengers start and/or end their journeys in Baton Rouge.

Currently, commercial service is provided by regional air carriers under the flags of American Airlines, Delta Airlines, and United Airlines, with direct flights to Atlanta, Charlotte, Dallas/Fort Worth, and Houston. A new state-of-the-art terminal building was officially opened to the public in the spring of 2014. For customer convenience, the terminal houses seven passenger gates, gift and news/food and beverage concessions, business center and related passenger conveniences. The 2007 Master Plan for BTR was prepared for the long-term planning period through 2025. Major recommendations of that plan included:

- Extension of Runway 4L-22R and its parallel taxiways to 8,000 feet;
- Realignment and extension of multiple taxiways to meet current standards and to improve airfield efficiency;
- Expansion of the Passenger Terminal Security Lobby and Ticketing facilities to accommodate forecast demand;
- Expansion and relocation of parking facilities (public and employee) to accommodate forecast demand;
- Addition of air cargo facilities to accommodate forecast activity;
- Addition of General Aviation facilities to accommodate forecast demand; and
- Relocation of airfield maintenance facilities and State aviation facilities to accommodate the expansion of the cargo area.

This document is being prepared as an update to the 2007 Master Plan. Much of the development proposed in the last master plan has been implemented and this update will identify development needs for the future planning horizon, such as:

- Existing conditions;
- Phased development; and
- Aviation forecasts for the five, ten and 20-year planning horizons.

Although the Master Plan Update will focus on the Airport and its environs, it will also take into account its relationship with the surrounding community. The overall planning goal will be the continued development of an aviation facility that can accommodate future demand while being mindful of constraints that may be imposed by the environment surrounding the airport proper. Four basic elements will be examined in the document:

- Airside facilities (runways, taxiways & features directly related to aviation activities);
- Landside facilities (activities on Airport property but not directly related to aviation);
- The relationship between the Airport & the surrounding community; and
- The Airport's environs.

1.3 INDUSTRY, STATE AND LOCAL

The Baton Rouge Metropolitan Statistical Area (MSA) is comprised of 9 parishes (Ascension, East Baton Rouge, East Feliciana, Iberville, Livingstone, Pointe Coupee, St. Helena, West Baton Rouge, and West Feliciana). This MSA includes 46 cities, towns and census-designated places, of which Baton Rouge is considered the primary. There are approximately 799,000 residents living in the MSA, 229,000 of whom reside within the limits of the City of Baton Rouge. Based on the available information from the Louisiana State Census Data Center, the population in the Baton Rouge MSA increased by 0.6%[3] from 2013 to 2014.

The Baton Rouge MSA has enjoyed a relatively constant economy over the last few years, with an unemployment rate of approximately 6.1% (as of April 2015, per the Bureau of Labor Statistics). For purposes of comparison, the national 2015 unemployment rate was 5.0% and the State of Louisiana 2015 unemployment rate was 6.6%. The leading industries in the MSA are manufacturing and petrochemical production. The local economy is projected to remain stable for the foreseeable future.

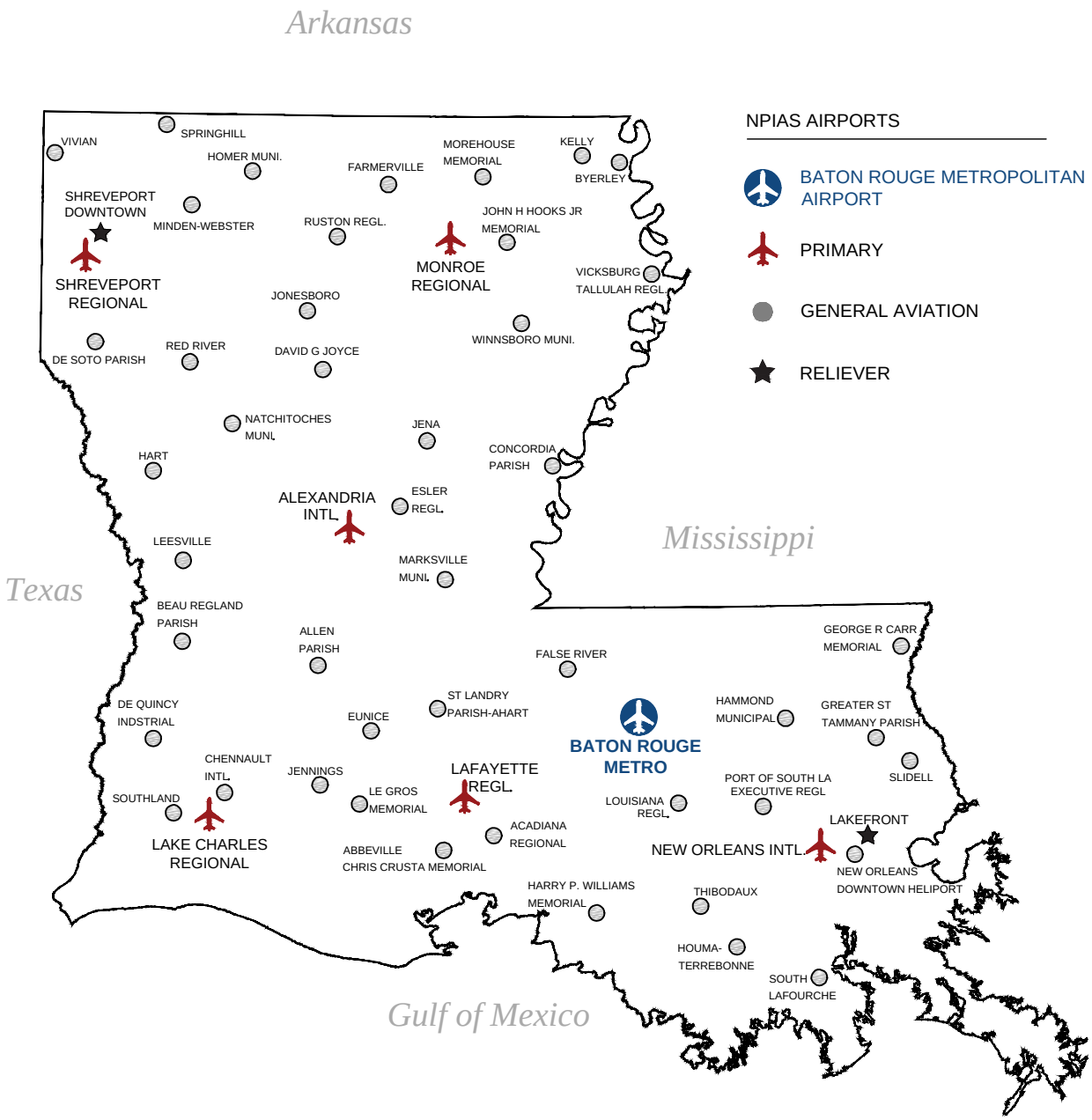
For geographical reference, BTR is approximately: 95 miles northeast of New Orleans, Louisiana; 120 miles west of Picayune, Mississippi; 60 east of Lafayette, Louisiana; and 35 miles south of the Mississippi State line (see **Exhibit 1-2, Airport Vicinity Map**).

1.4 MASTER PLAN OBJECTIVES

The primary purpose of the Master Plan is to serve as a general guide to the orderly, timely, and logical development of BTR so that it can continue to serve the aviation needs and support the economic development of the region for the next 20 years. Major objectives of the Master Plan include:

- Establishment of a flexible facility development plan that will accommodate reasonably expected changes in the aviation market over the 20-year planning horizon;

[3] Source: 2014 Louisiana State Census Data Center



Airport Vicinity Map

BTR
BATON ROUGE METROPOLITAN AIRPORT

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- Development of a reasonable set of planning activity levels (i.e., levels of enplanements and aircraft operations) suitable for guiding the development of the Master Plan;
- Preparation of a plan that can be accomplished in an environmentally sensitive and responsible manner;
- Maximization of opportunities for BTR to serve as a catalyst for economic development in the region;
- Consensus-building with key stakeholders regarding major development recommendations to develop the foundation for funding agreements and environmental approvals for key projects; and
- Development of a financial plan that is sound and achievable given the Airport's resources, demands, and needs.

1.5 COORDINATION AND PUBLIC INVOLVEMENT

A Project Working Group was also established at the onset of the planning process to serve as the core management team for the planning process, with the responsibility of directing the preparation of the Master Plan. Its members included the Airport Director, his key staff, and the management group of the planning consultant, Kutchins & Groh, LLC. This team met regularly throughout the project term to discuss planning issues, present work products, solicit comments, refine the planning process and prepare for meetings with the advisory groups, the community and the public.

To assist with agency coordination and public involvement throughout the project, a Community Advisory Committee (CAC) was established. As an integral part of the Master Plan, the CAC helped mold the development and growth of the planning process. The group met at key points to review progress, discuss planning concerns, and shape the planning process. In addition, a Technical Advisory Committee (TAC) was established to review the planning process, discuss more detailed issues, and serve as a sounding board for proposed development concepts. The TAC also assisted in the selection of the ultimate development concept that resulted in the recommendations and proposed development of this Master Plan. Appendix I of this document includes copies of the records of this public involvement process.

1.6 DOCUMENT ORGANIZATION

The remainder of this Master Plan is organized as follows:

- Chapter II: Inventory and Existing Conditions
- Chapter III: Aviation Demand Forecasts
- Chapter IV: Demand Capacity Analysis and Facility Requirements
- Chapter V: Development Alternatives
- Chapter VI: Preferred Development Plan
- Chapter VII: Environmental Overview
- Chapter VIII: Implementation and Financial Plan
- Chapter IX: Airport Layout Plan

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A. List of Current Tenants
B. Airside Pavement Inventory Report
C. Landside Pavement Inventory Report
D. Building Condition Survey
E. Forecast of Aviation Activity
F. Recommended Development Plan Cost Estimates
G. Airport Layout Plan
H. Environmental Coordination
I. Public Involvement Process

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Baton Rouge Metropolitan Airport
Master Plan Update

Chapter Two
Inventory and Existing Conditions

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CHAPTER TWO
Inventory and Existing Conditions

An early step in the Airport Master Plan process is the inventory of existing conditions and critical environs. This inventory information provides the basis for evaluating existing facility conditions and subsequently determining future needs.

This chapter is dedicated to existing conditions at the Airport and an inventory of existing facilities. Subsequent chapters will address: aviation forecasts, safety and operational requirements, land use compatibility and recommendations for future development of the Airport and the surrounding property.

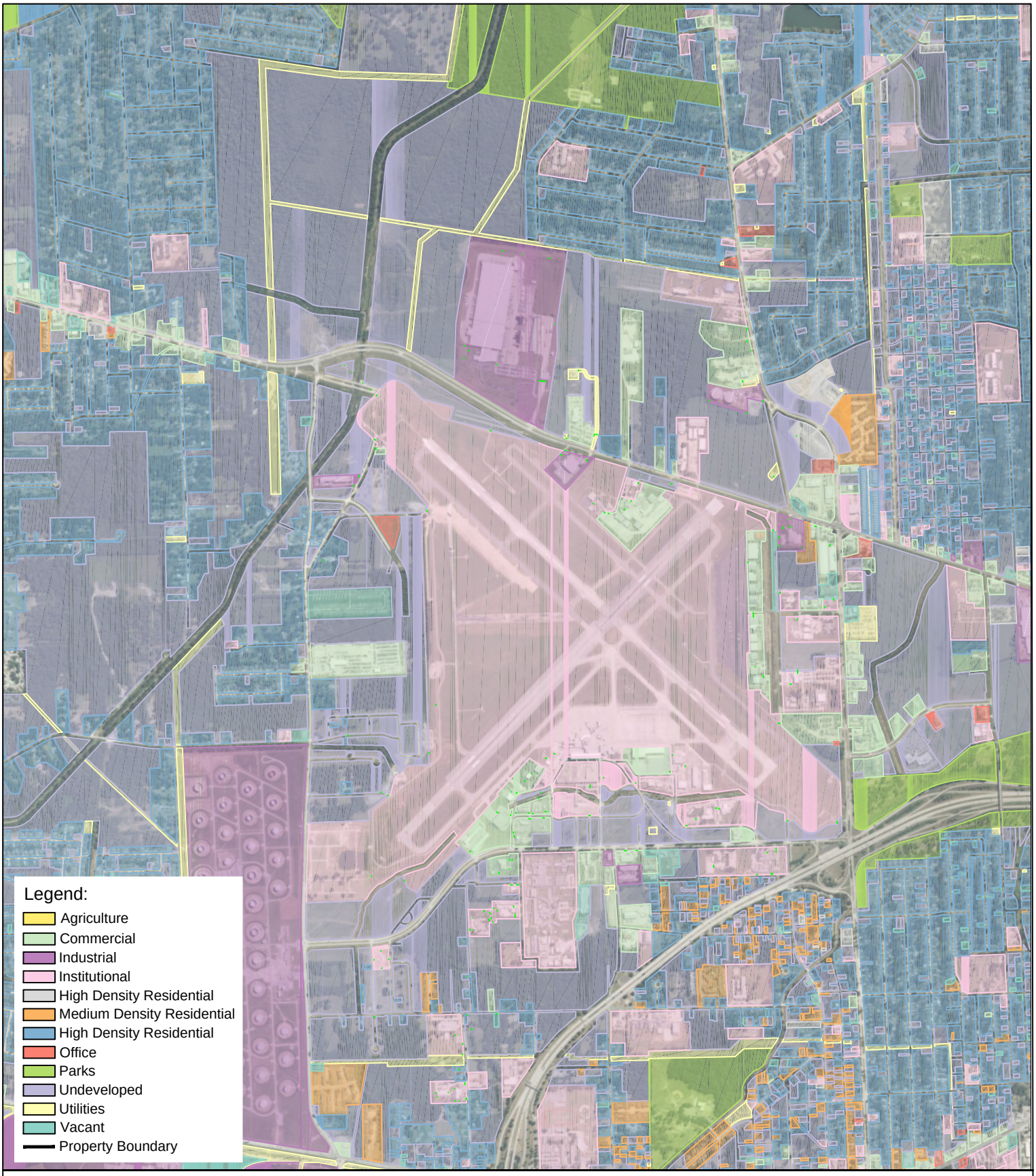
2.1 AIRPORT SETTING

Baton Rouge Metropolitan Airport (BTR) is the principal commercial airport in East Baton Rouge Parish offering scheduled passenger service. Other airports in the region that offer commercial service are: New Orleans International (80 miles to the southeast); Lafayette Regional (65 miles to the southwest); Alexandria International (120 miles to the northwest); and Jackson-Evers International (170 miles to the northeast in Mississippi).

The Airport is owned and operated by City of Baton Rouge and Parish of East Baton Rouge. It is located approximately five miles north of Downtown Baton Rouge in the northwest portion of East Baton Rouge Parish. Vehicular access comes chiefly from Interstate 110 via Veterans Memorial Boulevard and Captain Ryan Drive.

2.2 LAND USE & ZONING

An inventory of existing land uses and zoning is important for airport planning in order to establish the framework for maintaining land use compatibility while determining the best course of action for future development. This section, and ***Exhibit 2-1, Land Use***, document the existing land uses and zoning classification of the Airport and the surrounding community.



Land Use

BTR
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GRAPHIC SCALE IN FEET

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EXHIBIT 2-1

2.2.1 EXISTING LAND USE

The Airport is bounded along the north by industrial and residential areas. Commercial, residential and park lands lie to the south. Along the eastern boundary industrial, commercial and residential areas are found, while residential and institutional areas lie to the west. There are no incompatible land uses as of the publication of the most recent noise exposure map.

2.2.2 EXISTING ZONING

East Baton Rouge Parish is currently working towards adopting an Airport Zoning District to clarify land uses allowed in and around the Airport, for the purpose of promoting the public health, safety, and general welfare of the community. The underlying zoning classification for the majority of the Airport is presently zoned Planned Unit Development (PUD).

2.3 METEOROLOGICAL CONDITIONS

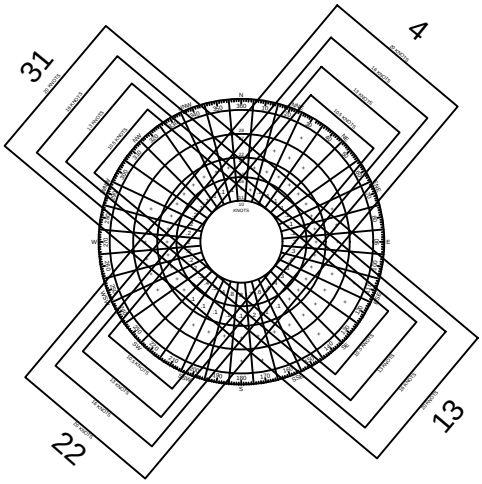
The National Oceanic and Atmospheric Administration (NOAA) collects and maintains climate information for all locales within the United States. According to the NOAA website, Louisiana's climate is characterized by short mild winters and long, hot, and generally humid summers. January temperatures generally average 52 degrees Fahrenheit in East Baton Rouge Parish. Temperatures below zero have been recorded, but prolonged periods of cold weather are rare. July and August averages are in the lower 90s. Daytime highs can exceed 95 degrees, and the constant, relatively high humidity tends to result in even higher heat index numbers. Nighttime lows are generally in the high 70s during summer. Overall, the daily mean temperature of the hottest months, July and August, is approximately 83 degrees Fahrenheit.

Both horizontal ceiling and vertical visibility are measured to determine whether aircraft flights are controlled by visual flight rules (VFR) or instrument (IFR) flight rules. When the cloud ceiling is less than 1,000 feet or visibility is less than three miles, pilots generally fly according to IFR. The basic difference between the two is the minimum visibility required for flight operations. During the period from 2006 to 2015, the Airport operated under IFR conditions approximately 15.3%[1] of the time (see ***Exhibit 2-2, Airport Windrose Data***).

[1] National Climatic Data Center (NCDC)

LOCATION
BATON ROUGE METROPOLITAN AIRPORT RYAN FIELD
BATON ROUGE, LA

WIND DATA PERIOD	SOURCE	STATION NUMBER
2006 - 2015	NATIONAL CLIMATIC DATA CENTER	722320



WIND COVERAGE - IFR CONDITIONS
CEILING - LESS THAN 1,000 FT.
VISIBILITY- LESS THAN 3 MILE

RUNWAY 13/31

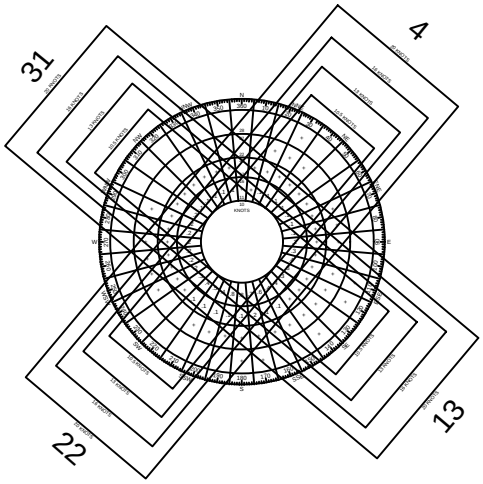
10.5 KNOTS	13 KNOTS
95.9%	97.6%
16 KNOTS	20 KNOTS
98.9%	99.6%

RUNWAY 4/22

10.5 KNOTS	13 KNOTS
94.7%	97.0%
16 KNOTS	20 KNOTS
99.1%	99.7%

TOTAL - ALL RUNWAYS

10.5 KNOTS	13 KNOTS
99.2%	99.7%
16 KNOTS	20 KNOTS
99.9%	99.9%



WIND COVERAGE - VFR CONDITIONS
CEILING - GREATER THAN 1,000 FT.
VISIBILITY- GREATER THAN 3 MILES

RUNWAY 13/31

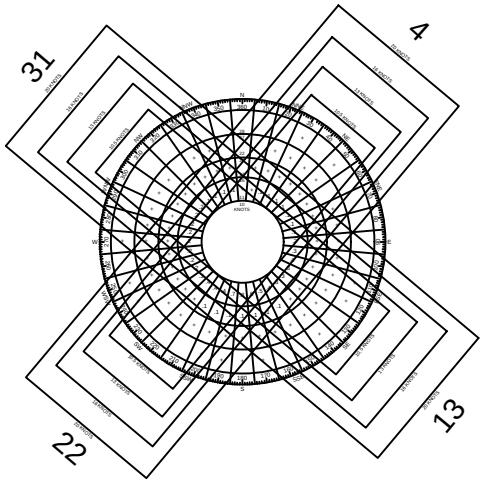
10.5 KNOTS	13 KNOTS
95.5%	97.7%
16 KNOTS	20 KNOTS
99.5%	99.9%

RUNWAY 4/22

10.5 KNOTS	13 KNOTS
95.4%	97.7%
16 KNOTS	20 KNOTS
99.6%	99.9%

TOTAL - ALL RUNWAYS

10.5 KNOTS	13 KNOTS
99.4%	99.9%
16 KNOTS	20 KNOTS
99.9%	100.0%



WIND COVERAGE - ALL WEATHER

RUNWAY 13/31

10.5 KNOTS	13 KNOTS
95.6%	97.7%
16 KNOTS	20 KNOTS
99.4%	99.9%

RUNWAY 4/22

10.5 KNOTS	13 KNOTS
95.3%	97.6%
16 KNOTS	20 KNOTS
99.5%	99.9%

TOTAL - ALL RUNWAYS

10.5 KNOTS	13 KNOTS
99.3%	99.8%
16 KNOTS	20 KNOTS
99.9%	99.9%

Airport Windrose Data

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GRAPHIC SCALE IN FEET

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2.4 AIRSPACE AND AIRPORT TRAFFIC CONTROL FACILITIES

Updates to the BTR Master Plan must take into account the ability of the local airspace to provide for anticipated demand. Additionally, consideration must be given to potential changes in Airport facilities and the effects such changes may have on airspace and on the procedures that govern the direction and operation of aircraft within the area. Therefore, a brief overview of airspace surrounding BTR is necessary. This overview includes a description of FAA facilities and operations that control the airspace above and around the Airport.

In 1993, the FAA reclassified airspace in the U.S. to bring the nation's airports under similar airspace standards that are promoted worldwide by the International Civil Aviation Organization (ICAO). As a result, airspace is now divided into six types and categorized by the letter designations of A, B, C, D, E, and G.

These airspace categories are charted throughout the U.S. and allow pilots to determine their operational requirements within them. Operational requirements include such things as entry procedures, minimum pilot qualifications, radio communications, weather minima, and aircraft separation.

2.4.1 AIRSPACE CLASSIFICATION

Two airspace classifications apply at BTR (Classes C and E). The Airport Traffic Control Tower (ATCT) manages aircraft traffic flow at BTR both in the air and on the ground. The FAA staffs the tower at BTR during the hours of 5:00 a.m. to 12:00 p.m., seven days a week, due to the level of activity the Airport sees at those times. While the ATCT is not operational 24 hours per day, the vast majority of airports in the U.S. do not have an onsite, active control tower.

While the ATCT is in operation at BTR, the airspace surrounding the Airport becomes Class C airspace. Class C airspace consists of a surface area with a five nautical mile radius, an outer circle with a ten nautical mile radius that extends from 1,200 feet to 4,000 feet above the airport elevation, and an outer area.

While Class C airspace is in effect at BTR, an aircraft must establish two-way radio communications with the ATCT facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while within the airspace. The ATCT becomes responsible for sequencing, aircraft separation, and clearance to take off and land at the airport. Class C is a very common airspace found at towered airports such as BTR.

During the hours in which the ATCT is closed, the airspace around the Airport, beginning at 700 feet above ground level (AGL), is considered Class E. Class E airspace is the predominate airspace in the surrounding region. Typically, away from an airport, Class E will begin at 1,200 feet AGL; however, at airports such as BTR, Class E airspace is lowered to 700 feet AGL to allow air traffic control services to be available to aircraft during instrument approach procedures into the airport and is often called the transition area.

Outside a radius of approximately ten nautical miles from the Airport, the Class E airspace is lifted to 1,200 feet AGL. Extensions of the 700-foot floor are found to the southwest and northeast of the Airport, also known as transition areas, to allow air traffic control services at a lower altitude along the common paths of the Airport's instrument approach procedures and to help traffic transition to or from the terminal or enroute environment.

Below the floor of the Class E airspace is Class G airspace, which is often referred to as uncontrolled airspace. Most Class G airspace terminates at the base of Class E airspace at 700 or 1,200 feet AGL. Class G airspace is essentially uncontrolled by air traffic control; however, even though ATCT does not have responsibility for or authority over aircraft, most of the regulations affecting pilots and aircraft still apply.

2.4.2 AIRPORT TRAFFIC CONTROL TOWER (ATCT)

BTR has an Airport Traffic Control Tower (ATCT), owned and occupied by the FAA. It is an Instrument Flight Rules (IFR) radar facility. The ATCT is sited on a 300-foot by 300-foot lot, and it lies to the south of the South Ramp. The facility was commissioned in 1981, and it includes a 59-space employee parking lot. Current hours of operation are from 5:00 a.m. to 12:00 p.m.

The building size is 5,320 square feet. The tower height is 94’-6” to the top of the parapet. The cab area totals 484 square feet.

2.5 AIRFIELD FACILITIES

The primary airfield facilities include runways, taxiways, apron areas, and associated navigational aids (NAVAIDs). This section also discusses Federal Aviation Regulations (FAR) Part 77 imaginary surfaces, obstructions, and airfield critical areas such as Runway Safety Areas (RSA) and Runway Protection Zones (RPZ).

The FAA classifies airports as a part of the National Transportation System (NTS). This classification is used to identify the individual role of an airport within the larger national system

of airports and allows the FAA a mechanism to assess the specific needs of the facility relative to other airports of similar demand and utilization. This applies to funding allocation, safety requirements, and passenger handling standards.

When planning new facilities on an airport or improvements to an existing airport the FAA requires the selection of one or more "design aircraft". As stated in Advisory Circular (AC) 150/5300-13A, Airport Design, design aircraft for the purposes of airport geometric design is a composite aircraft representing a collection of aircraft classified by three parameters: Aircraft Approach Category (AAC), Airplane Design Group (ADG) and Taxiway Design Group (TDG). These parameters, represent the aircraft that are intended to be accommodated by the airport. Since any operation an aircraft that exceeds design criteria of the airport may result in either an unsafe operation or a lesser safety margin unless Air Traffic Control (ATC) Standard Operating Procedures (SOPs) are in place for those operations, the AC recommends consideration be given to the safe operation of any aircraft likely to use the airport.

2.5.1 RUNWAY DESIGN CODE

The FAA has established several imaginary surfaces to protect aircraft operational areas and keep them free from obstructions. These include the runway safety area (RSA), runway object free area (ROFA), runway obstacle free zone (ROFZ), and runway protection zone (RPZ). In addition, standards for separation of facilities and aircraft have been established. **Table 2-1, Current Runway and Taxiway Design Standards,** outlines the runway design standards currently in place at the Baton Rouge Metropolitan Airport (RDG D-IV), as well as how they compare to the Runway Design Group C-III standards.

Table 2-1, Current Runway and Taxiway Design Standards

		C-III	D-IV	
Runways 4L/22R and 13/31[1]		**Visibility Minimums** Lower than 3/4 Mile		**Difference**
Runway Safety Area	Length beyond departure end (ft.)	1,000	1,000	0
	Length prior to threshold (ft.)	600	600	0
	Width (ft.)	500	500	0
Runway Object Free Area	Length beyond runway end (ft.)	1,000	1,000	0
	Length prior to threshold (ft.)	600	600	0
	Width (ft.)	800	800	0
Runway Obstacle Free Zone	Length (ft.)	200	200	0
	Width (ft.)	400	400	0

Table 2-1, Current Runway and Taxiway Design Standards (cont.)

		C-III	D-IV	
Runways 4L/22R and 13/31[1]		**Visibility Minimums** Lower than 3/4 Mile		**Difference**
Precision Obstacle Free Zone	Length (ft.)	200	200	0
	Width (ft.)	800	800	0
Approach Runway Protection Zone	Length (ft.)	2,500	2,500	0
	Inner Width (ft.)	1,000	1,000	0
	Outer Width (ft.)	1,750	1,750	0
	Acres	78.914	78.914	0
Departure Runway Protection Zone	Length (ft.)	1,700	1,700	0
	Inner Width (ft.)	500	500	0
	Outer Width (ft.)	1,010	1,010	0
	Acres	29.465	29.465	0
Runway Separation	*Runway Centerline to:*			
	Parallel runway centerline (ft.)	700	700	0
	Holding Position (ft.)	250	250	0
	Parallel taxiway/taxilane centerline (ft.)	400	400	0
	Aircraft parking area (ft.)	500	500	0
Taxiways A, B, C, and D[2]		**ADG** III	**ADG** IV	**Difference**
TSA	Taxiway Safety Area	118	171	53
TOFA	Taxiway Object Free Area	186	259	73
Taxilane-OFA	Taxilane Object Free Area	162	225	63
Taxiway Separation	Taxiway Centerline to Parallel Taxiway/Taxilane Centerline	152	215	63
	Taxiway Centerline to Fixed or Movable Object	93	129.5	36.5

[1] Source: FAA Advisory Circular 150/5300-13A, *Airport Design*, Table 3-5, *Runway design standards matrix*

[2] Source: FAA Advisory Circular 150/5300-13A, *Airport Design*, Table 4-1, *Design standards based on Airplane Design Group (ADG)*

When calculating the Runway Design Group for a particular runway or airport, the selected AAC, ADG, and approach visibility minimums are combined to form the RDC. The first component, depicted by a letter, is the AAC and relates to aircraft approach speed (operational characteristics) (see **Table 2-2, Airport Approach Category**). The second component, depicted by a Roman numeral, is the ADG and relates to either the aircraft wingspan or tail height; whichever is most restrictive, of the largest aircraft expected to operate on the runway and taxiways adjacent to the runway (see **Table 2-3, Airplane Design Group**). The third component relates to

the visibility minimums expressed by RVR values in feet of 1200, 1600, 2400, 4000, and 5000 (corresponding to lower than 1/4 mile, lower than 1/2 mile but not lower than 1/4 mile, lower than 3/4 mile but not lower than 1/2 mile, lower than 1 mile but not lower than 3/4 mile, and not lower than 1 mile, respectively) (see **Table 2-4**, **Visibility Minimums**). The third component should read "VIS" for runways designed with visual approach use only. Generally, runway standards are related to aircraft approach speed, aircraft wingspan, and designated or planned approach visibility minimums. Runway to taxiway and taxiway/taxilane to taxiway/taxilane separation standards are related to ADG, TDG, and approach visibility minimums.

Table 2-2: Airport Approach Category (AAC)

AIRCRAFT APPROACH CATEGORY	V_{REF}/APPROACH SPEED
A	Approach Speed less than 91 knots
B	Approach Speed 91 knots or more but less than 121
C	Approach Speed 121 knots or more but less than 141 knots
D	Approach Speed 141 knots or more but less than 166 knots
E	Approach Speed 166 knots or more

Table 2-3: Airplane Design Group (ADG)

GROUP #	TAIL HEIGHT (FT)	WINGSPAN (FT)
I	< 20′	< 49′
II	20′ - < 30′	49′ - < 79′
III	30′ - < 45′	79′ - < 118′
IV	45′ - < 60′	118′ - < 171′
V	60′ - < 66′	171′ - < 214′
VI	66′ - < 80′	214′ - < 262′

Table 2-4: Visibility Minimums

RVR (FT)[1]	INSTRUMENT FLIGHT VISIBILITY CATEGORY (STATUTE MILE)
5000	Not lower than 1 mile
4000	Lower than 1 mile but not lower than ¾ mile
2400	Lower than 3/4 mile but not lower than 1/2 mile
1600	Lower than 1/2 mile but not lower than 1/4 mile
1200	Lower than 1/4 mile

[1] RVR Values are not exact equivalents

Based on the recommendations and guidelines outlined in AC 150/5300-13A, the Runway Design Code (RDC) for the Airport is set at a D-IV. Currently, the airfield facilities meet Runway Design Code (RDC) D-IV criteria—air carrier runways and taxiways can accommodate aircraft with

approach speeds of up to 165 knots and wingspans of up to 171 feet. ARC Design Group IV aircraft include the Boeing 757, Boeing 767, and Airbus A300. Even though the Airport does not currently have any D-IV aircraft based at the Airport, various public and private stakeholders frequently operate D-IV class aircraft at the Airport. By maintaining the current D-IV design criteria, the Airport is ensuring that any aircraft likely to use the airport can do so in a safe and efficient manner.

2.5.2 RUNWAYS

The Airport has three active runways. Defined by compass headings, their nomenclatures are 4L-22R, 13-31 and 4R-22L, (see ***Exhibit 2-3, Existing Airfield Facilities – General Location)***. Runway 4L-22R, the primary runway, is used most frequently for larger aircraft. Runway 13-31 is designated as a crosswind runway and is primarily used when crosswind conditions preclude safe operations from Runway 4L-22R. Runway 4R-22L is used primarily for General Aviation operations.

2.5.2.1 Runway 4L-22R

Runway 4L-22R, the primary runway, measures 7,500 feet in length by 150 feet in width and is constructed of grooved concrete. The runway can accommodate aircraft single-wheel loads up to 120,000 pounds, dual-wheel loads up to 170,000 pounds, dual single-wheel loads in tandem up to 170,000 pounds, and dual tandem wheel loads up to 300,000 pounds.

A visual inspection of the runway pavement condition in May of 2016 reported the pavement in good condition.

Runway 4L is a non-precision runway. It is equipped with a High Intensity Runway Light (HIRL) system. Runway 22R is a precision runway equipped with a Medium-intensity Approach Lighting (MALSR) system with runway alignment indicator lights, Special Authorization (SA) CAT II Instrument Landing System (ILS), and an HIRL.

Runway 4L-22R is served by Taxiways A, B, F, G, H, L and Q. Details regarding each taxiway can be found in Section 2.5.2 of this chapter.

2.5.2.2 Runway 13-31

Runway 13-31 is a crosswind runway measuring 7,004 by 150 feet, constructed entirely of bituminous asphalt. The runway weight bearing capacity ranges from 120,000 to 300,000

pounds continuous aircraft weight, depending on landing gear type. A visual inspection of the surface in May of 2016 showed that the pavement is in good condition.

Runway 13 is a precision runway equipped with MALSR and an HIRL system. Runway 31 is a non-precision runway equipped with a Medium-intensity Approach Lighting System (MALS) and an HIRL system.

Runway 13-31 is served by Taxiways B, E, F, J and K. Details regarding each taxiway can be found in Section 2.5.2 of this chapter.

2.5.2.3 Runway 4R-22L

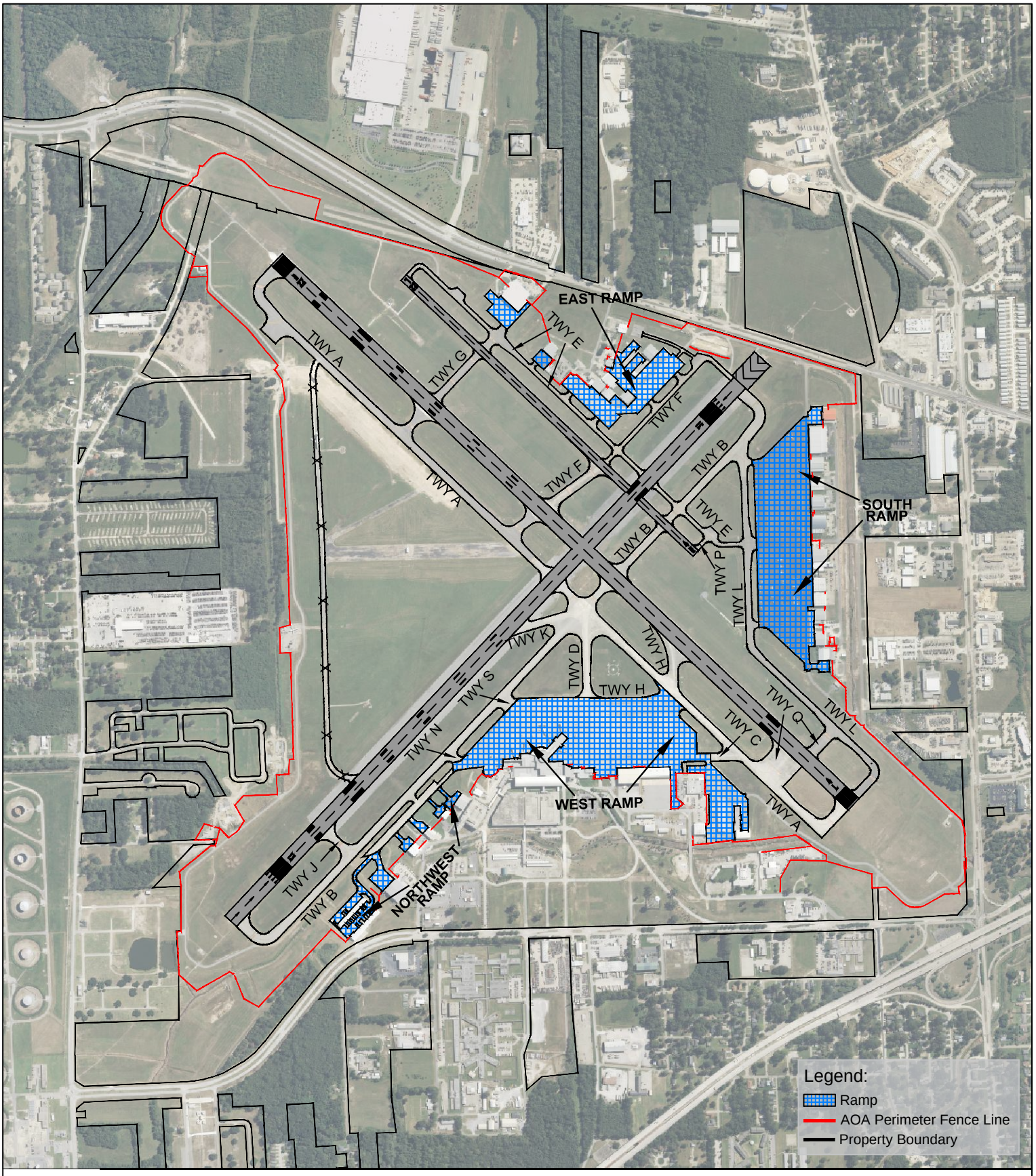
Runway 4R-22L is a General Aviation runway measuring 3,799 feet in length by 75 feet in width and constructed of bituminous asphalt. The runway bearing capacity ranges from 30,000 and 45,000 pounds continuous aircraft weight depending on landing gear type. A visual inspection of the pavement in May of 2016 showed that the pavement is in poor condition.

Runway 4R-22L is equipped with Medium-intensity Runway Lights (MIRL). It is served by Taxiways E, F and G. Details regarding each taxiway can be found in ***Table 2-5*** and in Section 2.5.2 of this chapter.

Table 2-5: Runway Characteristics

	RUNWAY 4L	**RUNWAY 22R**	**RUNWAY 13**	**RUNWAY 31**	**RUNWAY 4R**	**RUNWAY 22L**
% WIND COVERAGE	99.48%	99.48%	99.36%	99.36%	99.48%	99.48%
PAVEMENT STRENGTH (in 1,000 pounds) *	120-S 170-D 300-DT	120-S 170-D 300-DT	120-S 170-D 300-DT	120-S 170-D 300-DT	30-S 45-D ---	30-S 45-D ---
RW LIGHTING	HIRL	HIRL	HIRL	HIRL	MIRL	MIRL
RW MARKING	Non-precision	Precision	Precision	Non-Precision	Basic	Basic
RW WIDTH (feet)	150	150	150	150	75	75
RW LENGTH (feet)	7,500	7,500	7,004	7,004	3,799	3,799
NAV AIDS	REIL, VASI, ASR, GPS, VOR	SA Cat II ILS, ASR, VASI, RVR, GPS, VOR	ILS, NDB, ASR, GPS	NDB, ASR, VASI, GPS	PAPI	PAPI
SURFACE TYPE	Concrete	Concrete	Asphalt	Asphalt	Asphalt	Asphalt
VISUAL APPROACH AIDS	None	MALSR,	MALSR	MALS	None	None

* S = Single Wheel; D = Dual Wheel; DT = 2 Single Wheels in Tandem; None are rated 2 Dual Wheels in Tandem.
Sources: AirNav.com; 2007 BTR Master Plan; and Current FAA Airport Facility Directory.



Existing Airfield Facilities

General Location

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 1200 2400
GRAPHIC SCALE IN FEET

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EXHIBIT 2-3

2.5.3 TAXIWAY SYSTEM

The runway system and developed aviation uses on the Airport are served by a system of taxiways that provides access between the airfield and other aviation facilities. Taxiways link the independent airport elements and provide for controlled movement to and from the runways, general aviation, maintenance and storage facilities, and aircraft parking areas. From a design standpoint, it is desirable to maintain a smooth flow on the taxiway system with a minimum number of points requiring changes in an aircraft's taxiing speed (e.g., runway and taxiway crossings).
All of BTR's taxiways are equipped with Light Emitting Diode (LED) Medium Intensity Taxiway Edge Lighting (MITL).

The Airport's taxiway system is illustrated on ***Exhibit 2-3, Existing Airfield Facilities – General Location*** and ***Exhibit 2-4, Existing Airfield Facilities – Pavement Type and Condition***.

2.5.3.1 Taxiway A

Taxiway A is a full length, parallel taxiway serving Runway 4L-22R. The entire length is 75 feet wide. It is located 400 feet (centerline to centerline) from Runway 4L-22R. It is constructed of bituminous asphalt and concrete. In May of 2016 a visual inspection indicated its condition as good.

2.5.3.2 Taxiway B

Taxiway B is a full length, parallel taxiway serving Runway 13-31. It is 75 feet wide and located 400 feet from the Runway 13 end and 350 feet from the Runway 31 end. It is constructed of bituminous asphalt and concrete. In May of 2016 its condition was designated as good.

2.5.3.3 Taxiway C

Taxiway C connects the Terminal Apron and West Apron to the Runway 4L threshold. It is 75 feet wide and constructed of concrete and in May of 2016 its condition was designated as good.

2.5.3.4 Taxiway D

Taxiway D connects the Terminal Apron to Taxiway B. It is 75 feet wide and constructed of concrete and in May of 2016 its condition was designated as good.

2.5.3.5 Taxiway E

Taxiway E is a full length, parallel taxiway serving Runway 4R-22L. It connects the runway to the east portion of the airfield and the GA area to the south. It is 40 feet in width and is constructed of bituminous asphalt. In May of 2016 a visual inspection indicated its condition as poor.

2.5.3.6 Taxiway F

Taxiway F is a midfield, partial parallel taxiway that connects Runway 4-22 to the East Ramp General Aviation area and the runway end of 13-31. Its width varies from 40 feet to 75 feet and it is constructed of bituminous asphalt and concrete. In May of 2016, a field inspection indicated its condition as good from Runway 4-22 to Taxiway E. The pavement section from Taxiway E to the Runway 31 threshold was noted during this same field visit as poor.

2.5.3.7 Taxiway G

Taxiway G is a midfield runway exit that connects Runways 4L-22R and 4R-22L to the aircraft maintenance facility. Its width varies from 40 feet to 75 feet and it is constructed of bituminous asphalt and concrete. In May of 2016 its condition was designated as good.

2.5.3.8 Taxiway H

Taxiway H is a midfield runway exit connecting Runway 22R to the Terminal Apron. Its width is 75 feet and it is constructed of concrete. In May of 2016 its condition was designated as good.

2.5.3.9 Taxiway J

Taxiway J is a midfield runway exit connecting Runway 13-31 to parallel Taxiway B and the hangars on the north end of the airfield. It is 75 feet wide and constructed of bituminous asphalt. In May of 2016 its condition was designated as good.

2.5.3.10 Taxiway K

Taxiway K is a midfield runway exit connecting Runway 13-31 to parallel Taxiway B and the Terminal Apron. Its width is 75 feet and it is constructed of bituminous asphalt and concrete. In May of 2016 a visual inspection indicated its condition as good.

2.5.3.11 Taxiway L

Taxiway L is a partial parallel taxiway connecting the Runway 4L threshold with the South General Aviation area and Taxiway B. Its width is 40 feet and it is constructed of bituminous asphalt and concrete. In May of 2016 its condition was designated as good.

2.5.3.12 Taxiway N

Taxiway N is a midfield connector providing access from parallel Taxiway B to the Terminal Apron. It is 75 feet wide and constructed of bituminous asphalt. In May of 2016 a visual inspection indicated its condition as good.

2.5.3.13 Taxiway Q

Taxiway Q is a midfield connector providing access from Runway 4L to parallel Taxiways A and L, as well as the deice pad. It is 75 feet wide and constructed of concrete. In May of 2016 its condition was designated as good.

2.5.3.14 Taxiway S

Taxiway S is a midfield connector providing access from parallel Taxiway B to the Terminal Apron. It is 75 feet wide and constructed of bituminous asphalt. In May of 2016 its condition was designated as good.

2.5.4 AIRCRAFT PARKING APRONS

Aircraft parking aprons are defined as areas where aircraft are parked, loaded, unloaded, refueled, and boarded. BTR has multiple aprons, generally identified as the West Ramp (Terminal Apron), the Northwest Hangars, the South Apron and the East Apron. These are depicted on ***Exhibit 2-3, Existing Airfield Facilities – General Location***.

2.5.4.1 West Ramp (Terminal Apron)

The passenger terminal area at BTR consists of multiple facilities essential for commercial air service, including the Terminal Building, the West Ramp (Terminal Apron) and the Aircraft Rescue and Fire Fighting (ARFF) facility (see ***Exhibit 2-3, Existing Airfield Facilities – General Location***). The West Ramp is located east of the Terminal Building. It is constructed of Portland Concrete

Cement (PCC). The available aircraft parking area on the West Ramp is approximately 165,000 square yards. In May of 2016 a visual inspection indicated its condition as good.

2.5.4.2 Northwest Ramp

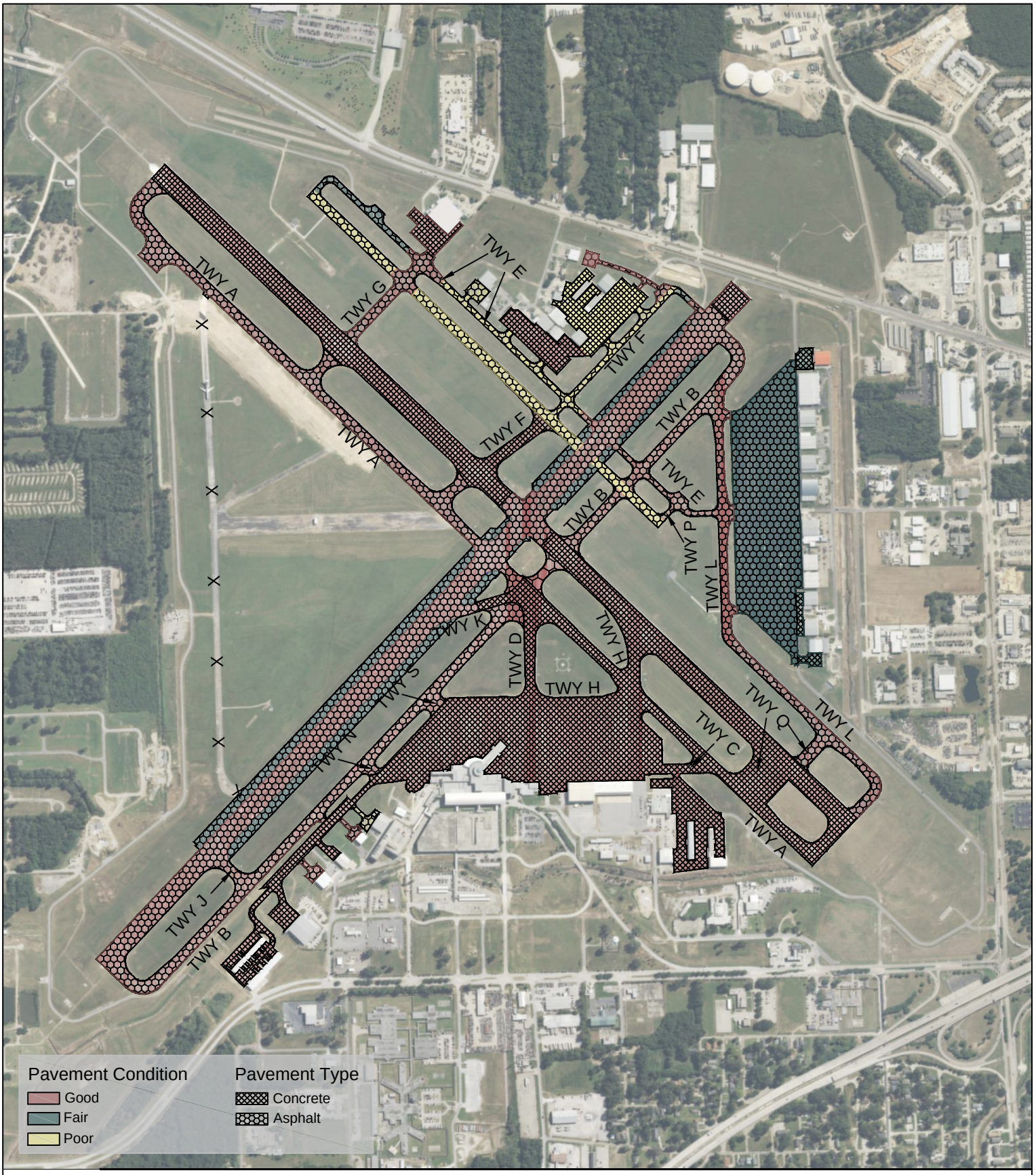
The Northwest Ramp is located in the northwest quadrant of the airfield and is accessed via Taxiways B and J. The apron is constructed of PCC pavement and is approximately 30,000 square yards. It serves the following users/tenants: Vulcan Aero, DOW Chemical, Signature Flight Services, Airport Hangar, LLC and 337 LLC. In May of 2016 a visual inspection indicated its condition as good.

2.5.4.3 South Ramp

The South Ramp is located on the south side of the airfield, and is accessed via Taxiways B, E, L and Q. The apron is constructed of bituminous asphalt and is approximately 117,000 square yards. It serves the following users/tenants: PAI Aero, Baton Rouge Jet Center, Signature Flight Services, W Resources and Averett Aircraft. In May of 2016 a visual inspection indicated its condition as fair.

2.5.4.4 East Ramp

The East Ramp is located on the east side of the airfield and is accessed via Taxiways E, F and G. The apron is constructed of PCC pavement and is approximately 47,000 square yards. It serves the following users/tenants: Landmark Aviation, the BTR Police Hangar, a Transportation Security Administration (TSA) Facility and Executive Aviation. In May of 2016 a visual inspection indicated its condition as good in some areas and poor in others.



Existing Airfield Facilities

Pavement Type and Condition

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 1000 2000
GRAPHIC SCALE IN FEET

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2.6 NAVIGATIONAL AIDS

BTR is served by an array of electronic and visual systems that aid pilots in landing safely and navigating into and around the airfield, including: Instrument Landing Systems (ILS); Global Position Satellites (GPS); Distance Measuring Equipment (DME); Non-Directional Beacon (NDB); Very High Frequency Omni-Directional Radio Range with Tactical Air Navigation (VORTAC); and Airport Surveillance Radar (ASR). These systems are discussed in the following sections.

2.6.1 INSTRUMENT LANDING SYSTEM (ILS)

The Instrument Landing System (ILS) provides a method of precision instrument navigation to a point just beyond the approach end of the runway. Since the system provides both course and glideslope information, lower weather minimums are possible than the minimums provided by a non-precision instrument approach. Precision instrument approaches are runway specific, and therefore, each runway that is to have such an approach must have its own ILS system.

The ILS consists of the following basic components: localizer antenna array (provides lateral navigation to the runway), glideslope antenna array (provides vertical guidance to the approach end of the runway), and runway approach lighting system.

Currently BTR has ILS equipment installed for approaches to Runways 13 and 22R. Runway 22R is equipped with a precision Special Authorization (SA) CAT II Instrument Landing System (ILS) approach and a Global Positioning System (GPS) to assist pilots transitioning from the cockpit instrument landing segment to the runway environment. All ILS equipment is maintained by the FAA.

2.6.2 GLOBAL POSITIONING SYSTEM (GPS)

A Global Positioning System (GPS) assists pilots transitioning from the cockpit instrument landing segment to the runway environment. A GPS is a space-based radio-navigation system consisting of a constellation of satellites and a network of ground stations used for monitoring and control.

2.6.3 NON-DIRECTIONAL BEACON (NDB)

The location and presence of an airport is universally indicated by the airport beacon. BTR is equipped with a non-directional beacon (NDB) located approximately 4 nautical miles northwest of BTR. The NDB transmits an omni-directional signal that is received by the ADF or Automatic Direction Finder. The pilot uses the ADF to determine the direction to the NDB relative to the

aircraft. To navigate using the ADF, the pilot enters the frequency of the NDB and the compass card (or arrow) on the ADF will indicate the heading to the station.

2.6.4 VERY HIGH FREQUENCY (VHF) OMNI-DIRECTIONAL RANGE/TACTICAL AIR NAVIGATION (VORTAC)

A very high frequency omni-directional range/tactical air navigation system (VORTAC) is an aid for both civil and military pilots. It provides directional and distance-measuring information. The VORTAC at BTR is located approximately eight nautical miles southwest of BTR.

2.6.5 APPROACH LIGHTING

Approach Lighting Systems (ALS) are used in the vicinity of runway thresholds in conjunction with electronic navigational aids for the final portion of Instrument Landing System (ILS) approaches under IFR conditions, and as visual guides for nighttime approaches under VFR conditions. These systems provide the basic means to transition from instrument flight to visual flight for landing. The ALS supplies the pilot with visual cues concerning aircraft alignment, roll, height, and position relative to the runway threshold.

2.6.6 SPECIFIC APPROACHES

Runway 4L is equipped with an Area Navigation (RNAV) Global Positioning System (GPS) with vertical guidance. It is also equipped with a Precision Approach Path Indicator (PAPI P4L).

Runway 22R is equipped with a precision Special Authorization (SA) CAT II Instrument Landing System (ILS) approach and a Global Positioning System (GPS) to assist pilots transitioning from the cockpit instrument landing segment to the runway environment. It is also equipped with a Precision Approach Path Indicator (PAPI P4L) and a Medium Intensity Approach Lighting System (MALSR).

Runway 13 is equipped with a precision Instrument Landing System (ILS) approach and a Global Positioning System (GPS) to assist pilots transitioning from the cockpit instrument landing segment to the runway environment. It is also equipped with a Medium Intensity Approach Lighting System (MALSR).

Runway 31 Area Navigation (RNAV) Global Positioning System (GPS) with vertical guidance. It is also equipped with a Precision Approach Path Indicator (PAPI P4L), a Non-Directional Beacon

(NDB), a Visual Approach Slope Indicator (VASI), and a Medium Intensity Approach Lighting System (MALS).

Runways 4R is listed as a visual runway and is equipped with a Precision Approach Path Indicator (PAPI P2L).

Runway 22L is listed as a visual runway and is equipped with a Precision Approach Path Indicator (PAPI P2L).

2.6.7 AIRPORT SURVEILLANCE RADAR (ASR)

The Airport Surveillance Radar (ASR) is used to provide the ATCT with information regarding aircraft operating within the airspace around the Airport. The ASR rotates 360 degrees, and information is displayed on radar scopes in the ATCT. BTR is served by an ASR-11 and is located outside of the Airport Operations Area on leased property east of Plank Road.

2.7 TERMINAL FACILITIES

The Passenger Terminal Complex is located on the west side of the airfield as shown on ***Exhibit 2-5***. It was recently renovated and expanded to provide additional security queuing area and public waiting space. This expansion was completed in 2014. The Terminal Building has three levels. Airline ticket counters and offices are located on the ground level, as well as baggage claim, baggage makeup, concessions and rental car facilities. The original rotunda serves as an arrival court on the pre-security side, with new restrooms and a vending area. The Transportation Security Administration (TSA) checkpoint was relocated to the new rotunda, with room for three lanes when necessary. The ground floor measures approximately 55,000 square feet.

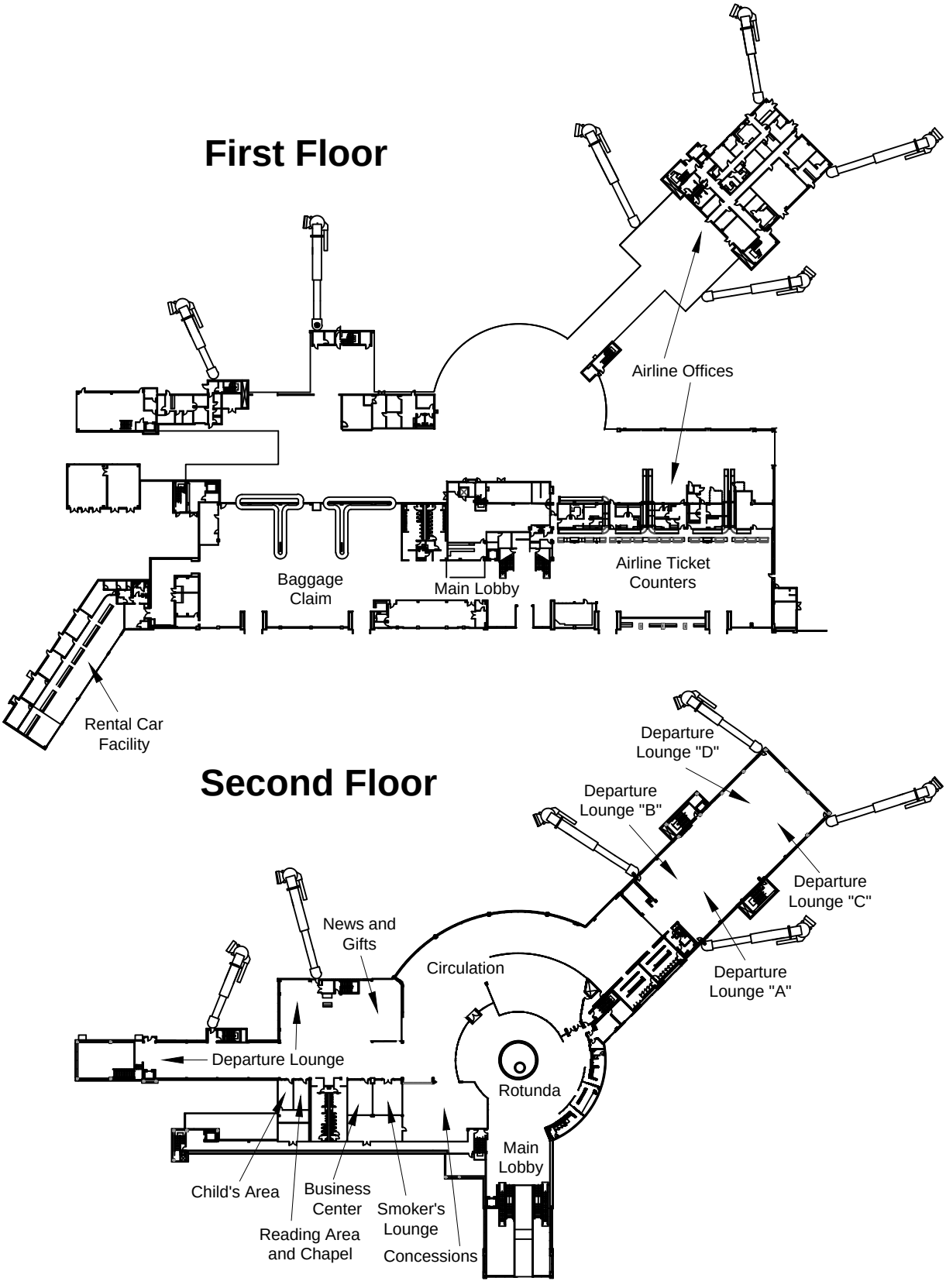
The second level of the Terminal Building is occupied by departure lounges, concessions and non-public spaces for building systems and utilities. It measures approximately 75,000 square feet. The third level of the Terminal Building houses the administration offices and measures approximately 9,000 square feet.

Vehicular access to the Terminal Complex comes from Interstate 10 via Veterans Memorial Boulevard and Captain Ryan Drive, which lead directly to Jackie Cochran Drive (to the front of the Terminal Building).

2.7.1 AIRLINE EXCLUSIVE USE AREAS

Airline Exclusive Use Areas include those facilities in the Terminal Building that are leased by the air carriers to conduct their business operations and to service their respective passengers. They also include Baggage Service Offices, Outbound Baggage Sortation and other Airline Support/Operations Space. Airline Preferential Use Areas are those where the carriers have preferential use of the space, and are primarily for providing service to the public users of the facility. Airline Preferential Use areas include:

- Airline Ticket Counters;
- Airline Self-Service Check-in Kiosks;
- Baggage Claims;
- Inbound Baggage Drop-off;
- Holdrooms; and
- Ramp Operations.



Terminal Complex

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 NTS NTS
GRAPHIC SCALE IN FEET

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2.7.2 PUBLIC USE AREAS

Public Use Areas include those areas in the Terminal Building that are used for the circulation of passengers and other visitors. These areas are not exclusively leased by airlines or tenants. Public use space in the terminal and concourses includes:

- Ticket Lobby;
- Arrival and Departure Lobbies;
- Bag Claim;
- Rental Car Counter Area;
- Circulation/Corridors;
- Security Screening Checkpoints;
- Public Restrooms; and
- Vertical Circulation (stairs, elevators, and escalators).

2.7.3 CONCESSION AREAS

Concession areas generally include those spaces in the Terminal Building that are leased by food and beverage, news and gift, and retail concession operators. Concession space in the BTR terminal includes:

- PJ's Coffee, occupying approximately 400 square feet on the first floor;
- WOW Café, occupying approximately 4,700 square feet on the second floor;
- The Paradies Shop, occupying approximately 1,200 square feet on the first level and approximately 2,300 square feet on the second level; and
- Advertisement Displays/Boards.

WOW Café and the Paradies Shop are located in the pre-security, on the Ground Floor, and post-security area of the second floor of the Terminal Building. Current security requirements prohibit non-passengers (e.g., well-wishers and meeters/greeters) from proceeding through the security screening checkpoints, and there is no immediate indication that this requirement will be revised in the future.

2.7.4 UTILITIES & BUILDING SERVICE AREAS

Utilities and building service areas include those spaces that are used for the operation of the building systems of the Airport. Utilities and building service space in the Terminal Building and concourses includes:

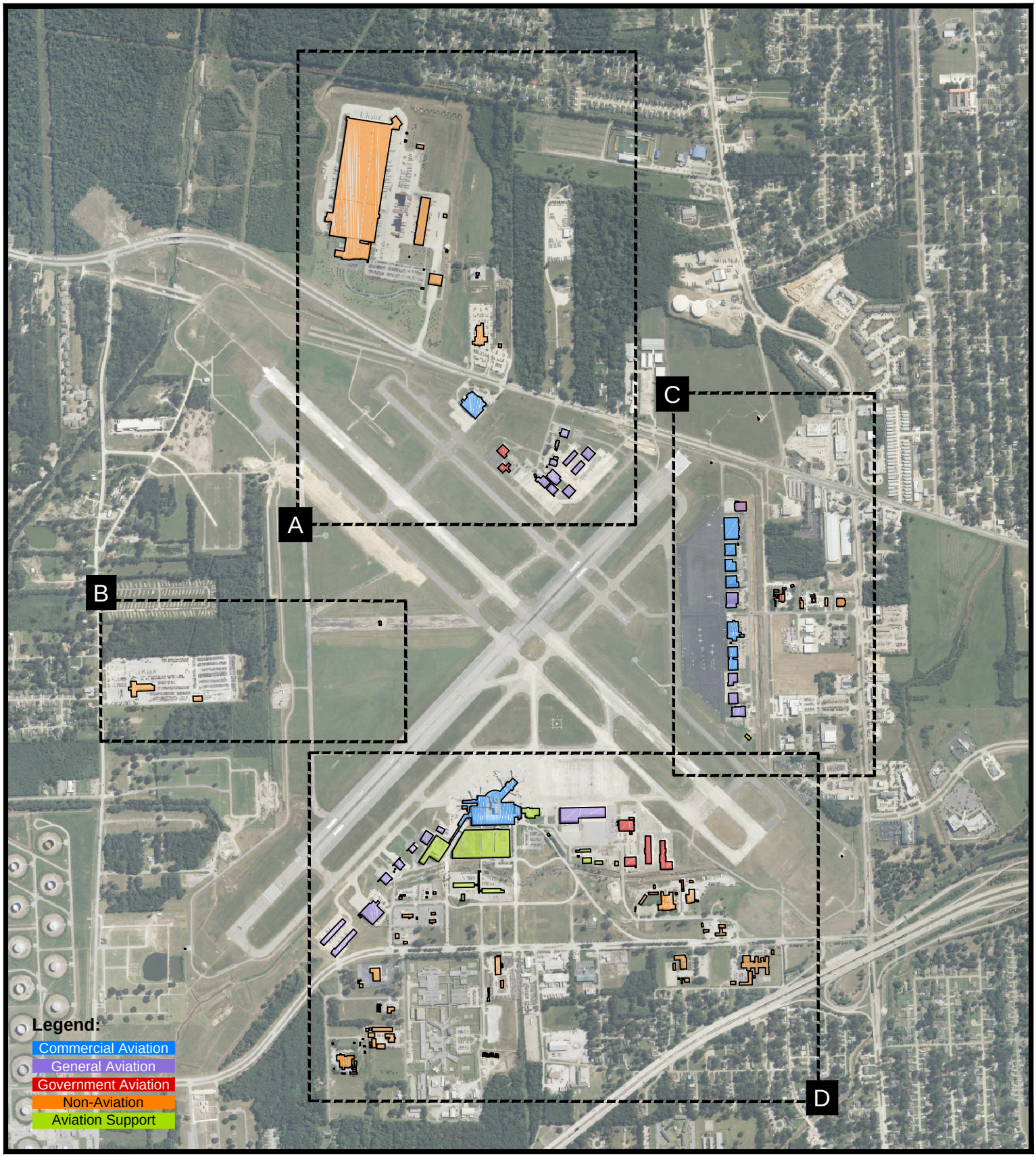
- Mechanical and electrical rooms;
- Telephone and communication equipment rooms;
- Horizontal and vertical right-of-way for distribution of mechanical, electrical, plumbing and information technology equipment (MEP-IT);
- Janitorial closets; and
- Storage areas.

These facilities are located throughout the Terminal Complex, including some rooftop systems.

2.8 SUPPORT/ANCILLARY FACILITIES

This section documents the remaining on-Airport facilities that are not located within the Terminal Building and/or do not comprise part of the airfield or ground transportation infrastructure. They include facilities currently operated by Airport tenants, the City of Baton Rouge, East Baton Rouge Parish and the FAA. Other miscellaneous facilities that are either vacant or located off-Airport that have an operational dependency with other on-Airport facilities are also discussed. BTR's existing buildings are depicted on ***Exhibits 2-6*** through ***2-6D, Existing Buildings***. The building inventory includes the following:

- Airport Maintenance Facilities;
- General Aviation (GA)/Fixed Base Operator (FBO) Facilities;
- Airport Traffic Control Tower (ATCT) Facilities;
- Miscellaneous Facilities (owned by the City of Baton Rouge and/or East Baton Rouge Parish);
- Aircraft Rescue and Fire Fighting Facilities (ARFF);
- Perimeter Fencing and Airfield Access Facilities;
- Fuel Storage Areas;
- Deicing Facilities;
- Taxicab Queuing, and
- Utilities.



Existing Buildings

Map Key

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 1400 2800
GRAPHIC SCALE IN FEET

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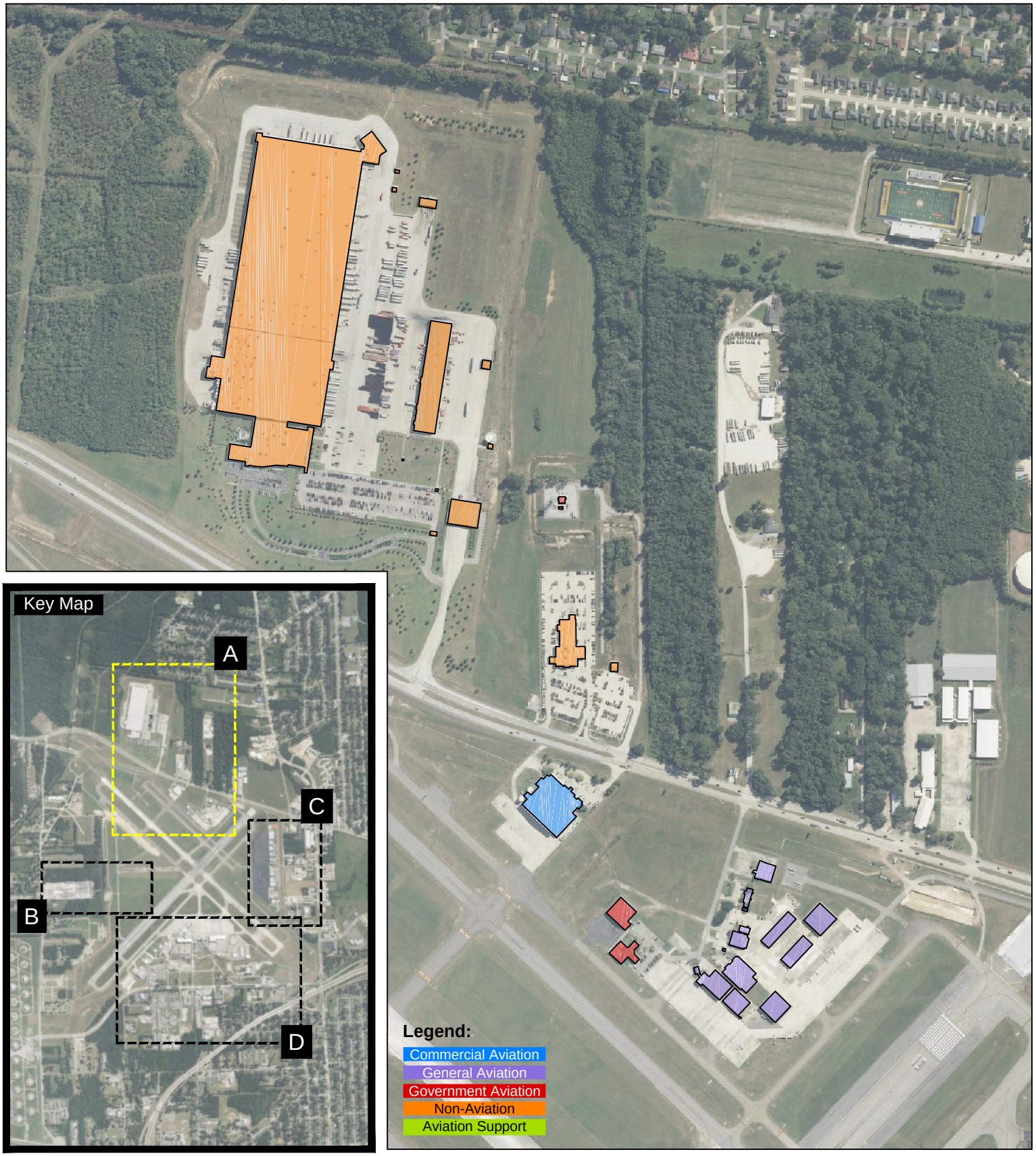
EXHIBIT 2-6



Existing Buildings

Area 'A'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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EXHIBIT 2-6A

Existing Buildings

Area 'B'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 500 1000
GRAPHIC SCALE IN FEET

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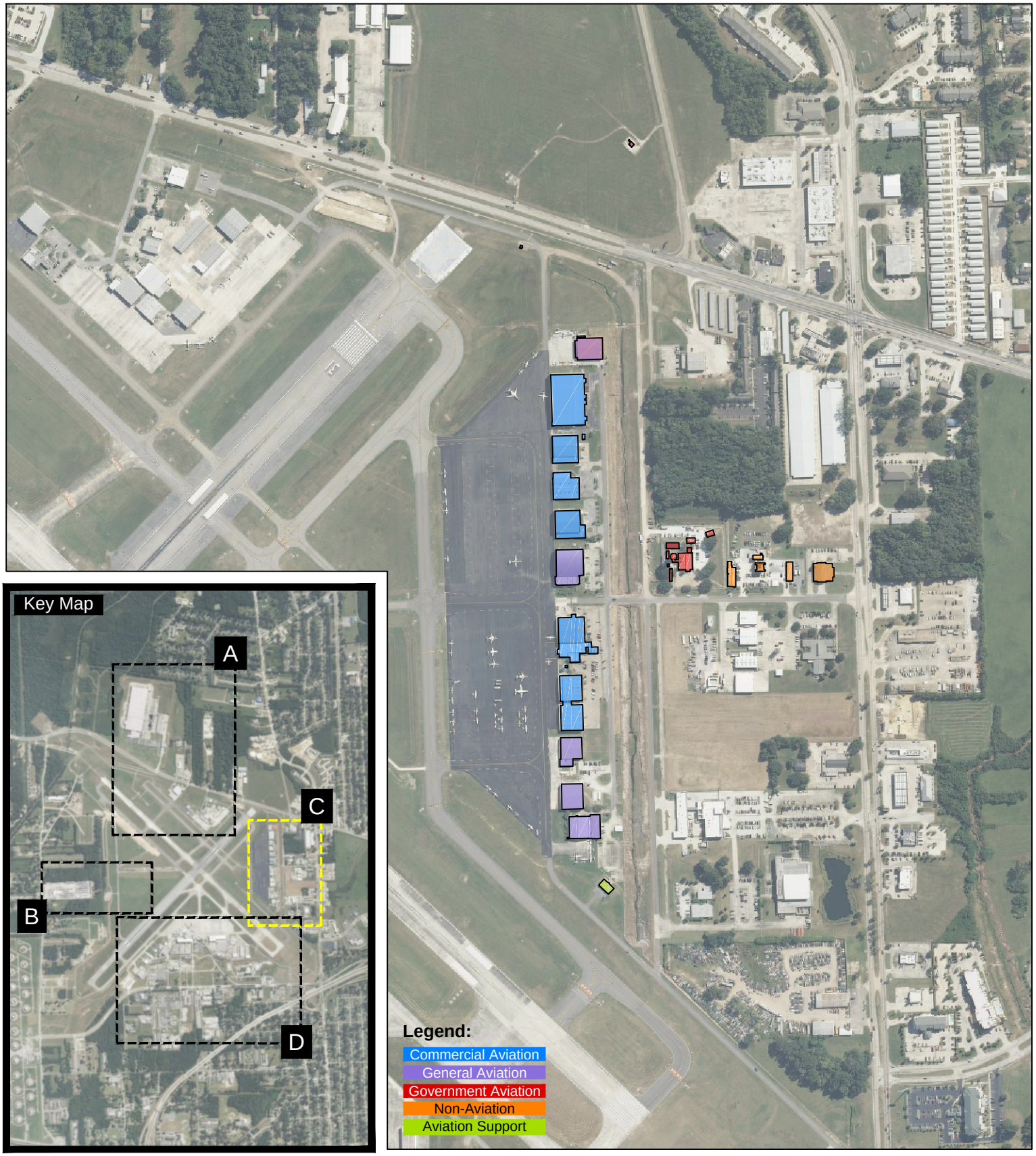
EXHIBIT 2-6B



Existing Buildings

Area 'C'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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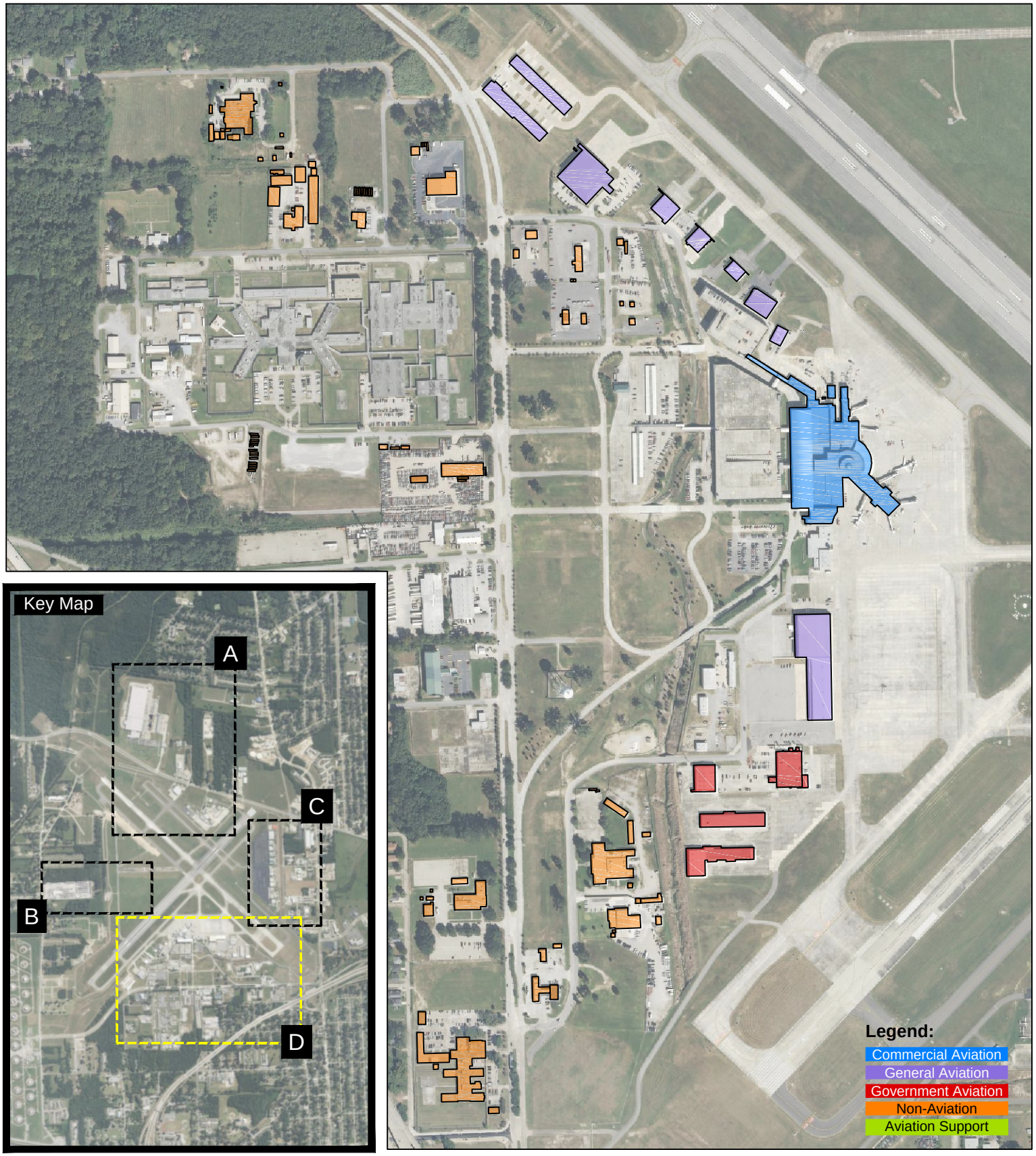
EXHIBIT 2-6C



BTR
BATON ROUGE METROPOLITAN AIRPORT

Existing Buildings

Area 'D'

0 600 1200

GRAPHIC SCALE IN FEET

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EXHIBIT 2-6D

The following subsections provide general information pertaining to the present configuration of the Airport and gross areas dedicated to various facilities for each type. A general description of each facility and the primary tenant is provided. ***Exhibits 2-6*** through ***2-6D, Existing Buildings*** identify the location of and ***Table 2-6, Existing Building Inventory*** provides a summary of the use of the buildings within the Airport boundaries. The inventory lists tenants, building condition and lease information.

2.8.1 AIRCRAFT MAINTENANCE FACILITIES

ExpressJet has an aircraft maintenance facility on the east side of the airfield for their fleet of aircraft. The Fixed Base Operators (FBOs), also located on the airfield, provide for their own maintenance on-site. An FBO is a commercial business granted the right by an airport to operate on airport property to provide services such as fueling, tie-down and parking, aircraft rental, aircraft maintenance, flight instruction, etc.

Table 2-6: Existing Building Inventory (see Appendix A for Map of Tenants)

Building Number	Tenant	Building Size (Sq Ft)		Property Size (Acreage)
		Hangar	Office Space	
SECTION 1				
1A	Vacant	N/A	N/A	13.4
1F	Vacant	N/A	N/A	3.1
1G	Vacant	N/A	N/A	4.2
1H	Vacant	N/A	N/A	8.7
1B	Vacant	N/A	N/A	3.9
1C	Vacant	N/A	N/A	7
1D	Vacant	N/A	N/A	2.03
2A	Vacant	N/A	N/A	4
2B	Vacant	N/A	N/A	7.9
AA	Animal Control	N/A	26,910 sq ft	5.2
2J	Vacant	N/A	N/A	1.5
2C	Vacant	N/A	N/A	1.6
AB	Mosquito and Rodent Control	N/A	7 Bldgs: 27,041 sq ft.	0
AC	Loomis	N/A	14,840 sq ft	4.5

Building Number	Tenant	Building Size (Sq Ft)		Property Size (Acreage)
		Hangar	Office Space	
SECTION 2				
BW	Mosquito Abatement	N/A	N/A	4.5
BX	Legal Air, LLC	N/A	N/A	4
BY	337, LLC	N/A	N/A	1.7
CE	337, LLC	0	0	1.5
??	337, LLC	0	0	0
BZ	337, LLC	N/A	N/A	0.76
CA	337, LLC	N/A	N/A	1
AE	Dow Chemical	N/A	N/A	4.5
AG	Vulcan Aero	0	0	0.3
AH	Signature Flight Serv.	0	0	0.18
AL	Airport Hangar, LLC	0	0	0.55
AN	BR Comm. College	N/A	N/A	1.6
AM	Head & Enquist	N/A	N/A	0.6
AF	National Rental Car	N/A	2 Bldgs: 1,560 sq ft	0.66
CD	Budget Car Rental	N/A	400 sq ft.	0.72
AJ	Hertz Car Rental	N/A	3,540 sq ft.	1.5
AI	Enterprise Car Rental	N/A	1,998 sq ft.	1.1
2D	Vacant	N/A	N/A	1.4
AK	Avis Car Rental	N/A	1,410 sq ft.	1.5
2E	Vacant	N/A	N/A	3.3
AO	EBR Parish Prison	N/A	N/A	6.7
CF	A Affordable Bail Bonds	N/A	760 sq ft.	??
CG	Anderson Bail Bonds	N/A	450 sq ft.	??
CH	Bail Bonds	N/A	600 sq ft.	??
AP	Roadrunner Towing	N/A	12,000 sq ft.	3.8
2F	Vacant	N/A	N/A	1.7
2G	Vacant	N/A	N/A	1.5
2H	Vacant	N/A	N/A	5.7
2I	Vacant	N/A	N/A	3.3

Building Number	Tenant	Building Size (Sq Ft)		Property Size (Acreage)
		Hangar	Office Space	
SECTION 3				
AQ	Total Delivery & Logistics	N/A	N/A	0.2
AR	Hesselbein	N/A	N/A	1.9
CB	Sheriff's Admin.	N/A	N/A	2.4
AS	LA Division Admin.	0	0	4.5
AT	Vacant	0	0	4.7
AU	Sheriff's Department	0	0	3.3
2N	Vacant	N/A	N/A	7.6
AX	Trafalgar Management (Texaco)	N/A	2 Bldgs: 3,905 sq t.	1.6
2L	Vacant	N/A	N/A	1.8
AV	Department of Health and Hospitals	0	0	4.9
2M	Vacant	N/A	N/A	2.3
AW	EBR Juvenile Detention	N/A	N/A	5.6

Building Number	Tenant	Building Size (Sq Ft)		Property Size (Acreage)
		Hangar	Office Space	
SECTION 4				
BV	PAI Aero	0	0	1.54
AZ	Baton Rouge Jet Center	0	0	1.9
BA	Signature Aviation Lot A	0	0	1
BA	Signature Aviation Lot B	0	0	1
BA	Signature Aviation Lot C	0	0	0.64
BB	W Resources	0	0	0.52
BC	Signature Aviation Lot G	0	0	0.5
BD	Signature Aviation Lot H	0	0	0.4
BE	Signature Aviation Lot I	0	0	0.4
BF	Signature Aviation Lot J	0	0	1
BG	Averett Aircraft	0	0	1
3A	Vacant	N/A	N/A	3.6
AY	Roadrunner Towing on Harding	N/A	N/A	8
BH	Roco	0	0	1.85
3B	Vacant	N/A	N/A	5
3E	Vacant	N/A	N/A	2
3D	Vacant	N/A	N/A	0.27

Building Number	Tenant	Building Size (Sq Ft)		Property Size (Acreage)
		Hangar	Office Space	
SECTION 5				
BI	Executive Aviation	N/A	N/A	6.7
4B	Vacant	N/A	N/A	2.6
BL	Signature Aviation	N/A	N/A	7.3
BN	BTR Police Hangar	0	0	0.3
BM	TSA Facility	0	0	0.2
BO	Express Jet	0	0	5
4A	Vacant	0	0	5.5
4C	Vacant	N/A	N/A	1
4D	Vacant	N/A	N/A	8.6
BP	All Star Chevrolet Tract B	N/A	1,035 sq ft	1.4
BQ	All Star Chevrolet Tract A	0	0	5.8
BR	Coca-Cola	N/A	6 Bldgs	114.5
BS	Right of First Refusal	N/A	N/A	20.42
5A	Vacant	N/A	N/A	226
4B	Vacant	N/A	N/A	67
Civil Air Patrol	Civil Air Patrol	0	0	??
FAA Radar	FAA Radar	N/A	N/A	??

Building Number	Tenant	Building Size (Sq Ft)		Property Size (Acreage)
		Hangar	Office Space	
SECTION 6				
6A	Baton Rouge Metropolitan Airport	0	0	??
6B	Vacant	N/A	N/A	62
BU	ABC Auto Auction Tract A	N/A	2 Bldgs	19.28
BT	ABC Auto Tract B	N/A	N/A	7.4
6D	Vacant	N/A	N/A	0.1
5H	Vacant	N/A	N/A	0.31
5G	Vacant	N/A	N/A	6.9
5F	Vacant	N/A	N/A	0.34
5E	Vacant	N/A	N/A	2

End of Table 2-6: Existing Building Inventory

Currently, there are 3 FBOs on the field that provide maintenance for aviation users. Among the FBOs, Signature Aviation does not have its own onsite facility but uses a combination of Southern Aircraft Services, Davis Aircraft, and Averett Aircraft for maintenance; Executive Aviation uses GH Enterprise for maintenance; and BTR Jet uses Southern Aircraft for maintenance services (see ***Exhibit 2-6, Existing Buildings***).

2.8.2 AIRPORT MAINTENANCE FACILITIES

There are currently four structures dedicated to airport maintenance, all located south of the Terminal Building on Jimmy Wedell Drive. The building area totals 15,000 square feet and accommodates offices, bulk storage ad equipment storage (see ***Exhibit 2-6, Existing Buildings***).

2.8.3 GENERAL AVIATION/FIXED BASE OPERATOR (FBO) FACILITIES

The Airport is served by three Fixed Based Operators (FBO): Signature Aviation, Executive Aviation, and BTR Jet (see ***Exhibits 2-7, 2-7A, and 2-7B, FBOs***). Signature Aviation provides tie-down services, limited hangar space, fuel, catering, pilot/passenger lounge, and on-site rental cars. Executive Aviation provides fuel, maintenance, charters, car rentals, limousine service and a lounge/lobby. BTR Jet provides maintenance services, fuel, concierge services, on-site rental cars and catering.

Fixed Base Operator

Map Key

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 1200 2400
GRAPHIC SCALE IN FEET

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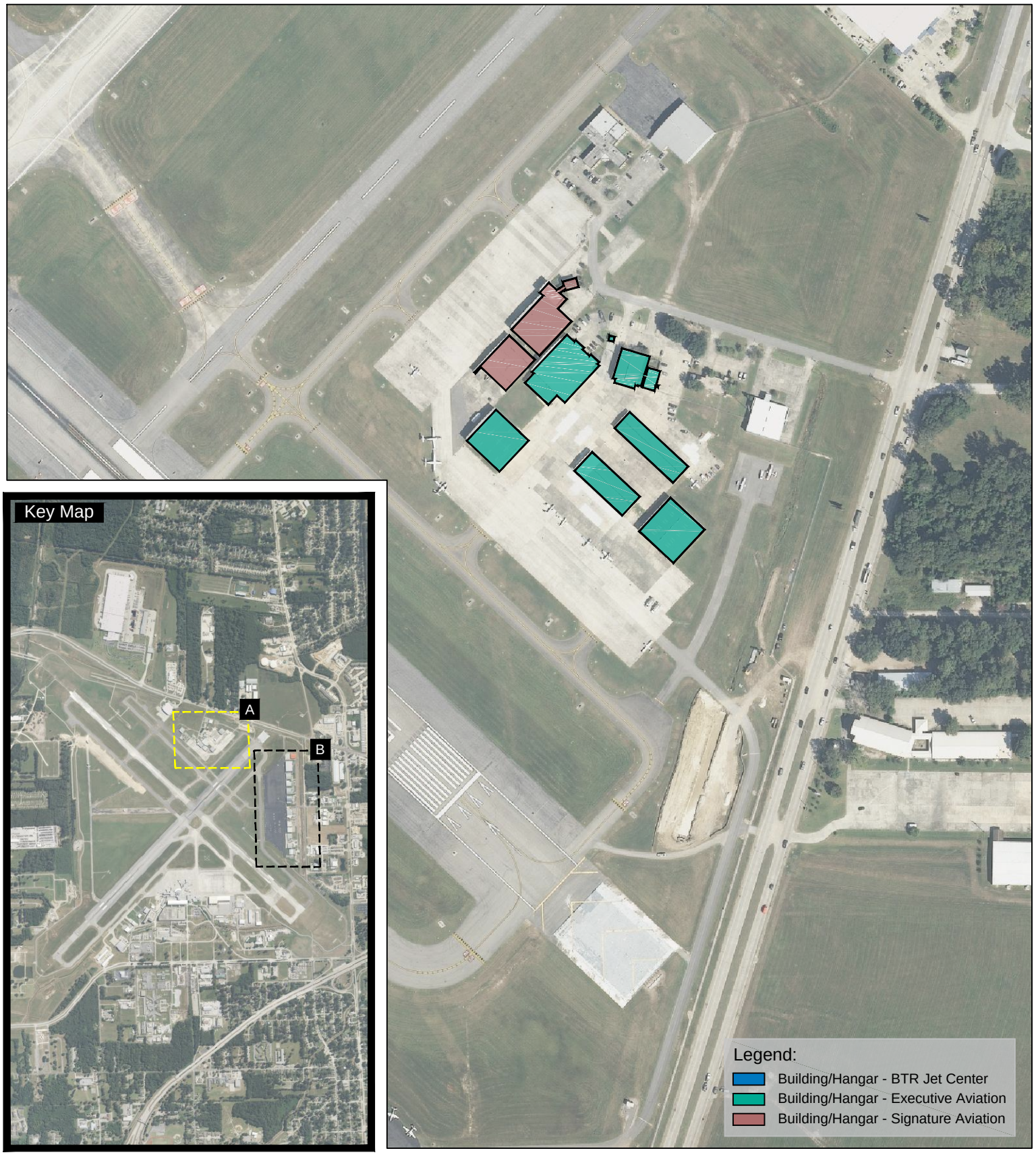

Fixed Base Operator

Area 'A'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 300 600
GRAPHIC SCALE IN FEET

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EXHIBIT 2-7A

Fixed Base Operator

Area 'B'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 300 600
GRAPHIC SCALE IN FEET

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EXHIBIT 2-7B

2.8.4 AIRCRAFT RESCUE & FIREFIGHTING FACILITIES (ARFF)

An 8,200 square foot Aircraft Rescue and Firefighting Facility (ARFF) is located south of the Terminal Building. It was commissioned and certified in 1996 and renovated in 2011.

2.8.5 PERIMETER FENCING & AIRFIELD ACCESS ACILITIES

A complete perimeter fence protects the Airport Operations Area (AOA). The Airport staff and security personnel monitor its condition daily. All vehicular access to the AOA is controlled by locked and/or access controlled gates. The FBO controls all access associated with its activities.

2.8.6 FUEL STORAGE FACILITIES

Fuel is provided on the airfield in several manners; the FBOs (Signature Aviation, Executive Aviation, and Baton Rouge Jet) provide fueling services to their customers. Each FBO has its own on-site tanks and provides both Jet A and AvGas. Signature Aviation is currently BTR's only fuel supplier for air carriers. It supplies both Jet A and AvGas.

2.9 UTILITIES

As facilities are improved and further developed, all utility improvements (e.g., sanitary sewer, natural gas, water, telecommunications, and electrical service) will be included in the development as required to accommodate the additional service demand. The utilities listed below identify the existing service providers and capacities.

2.9.1 SANITARY SEWER

The City of Baton Rouge and East Baton Rouge Parish currently collect and treat all sanitary sewage produced on Airport property.

2.9.2 WATER SERVICE

Potable water is provided to all tenants in the area by the Baton Rouge Water Company.

2.9.3 NATURAL GAS

Natural gas is supplied to BTR and Airport tenants by the Entergy Corporation of Louisiana.

2.9.4 ELECTRICAL SERVICE

Power is supplied to the Airport and the adjacent community by Entergy Corporation of Louisiana.

2.9.5 TELECOMMUNICATION SERVICE

Telephone service is provided to BTR and Airport tenants by AT&T.

2.10 GROUND ACCESS

The Airport is surrounded by a ground transportation system that includes regional highways and arterial roadways (see ***Exhibit 2-8, Ground Access***). The on-Airport transportation network interfaces with the regional system utilizing roadways, parking areas, and rental car facilities. This section discusses these on- and off-Airport ground transportation facilities. The discussion of ground access facilities is categorized into: Airport Access; Terminal Building Parking Facilities; Fixed Base Operator (FBO) Parking; and Rental Car Facilities. Parking facilities are illustrated on ***Exhibit 2-9, Existing Landside Parking.***

2.10.1 AIRPORT ACCESS

The general Airport boundary is defined along the north by Blount Road; along the east by Plank Road; along the south by Harding Boulevard; and on the west side by Veteran's Memorial Boulevard. Vehicular access to the Terminal comes via Veterans Memorial Boulevard and Captain Ryan Drive provides access to the Terminal from Veteran's Memorial Boulevard. The north side of the Airport property is accessed via Blount Road. The General Aviation (GA) area on the south side is accessed from Harding Boulevard and Plank Road and the GA facilities along the west side of Taxiway B are accessed by a series of interior roads.

2.10.2 TERMINAL BUILDING PARKING FACILITIES

The Terminal Building parking garage and surface lot lie to the immediate west of the Terminal, and are accessed via Veterans Memorial Boulevard and Captain Ryan Drive. Long-term parking for approximately 860 vehicles is provided in a surface lot to the west of the garage. Short-term parking for approximately 1,150 vehicles is provided within the garage. Airport employee parking is provided in 2 different lots, one south of the parking garage and another on the fifth floor of the Rental Car Garage, with a total of approximately 450 spaces.

Ground Access

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 1500 3000
GRAPHIC SCALE IN FEET

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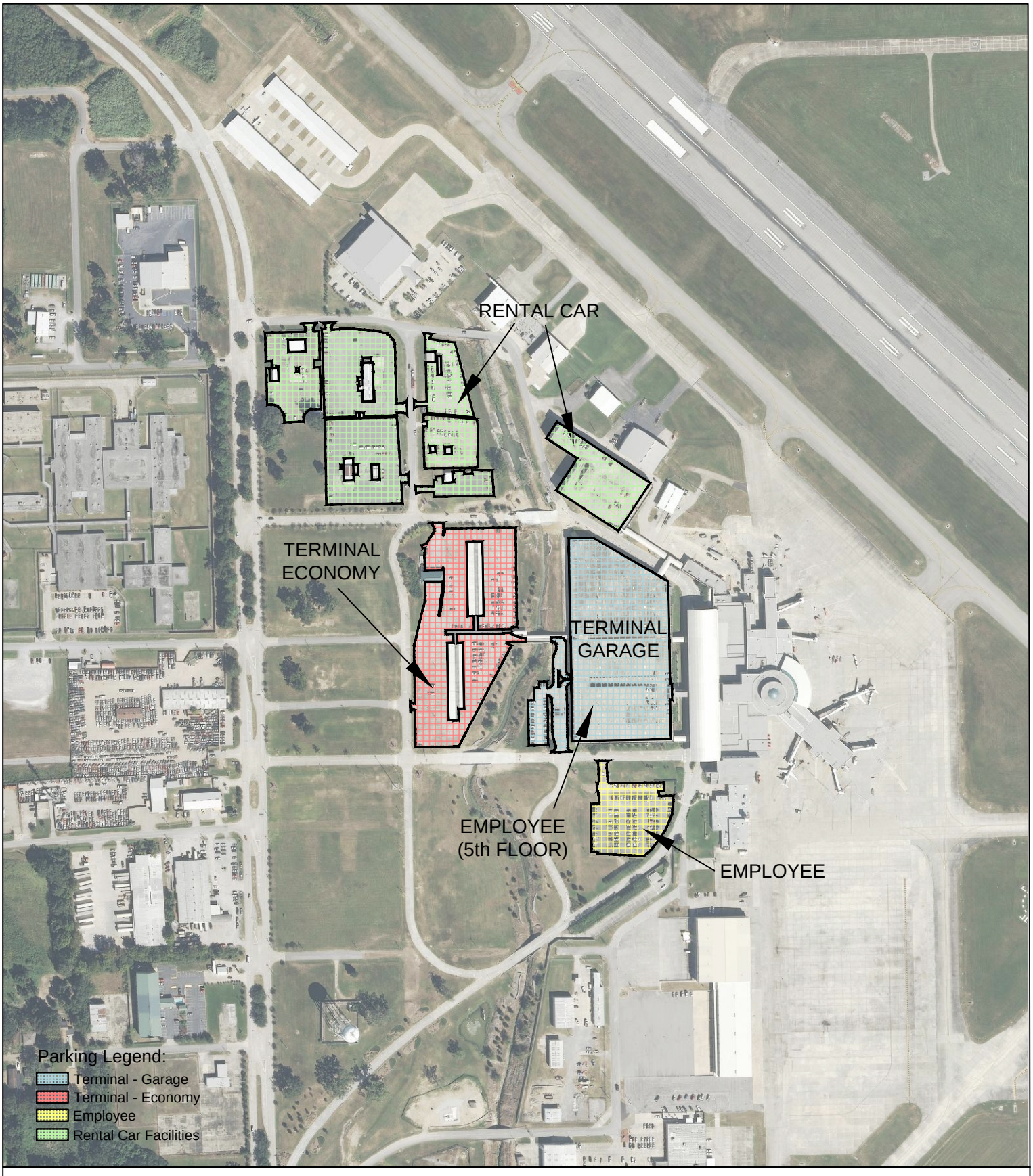

Existing Landside Parking

BTR
BATON ROUGE
METROPOLITAN AIRPORT

0 400 800
GRAPHIC SCALE IN FEET

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2.10.3 FIXED BASE OPERATOR (FBO) PARKING

Signature Aviation, Executive Aviation, and Baton Rouge Jet (BTR Jet) are the Airport's Fixed Base Operators. Each of the FBO sites can accommodate approximately 20 to 25 vehicles in their respective parking lots.

2.11 OTHER FACILITIES & USES

2.11.1 OTHER COMMERCIAL USERS

There are several other commercial users located on the Airport that provide a myriad of services. Their locations can be found on ***Exhibit 2-10*** through ***2-10E, Other Airside & Landside Users.*** The following is a summary listing of those users by classification.

Airside Commercial Users:

- Vulcan Aero;
- Dow Chemical;
- Airport Hangar, LLC;
- 337 LLC;
- PAI Aero;
- Baton Rouge Jet Center;
- W Resources;
- Averett Aircraft;
- Executive Aviation;
- Express Jet, and
- Signature Aviation.

Landside Commercial Users:

- Mosquito and Rodent Control;
- Loomis Armored US;
- Legal Air, LLC;
- Baton Rouge Community College;
- Head & Enquist;
- East Baton Rouge Parish Prison;

- A Affordable Bail Bonds;
- Anderson Bail Bonds;
- Roadrunner Towing;
- Total Delivery & Logistics
- Hesselbein Tire;
- Trafalgar Management (Texaco);
- Roco Rescue;
- All Star Chevrolet;
- Coca-Cola; and
- ABC Auto Auction.

2.11.2 GOVERNMENT FACILITIES

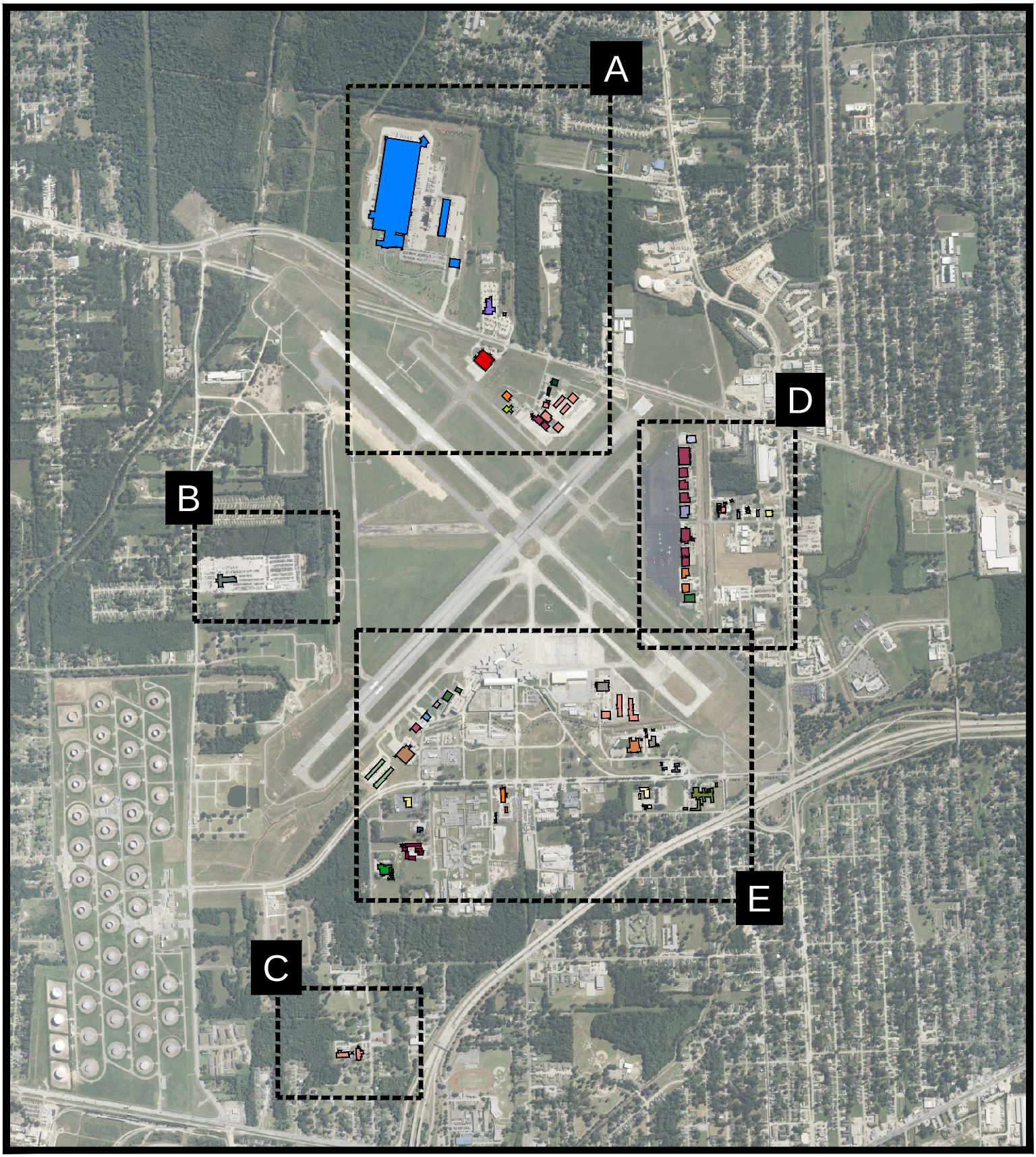
Government users located on Airport property include the following (see Exhibits 2-10 through 2-10E, Other Airside & Landside Users for locations of each):

- BTR Police Hangar;
- TSA Facility;
- Animal Control;
- Baton Rouge Sheriff's Department;
- Department of Health & Hospitals;
- East Baton Rouge Juvenile Detention; and
- Civil Air Patrol.

2.12 AIRPORT ENVIRONS

2.12.1 OFF-AIRPORT AREAS

The Airport is bounded along the north by industrial and residential areas. Commercial, residential and park lands lie to the south. Along the eastern boundary, industrial, commercial and residential areas are found, while residential and institutional areas lie to the west. As the community of Baton Rouge continues to grow, it will be important for the Airport and the governing powers of the City of Baton Rouge and East Baton Rouge Parish to coordinate this continued growth so that development of incompatible land use can be avoided.



Other Airside and Landside Users

Map Key

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 1400 2800
GRAPHIC SCALE IN FEET

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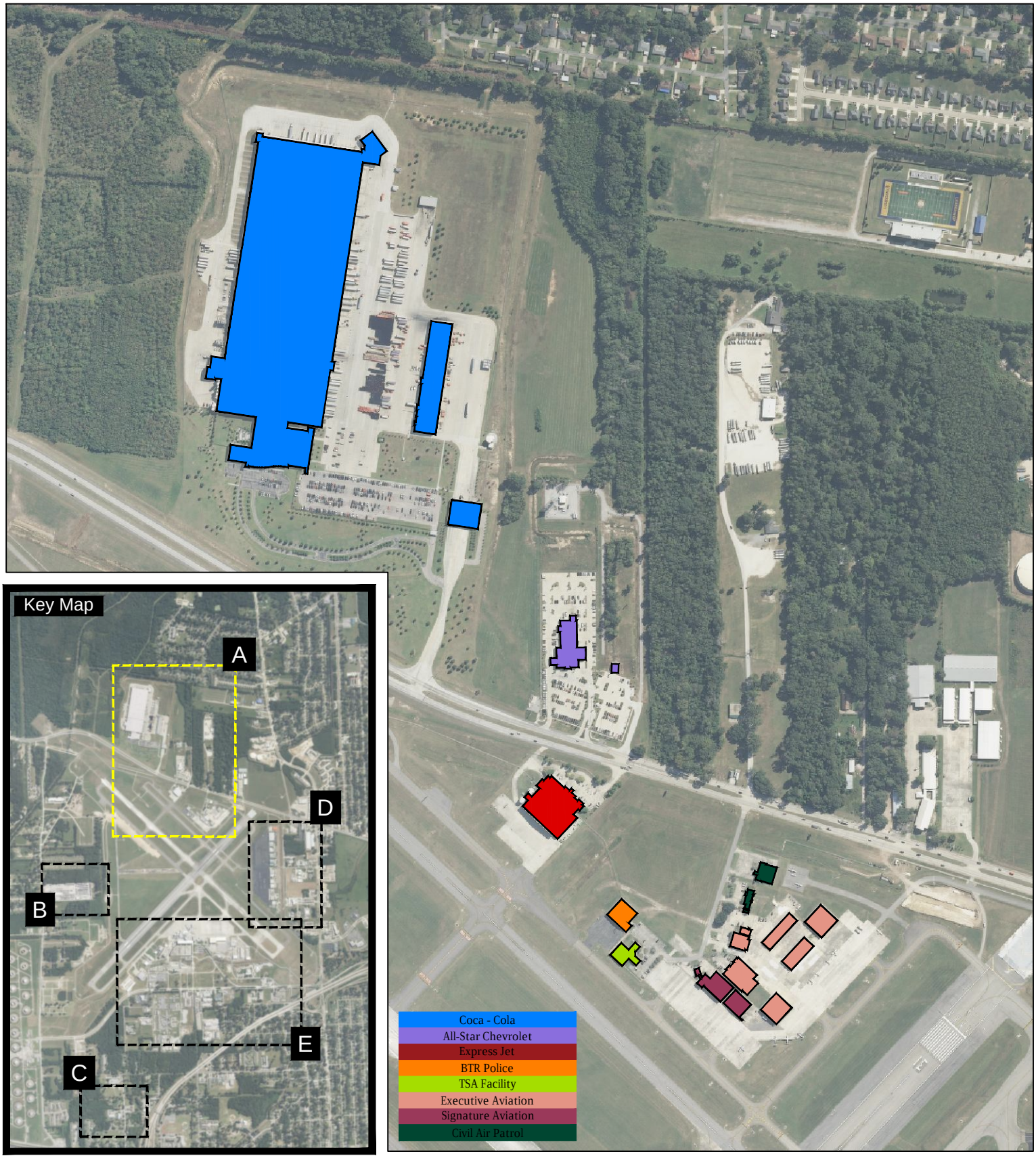
EXHIBIT 2-10



Other Airside and Landside Users

Area 'A'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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EXHIBIT 2-10A

Other Airside and Landside Users

Area 'B'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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EXHIBIT 2-10B

Other Airside and Landside Users

Area 'C'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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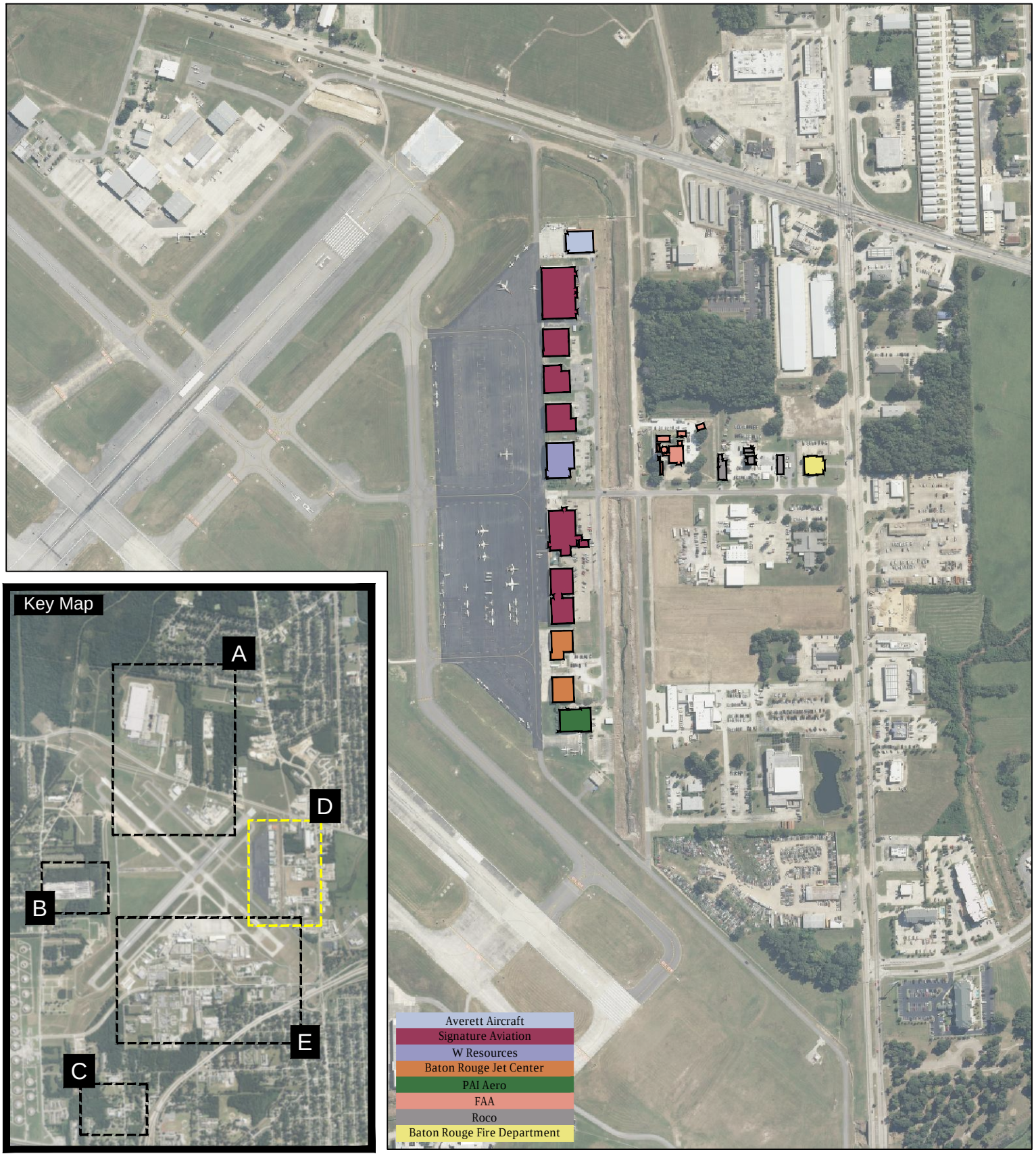
EXHIBIT 2-10C



Other Airside and Landside Users

Area 'D'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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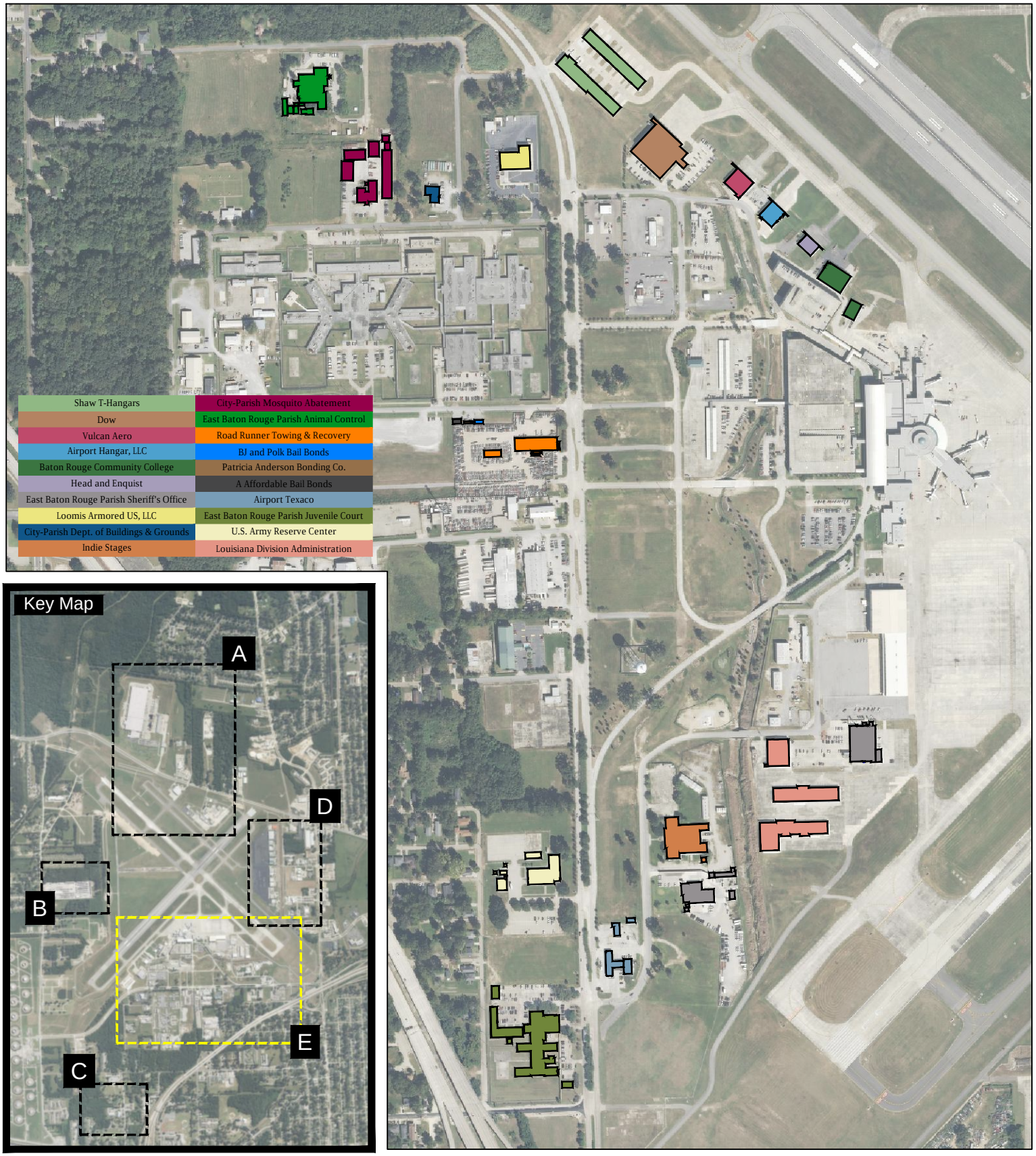
EXHIBIT 2-10D



Other Airside and Landside Users

Area 'E'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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EXHIBIT 2-10E

BTR
BATON ROUGE
METROPOLITAN AIRPORT

Baton Rouge Metropolitan Airport
Master Plan Update

Chapter Three
Aviation Demand Forecasts

Kutchins & Groh

CHAPTER THREE
Aviation Demand Forecasts

Aviation demand defines an airport's ability to accommodate existing and future aircraft and operations, thus determining the type, size, and timing of future airside and landside development. Forecasting this demand is a critical element in the overall master planning process. In this study, projections of aviation demand for the next 20 years were prepared for aircraft operations, passenger enplanements, and based aircraft for the Baton Rouge Metropolitan Airport (BTR).

The forecast is based on an analysis that considers historical aviation trends at BTR and throughout the nation, local historical and socioeconomic data, Federal Aviation Administration (FAA) Terminal Area Forecast (TAF), and Airport records.

The base year for these forecasts is 2015, and projections of aviation activity for the Airport were prepared for short-term (2016 - 2021), mid-term (2022 - 2026), and long-term (2027 - 2036) timeframes.

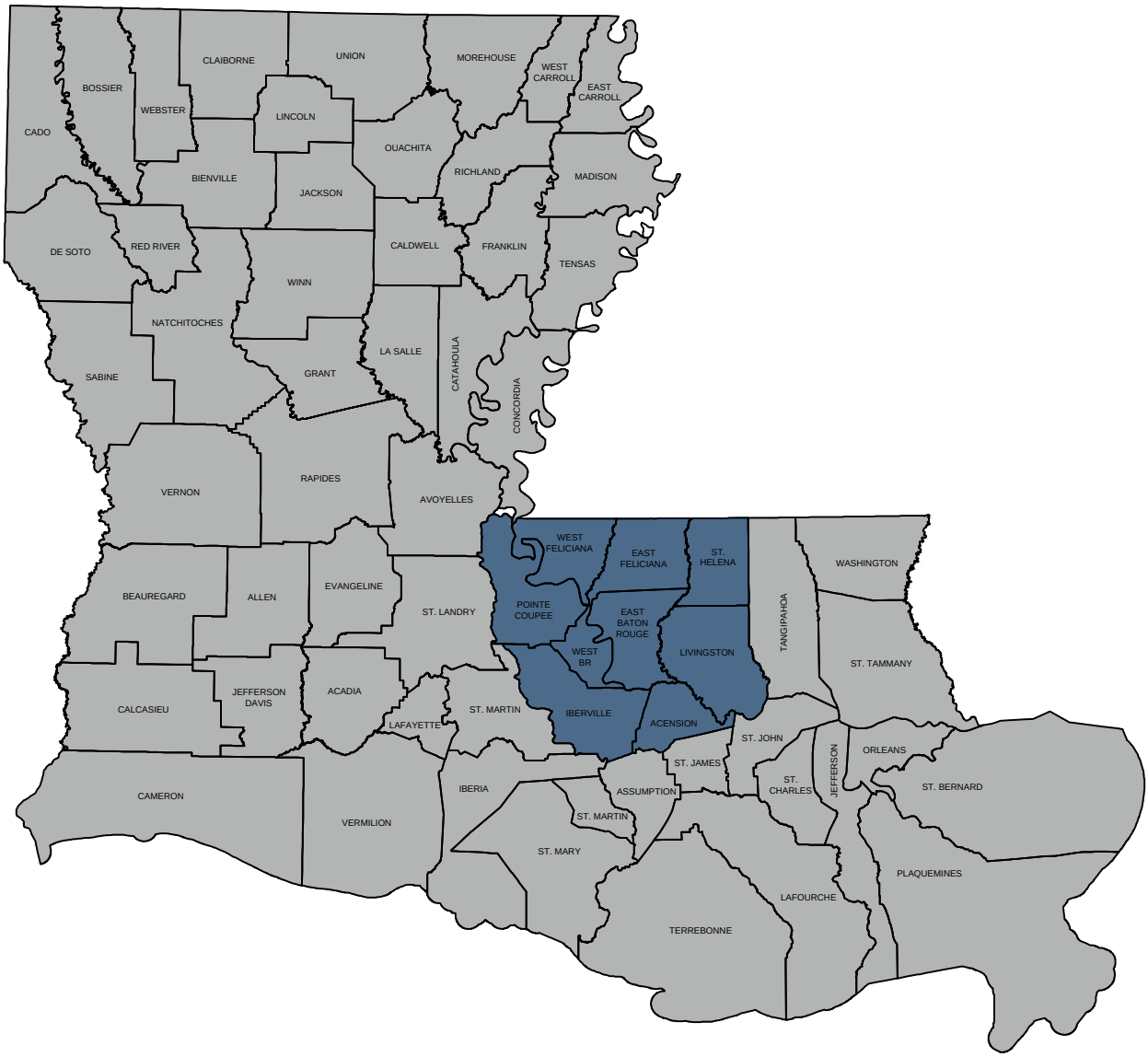
These forecasts are intended to serve as a meaningful guide to the future development of the Airport. It should be noted that short-term fluctuations in an airport's activity may be caused by a variety of factors which generally will not affect the facility's projected growth over the long-term planning horizon.

3.1 ROLE OF THE AIRPORT

3.1.1 Market Area and Airport Description

The Baton Rouge Metropolitan Airport is located in East Baton Rouge Parish, Louisiana, approximately five miles northeast of the City's Central Business District. Baton Rouge is the state Capital of Louisiana and is the second largest metropolitan city in the state. It is situated along the Mississippi River approximately 80 miles west of New Orleans, Louisiana and 58 miles east of Lafayette, Louisiana.

As shown in ***Exhibit 3-1, Market Area*****,** the Baton Rouge Metropolitan Statistical Area (MSA) is adjacent to the New Orleans MSA and is comprised of 9 parishes (Ascension, East Baton Rouge, East Feliciana, Iberville, Livingston, Pointe Coupee, St. Helena, West Baton Rouge, and West Feliciana). Additionally, this area is adjacent to Mississippi's southwestern border.



Legend:

Baton Rouge Metropolitan Statistical Area (MSA)

Market Area

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 NTS NTS
GRAPHIC SCALE IN FEET

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3.1.2 Economic Activity and Demographics

As the second-largest city in the State, the official 2010 census lists the population of Baton Rouge as 799,000. The population has generally grown at a rate similar to the greater United States through 2015. It is important to note that in 2006, the Baton Rouge MSA experienced a 4.7% year-over-year increase in population. This is largely due to the displacement of New Orleans MSA inhabitants who moved to Baton Rouge following Hurricane Katrina. In the same year, the overall population of Louisiana fell 5.6%. The Baton Rouge MSA Population growth over the following year (2007) remained positive at 0.8%, suggesting a permanent increase in population due to the previous year's displacement.

Per Capita Income for the Baton Rouge MSA has historically been greater than that of the state of Louisiana, with an exception for 2006-2011. In 2006, Louisiana experienced a significant increase in real per capita income (36.8%), primarily due to an increase in gross personal income coinciding with a decrease in population.

3.2 HISTORIC AVIATION ACTIVITY

In order to project airport-specific activity, it is useful to develop an understanding of the overall demand for aviation services. This is measured by analyzing indicators such as based aircraft, aircraft operations, and passenger enplanements. Based aircraft are those that are stored at a particular airport on a regular basis. This count of aircraft is important to an airport operator as it determines needs for aircraft hangars, services, and support facilities.

An aircraft operation is defined as one takeoff or one landing and is used to determine an airport's activity level. An enplanement is defined as one passenger boarding a commercial aircraft flight. A summary of historic aviation activity at BTR is shown in ***Table 3-1***.

Table 3-1: Historic Aviation Activity

Year	Based Aircraft	Total Operations	Total Enplanements
2004	169	100,632	**375,412**
2005*	169	111,267	**523,417**
2006	158	94,852	**534,709**
2007	164	89,408	**491,836**
2008	126	73,829	**433,135**
2009	144	58,971	**356,140**
2010	144	65,131	**390,847**
2011	134	68,128	**404,735**
2012	134	66,011	**413,873**
2013	181	71,097	**407,235**
2014	190	90,481	**394,772**
2015	206	83,520	**378,772**

Source: Baton Rouge Metropolitan Airport Statistics
*Year of Hurricane Katrina

3.2.1 Commercial Aviation Activity

The Baton Rouge Metropolitan Airport has been the site of all commercial aviation service operations in East Baton Rouge Parish since 1948 and is currently served by Delta Air Lines, American Airlines, and United Airlines. Regional carriers operate a majority (over 90%) of this service and include ExpressJet Airlines (flying for Delta, American, and United). American Eagle (flying for American), PSA Airlines (American), and SkyWest Airlines (United). These carriers provide non-stop service to Dallas/Fort Worth, Atlanta, Houston, and Charlotte. Regional jets with 50-75 seats provide the majority of BTR's service (85% in February 2016). The remaining service is provided by mainline air carrier operators. In total, the Baton Rouge Airport had an average of 166 scheduled weekly departures over the twelve-month period ending February 2016.

Enplanements at the Baton Rouge Airport experience monthly seasonality that has remained historically constant. Traffic tends to increase between March and June, with May being the busiest month, capturing nearly 10% of annual enplanements. May traffic is heightened due to college and high school graduations as well as Memorial Day weekend. During the summer, enplanements are historically lower through September. Typically, passenger levels increase during the fall through the end of the year, which may be attributable to the return of college students and football season. January and February are typically the slowest months for traffic at the Airport.

3.2.1.1 Origins and Destinations

The total number of passengers using the Airport (enplanements and deplanements) has remained relatively consistent over the 20-year period of 1995-2014, averaging 740,000/year, except during the 2005-2007 period when the Airport experienced increased demand following Hurricane Katrina. During this period, BTR provided services to accommodate passengers and cargo unable to use the New Orleans airport following the storm, which resulted in passenger enplanements reaching a record high of 523,417 in 2006. The Airport has since returned to previous levels.

Four of the top Origin & Destination (O&D) markets at Baton Rouge Metropolitan Airport are served by non-stop service. This includes: Dallas/Fort Worth, Texas (DFW), Atlanta, Georgia (ATL), Houston, Texas (IAH), and Charlotte, North Carolina (CLT). This non-stop service allows passengers to connect to a number of other markets from these hubs.

While Baton Rouge Metropolitan Airport provides service to major domestic markets through connecting hubs, it faces competition for passengers from the New Orleans Airport due to its increased non-stop flight options and destinations, and generally lower fares.

Table 3-2: Top 10 Domestic Outbound Passenger Markets, 2014 Q3

Rank	Airport	Code	Total Passengers	Avg. One-way Fare	Avg. Weekly Non-stops*
1	Dallas/Fort Worth	DFW	62,420	$164	49
2	Atlanta	ATL	39,970	$240	53
3	Houston	IAH	30,080	$282	50
4	Charlotte	CLT	23,770	$202	16
5	Washington		22,030	$242	0
	Ronald Reagan International	DCA	17,700	$242	0
	Dulles International	IAD	4,330	$242	0
6	New York		22,010	$254	0
	LaGuardia	LGA	14,440	$220	0
	Newark Liberty International	EWR	4,960	$365	0
	John F. Kennedy International	JFK	2,610	$236	0
7	Orlando	MCO	14,730	$179	0
8	Philadelphia	PHL	14,350	$213	0
9	Las Vegas	LAS	12,950	$240	0
10	Boston	BOS	12,880	$214	0
	Total—Top 10 O&D Markets		255,190		168
	Total—Top 10-20 O&D Airports		105,680		0
	Total—Top 1-20 O&D Airports		**360,870**		**168**

Note: All data is YE June 30, 2015 except for Avg. Weekly Non-stops, which is CY 2015
Source: US Department of Transportation O&D Passenger Survey; OAG Schedules

3.2.2 General Aviation Activity

Since 2005, General Aviation (GA) operations at BTR have been in flux. A decline in operations occurred from 2005-2009, a trend consistent with the Hurricanes Katrina & Rita, as well as the 2008 Recession. However, since 2010, GA activity has grown at an annual compound rate of 3.8%. ***Table 3-3*** depicts the detailed operational statistics for BTR since 2005. The large increase in GA operations in 2014 is due to the beginning of operations by Guidance Aviation, a helicopter flight school. However, at the writing of this report, continued operation of this flight school is in question, and there are indications that it may cease operations at BTR in late 2016.

Table 3-3: Operations by Type

Year	Air Carrier/ Air Taxi/ Commuter	Military	General Aviation	TOTAL
2005	29,695	7,190	74,382	**111,267**
2006	31,805	2,587	60,460	**94,852**
2007	30,954	2,562	55,892	**89,408**
2008	27,006	2,957	43,866	**73,829**
2009	22,118	1,276	35,577	**58,971**
2010	24,355	905	39,871	**65,131**
2011	24,176	769	43,183	**68,128**
2012	23,284	1,582	41,145	**66,011**
2013	23,734	1,394	45,969	**71,097**
2014	22,946	999	66,536	**90,481**
2015	20,301	964	62,255	**83,520**

Source: Baton Rouge Metropolitan Airport Statistics

3.3 UNITED STATES AVIATION INDUSTRY TRENDS

In order to make informed decisions regarding the establishment of General Aviation and commercial air service objectives, it is important to have a general understanding of the aviation industry and the forces that influence its current operating environment.

After five consecutive years of profitable operations, the nation's airlines operators are continuing to see profitable growth. The changes that the air carriers have made since the *Great Recession* in 2008, are proving to help grow record-breaking profits. Many industry professionals see these changes as providing traction towards sustainable profitability, even during future periods of uncertainty. The biggest change that U.S. passenger airlines have made is the shift in focus from increasing market share to one of boosting shareholder return on investment.

The U.S. airline industry has become more nimble and has begun to adjust its capacity to better protect itself based on the current economic trends. Even during times of economic instability and distress, the industry has found ways to increase revenue. For example, air carriers are charging fees for services that used to be included in airfare (e.g. meal service), as well as for services that were not previously available (e.g. premium boarding and fare lock fees).

With lower energy prices and the demand for air travel continuing to increase in 2015, the U.S. airlines posted record profits. U.S. airlines' profits are expected to continue to steadily increase. Across the industry, revenue passenger miles (the calculated amount of revenue per mile

traveled by paying passengers) are anticipated to grow by 2.6% a year domestically for the next 20 years. Additionally, enplanements are also predicted to grow at a rate of 2.1% a year.

3.4 FORECAST OF FUTURE DEMAND

Based on the historical activity levels and industry conditions discussed in the previous sections, the following projections of future demand and activity have been developed. The future demand forecast includes projections of passenger enplanements, commercial and general aviation operations, and future aircraft fleet mix. The basis for these projections comprises information from a variety of sources, including: FAA's Terminal Area Forecast (TAF), Official Airline Guide (OAG) Schedules, Bureau of Transportation Statistics T-100 Market Data, and Airport records.

The forecasts outlined in this section include baseline, high, and low-growth scenarios.

These scenarios are defined by the assumptions made for each forecast category. The baseline forecasts assume activity at BTR remains relatively stable and holds a slight growth. The low-growth scenario assumes hypothetical situations that would have a negative impact on the airport and growth activity. Finally, the high-growth scenario takes into account the possibility of hypothetical situations that could drastically grow the activity at the airport.

For a complete detailed list of the assumptions made for the scenarios for each forecast category, please refer to Appendix E (Forecast of Aviation Activity).

3.4.1 Projections of Passenger Enplanements

The Airport's annual passenger levels have experienced an overall decline during the past 10 years with an average yearly decrease of 2.8% during that period. Analyzing this data, in conjunction with the available industry forecasts, and taking into account the separate scenario assumptions, results in three projections of the average annual growth rate over the forecast period or compound annual growth rate (CAGR).
The CAGRs by scenario are:

- Low-growth Scenario: -0.3%
- Baseline Scenario: 0.9%
- High-growth Scenario: 2.1%

Table 3-4: Forecasted Enplanements, 2016 – 2036

Year	Low-growth Scenario CAGR: -0.3% Enplanements	Baseline Scenario CAGR: 0.9% Enplanements	High-growth Scenario CAGR: 2.1% Enplanements
2015	378,722	378,722	378,722
2021	363,193	383,279	428,546
2026	362,014	406,813	477,002
2031	358,519	430,860	528,801
2036	351,974	454,629	583,017

3.4.2 Projections of Commercial Operations and Fleet Mix

Based on the projection of future enplanements and assumptions regarding what the airline fleet mix and load factors will be throughout the forecast periods, it is possible to project the total number of commercial aircraft operations. The following sections summarize those forecasts.

3.4.2.1 Scheduled Air Carrier Operations

The change in enplanements at the Baton Rouge Metropolitan Airport will naturally affect the level of air service. This change, coupled with the industry's expectation to phase out smaller aircraft, is expected to keep the level of commercial service operations level while increasing the number of expected seats per departure. A projection of commercial operations is shown in ***Table 3-5***.

Table 3-5: Commercial Operations Projections

Year	Enplanements	Average Departure Seats	Departures[1]	Total Operations	Load Factor
Historic					
2005	523,417	N/A	14,848	29,695	75.7%
2006	534,709	N/A	15,903	31,805	72.7%
2007	491,836	N/A	15,477	30,954	74.4%
2008	433,135	N/A	13,503	27,006	72.3%
2009	356,140	N/A	11,059	22,118	71.8%
2010	390,847	49	12,178	24,355	76.3%
2011	404,735	51	12,088	24,176	77.2%
2012	413,873	50	11,642	23,284	81.6%
2013	407,235	52	11,867	23,734	78.0%
2014	394,772	55	11,473	22,946	77.3%
2015	378,772	55	10,151	20,301	77.4%
Forecast					
Low-growth Scenario:					
2021	363,193	121	9,181	18,362	77.76%
2026	362,014	124	8,677	17,355	77.72%
2031	358,519	126	8,171	16,342	76.81%
2036	351,974	129	7,648	15,296	76.43%
Baseline Scenario:					
2021	383,279	121	9,724	19,449	77.76%
2026	406,813	124	9,778	19,556	77.72%
2031	430,860	126	9,833	19,667	76.81%
2036	454,629	129	9,876	19,753	76.43%
High-growth Scenario:					
2021	428,546	131	10,266	20,531	77.76%
2026	477,002	131	10,891	21,782	77.72%
2031	528,801	132	11,530	23,060	76.81%
2036	583,017	133	12,164	24,327	76.43%

Source: Baton Rouge Statistics, ICF Analysis

[1]*Departures equal the quotient of half of the Total Operations.*

3.4.2.2 Commercial Fleet Mix and Critical Aircraft

BTR offers non-stop service to four destinations: Atlanta, Dallas/Fort Worth, Houston and Charlotte. The balance of BTR's commercial carrier service is provided by mainline jets. Regional jets with 50-75 seats provide the majority of BTR's service (85% in February 2016). In total, the Baton Rouge Airport had an average of 166 scheduled weekly departures over the twelve-month period ending February 2016.

According to the FAA's 2016-2036 Aerospace Forecast, regional jets with 50 or fewer seats will be retired from regional carrier passenger fleets by the end of the forecasted period. This is generally attributed to the fuel economy of this segment of the available fleet. Current data indicates that the regional airlines will replace these smaller aircraft with larger 70-90 seat aircraft that are more fuel efficient.

This information is important in establishing the Airport's critical aircraft for airfield design purposes. The FAA uses a classification known as the Airport Reference Code (ARC) to define the typical size of aircraft that an airport can accommodate. The ARC is defined by wingspan and approach speed of the critical aircraft using the facility.

The Airport's facilities currently meet Airport Reference Code (ARC) D-IV criteria, meaning the air carrier runways and taxiways can accommodate aircraft with approach speeds of up to 165 knots and wingspans of up to 171 feet. This design group includes aircraft sized up to a Boeing 767 and Airbus A300, and meets the forecasted demand.

3.4.3 Projections of General Aviation Activity

At the Baton Rouge Metropolitan Airport, approximately 62,000 of the 83,000 operations flown in 2015 were attributed to General Aviation traffic. This segment of the Airport's operations represents the single largest category of flight activity at the Airport. The current inventory of based aircraft is comprised of 206 based aircraft, including 127 single-engine, 36 multi-engine, 25 jet aircraft, and 18 helicopters. This section provides forecasts of General Aviation based aircraft, fleet mix, and operations.

3.4.3.1 Based Aircraft Projections

A key element for airport planning is a set of reliable estimates for based aircraft. It is one of the building blocks upon which many facility requirement decisions are made. There are a number of methods used for estimating based aircraft. The FAA provides two methodologies for forecasting based aircraft at airports – its Terminal Area Forecast and its Aerospace Forecast 2015-2035.

- FAA Terminal Area Forecasts (TAF):
  - Forecasted growth rates are estimated based on historical changes to the overall fleet and are updated annually.
- FAA Aerospace Forecast 2015-2035:

- FAA utilizes estimates derived from the General Aviation and Part 135 Activity Survey (GA Survey) as baseline figures to apply assumed growth rates to the individual categories of General Aviation aircraft – single and multi-engine aircraft, jets, ultra-lights, and rotorcraft. Again, this methodology is update annually.

In addition, growth in based aircraft can be estimated by relating it to changes and growth in various socioeconomic factors, such as employment rates, income levels, and population.

3.4.3.2 Based Aircraft Fleet Mix Forecast

According to the national GA fleet statistics presented in the *FAA's Aerospace Forecasts 2015-2035*, the majority of growth in based aircraft over the next 20 years will be in the Jet and Ultra-Light classes. These classes are expected to increase by 3.0% and 4.1%, respectively. The number of single- and multi-engine piston aircraft is expected to decrease slightly over the forecast period by 0.4% and 0.5%, respectively. ***Table 3-6*** shows these growth rates in terms of the current based aircraft fleet mix at the Airport over the course of the planning horizon.

Table 3-6: Fleet Mix Growth Rates

Year	Single Engine	Multi-Engine	Jet	Helicopters	Total
2015	127	36	25	8	**206**
Forecast					
Low-growth Scenario – CAGR: -0.8%					
2021	118	33	23	17	**191**
2026	113	32	22	16	**184**
2031	110	31	22	16	**178**
2036	107	30	21	15	**173**
Baseline Scenario – CAGR: 0.2%					
2021	125	35	25	18	**203**
2026	127	36	25	18	**206**
2031	129	37	25	18	**209**
2036	131	37	26	19	**213**
High-growth Scenario – CAGR: 1.2%					
2021	133	38	26	19	**215**
2026	141	40	28	20	**229**
2031	151	43	30	21	**245**
2036	162	46	32	23	**263**

Source: *ICF Analysis*

3.4.3.3 General Aviation Aircraft Operations

The baseline forecast shows moderate average annual growth at 0.2% across all operations. This is primarily due to an increase in mainline carrier and General Aviation operations. The low-growth scenario forecasts a modest decrease in operations due to a decrease in piston aircraft based at the Airport. Additionally, passenger operations decrease because of weakened enplanement traffic. The high-growth scenario exhibits average annual growth of 1.3% due to the addition of two daily departures across passenger and freight services, as well as stronger general aviation growth.

Table 3-7 illustrates the growth in both local and itinerant general aviation operations over the forecasted horizon. A local operation is defined as an operation performed by an aircraft that either operates in a local traffic pattern of the Airport or is known to be departing for or from flight in a local practice area within a 20-mile radius of the Airport. An itinerant operation is defined as all aircraft operations other than local.

Table 3-7: General Aviation Operations Forecast

Year	Local General Aviation	Itinerant General Aviation	Total GA
2015	25,537	37,682	**63,219**
Forecast			
Low-growth Scenario – CAGR: -0.8%			
2021	17,216	37,935	**55,151**
2026	16,752	38,253	**55,005**
2031	16,360	38,773	**55,133**
2036	16,042	39,504	**55,546**
Baseline Scenario – CAGR: 0.2%			
2021	18,280	40,218	**58,498**
2026	18,694	42,570	**61,264**
2031	19,186	45,294	**64,480**
2036	19,767	48,441	**68,208**
High-growth Scenario – CAGR: 1.3%			
2021	19,399	42,617	**62,016**
2026	20,839	47,339	**68,178**
2031	22,465	52,858	**75,323**
2036	24,311	59,329	**83,640**

Source: ICF Analysis

3.4.4 Projections of Military Activity

Various factors enter into the analysis of military aviation activity, including national defense funding, troop activation, and training frequency. The military makes no data available regarding aviation activity, and the FAA offers no forecasting guidance for this parameter. Furthermore, federal funding for aviation projects is distributed without regard for military activity.

Therefore, historic data is the only guidance for preparing forecasts of military activity, and is inherently unreliable as a predictor of future activity. For these reasons, military aviation projections at the Baton Rouge Metropolitan Airport will be kept constant at the 2015 level of 964 operations per year for the 2016-2036 forecasting period.

3.4.5 Projections of Peak Operational Demand

Peak period operations are important in the process of determining airport facility requirements. They assist in planning the size of terminal buildings, aprons, pilot lounges, holding areas for passengers, and automobile parking lots. In this analysis, three specific peak periods were used to determine what size facilities will be needed to meet forecasted demand. They are peak month, average day, and peak hour operations. Definitions for these are as follows:

- Peak Month Operations – The month during which the most aircraft operations occur. Standard forecasting practice assumes a 20 percent increase over the other months during the year.
- Average Day Operations – Aircraft activity that can be expected on a typical day. Dividing the peak month operations by 30 derives average day operations.
- Peak Hour Operations – The hour during which most activity occurs within the average day. The total peak hour operations generally equate to 20 percent of the average day total operations.

Table 3-8 shows the peak period operations for BTR during the planning period.

Table 3-8: Peak Period Operational Demand Forecasts

Year	Annual	Peak Month	Average Day	Peak Hour
2015	83,520	8,381	269	25
Forecast				
Low-growth Scenario – CAGR: -0.8%				
2021	73,513	7,377	251	24
2026	72,360	7,261	260	25
2031	71,475	7,172	271	26
2036	70,842	7,109	283	27
Baseline Scenario – CAGR: 0.2%				
2021	77,947	7,822	251	24
2026	80,820	8,110	260	25
2031	84,147	8,444	271	26
2036	87,961	8,827	283	27
High-growth Scenario – CAGR: 1.3%				
2021	83,277	8,357	268	25
2026	90,690	9,101	292	28
2031	99,113	9,946	319	30
2036	108,697	10,907	350	33

3.5 SUMMARY AND RECOMMENDATIONS

For reference, ***Tables 3-9*** through ***3-12*** depict the recommended aviation forecasts for the planning horizon. The forecasts discussed and depicted in this chapter play a vital role in planning for future demand at the Airport. They are used in the following chapters of the Master Plan to assess the capacity of existing facilities and to determine facility expansions and/or improvements that may be needed to satisfy future activity levels.

Table 3-9: Commercial Enplanements and Operations Forecast:

Year	Enplanements	Departures	Total Operations
2015	378,772	10,151	**20,301**
Low-growth Scenario			
2021	363,193	9,181	**18,362**
2026	362,014	8,677	**17,355**
2031	358,519	8,171	**16,342**
2036	351,974	7,648	**15,296**
Baseline Scenario			
2021	383,279	9,724	**19,449**
2026	406,813	9,778	**19,556**
2031	430,860	9,833	**19,667**
2036	454,629	9,876	**19,753**
High-growth Scenario			
2021	428,546	10,266	**20,531**
2026	477,002	10,891	**21,782**
2031	528,801	11,530	**23,060**
2036	583,017	12,164	**24,327**

Table 3-10: General Aviation Operations Forecast:

Year	Local General Aviation	Itinerant General Aviation	Total GA
2015	25,537	37,682	**63,219**
Forecast			
Low-growth Scenario – CAGR: -0.8%			
2021	17,216	37,935	**55,151**
2026	16,752	38,253	**55,005**
2031	16,360	38,773	**55,133**
2036	16,042	39,504	**55,546**
Baseline Scenario – CAGR: 0.2%			
2021	18,280	40,218	**58,498**
2026	18,694	42,570	**61,264**
2031	19,186	45,294	**64,480**
2036	19,767	48,441	**68,208**
High-growth Scenario – CAGR: 1.3%			
2021	19,399	42,617	**62,016**
2026	20,839	47,339	**68,178**
2031	22,465	52,858	**75,323**
2036	24,311	59,329	**83,640**

Table 3-11: Based Aircraft Forecast:

Year	Single Engine	Multi-Engine	Jet	Helicopters	Total
2015	127	36	25	8	**206**
Forecast					
Low-growth Scenario – CAGR: -0.8%					
2021	118	33	23	17	**191**
2026	113	32	22	16	**184**
2031	110	31	22	16	**178**
2036	107	30	21	15	**173**
Baseline Scenario – CAGR: 0.2%					
2021	125	35	25	18	**203**
2026	127	36	25	18	**206**
2031	129	37	25	18	**209**
2036	131	37	26	19	**213**
High-growth Scenario – CAGR: 1.2%					
2021	133	38	26	19	**215**
2026	141	40	28	20	**229**
2031	151	43	30	21	**245**
2036	162	46	32	23	**263**

Table 3-12: Peak Period Operational Demand Forecasts

Year	Annual	Peak Month	Average Day	Peak Hour
2015	83,520	8,381	269	25
Forecast				
Low-growth Scenario – CAGR: -0.8%				
2021	73,513	7,377	251	24
2026	72,360	7,261	260	25
2031	71,475	7,172	271	26
2036	70,842	7,109	283	27
Baseline Scenario – CAGR: 0.2%				
2021	77,947	7,822	251	24
2026	80,820	8,110	260	25
2031	84,147	8,444	271	26
2036	87,961	8,827	283	27
High-growth Scenario – CAGR: 1.3%				
2021	83,277	8,357	268	25
2026	90,690	9,101	292	28
2031	99,113	9,946	319	30
2036	108,697	10,907	350	33

BTR
BATON ROUGE
METROPOLITAN AIRPORT

Baton Rouge Metropolitan Airport
Master Plan Update

Chapter Four
Demand Capacity Analysis and
Facility Requirements

Kutchins & Groh

CHAPTER FOUR
Demand Capacity Analysis and Facility Requirements

This chapter contains the 20-year airfield demand/capacity analysis and facility requirements for BTR and assesses the adequacy of facilities based on future demand, as projected in *Chapter Three, Aviation Demand Forecasts* (the Forecast). The findings presented in this chapter provide the basis for the definition and evaluation of airfield and facility alternatives. The shortfall in facilities, as determined from the Forecast and the Demand Capacity Analysis, dictates the timing and degree to which facility expansion and improvements are needed in the 20-year planning horizon.

Facility requirements were calculated for the Base Year of 2015 and the forecast years of 2021, 2026, 2031 and 2036. Facility requirements for the major land uses at BTR are presented in this chapter and are as follows:

- Airfield Facilities – Runway and taxiway system and the ability of the airfield system to serve projected demand levels in terms of runway capacity and design standards.
- Passenger Terminal Facilities – Aircraft gates, terminal building, and apron frontage.
- Support/Ancillary Facilities – Cargo facilities, aircraft/airport maintenance facilities, GA/FBO facilities, and other support facilities.
- Ground Access Facilities – Access roadways, vehicle parking areas, and rental car facilities.

4.1 AIRFIELD FACILITIES

4.1.1 AIRFIELD CAPACITY

Airfield capacity is typically defined as the number of hourly or annual aircraft operations the airfield can accommodate. Airfield capacity is a function of runway configuration, aircraft fleet mix, and other factors unique to an airport. When airport demand approaches capacity, high levels of delay may occur. An acceptable level of delay for long-term planning purposes is defined as an average of four to six minutes per aircraft[1].

[1] *Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, Airport Master Plans*

4.1.1.1 Methodology

Airfield capacity is determined by a number of factors, including meteorology, airfield layout, runway use, aircraft fleet mix, runway instrumentation, arrival and departure percentages, and exit taxiway locations. The calculation of airfield capacity and delay is essential in evaluating the ability of the airfield to effectively serve future activity levels. The basis for the capacity of the existing runway system was analyzed using *FAA AC 150/5060-5, Airport Capacity and Delay*.

4.1.1.2 Existing and Forecast Demand

The Forecast approved for this study indicates sustained growth at BTR over the 20-year planning horizon. ***Table 4-1*** summarizes the findings from the Forecast used to determine these facility requirements.

Table 4-1 Base Year Forecast of Aviation Activity Summary

	Base Year 2015	2021	2026	2031	2036
Annual Operations[/1]	83,520	78,000	81,000	84,000	88,000

1/ Average annual growth rate is 0.2% (Base Case Scenario).

The aircraft fleet mix is an important factor in determining an airfield's operational capacity. To determine the capacity, aircraft are separated into categories by their approach speed and size. As the range within the aircraft size and approach speed increases, operational capacity decreases. This is due to the separation requirements for sequential aircraft approaching or departing an airport. The greater the variation in size and approach speed between two aircraft arriving or departing, the greater the amount of separation required.

Based upon the data presented in Chapter 3, the existing and forecasted aircraft fleet mix was grouped into four categories, as shown in ***Table 4-2, Fleet Mix by Category***.

Table 4-2 Fleet Mix by Category

Category	Base Year	2021	2026	2031	2036
Single Engine	61.7%	61.6%	61.8%	61.7%	61.5%
Multi-Engine	17.5%	17.2%	17.4%	17.7%	17.4%
Jet	12.1%	12.3%	12.1%	12.0%	12.2%
Helicopter	8.7%	8.9%	8.7%	8.6%	8.9%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**

4.1.1.3 Weather Conditions

Wind and weather conditions play a significant role in dictating runway orientation, navigational aid (NAVAID) requirements, and operating configurations. The key weather characteristics affecting airfield facility requirements are wind (speed and direction), cloud cover, precipitation, and visibility. Historical weather data was analyzed to assess the nature, frequency, and duration of weather conditions that influence runway use and operating procedures at BTR.

As discussed in *Chapter Two, Inventory and Existing Conditions*, ceiling, and visibility minima are grouped into two categories: Visual Meteorological Conditions (VMC) and Instrument Meteorological Conditions (IMC). VMC exists when the cloud ceiling is greater than or equal to 1,000 feet and visibility is greater than or equal to three miles. IMC conditions prevail when the visibility or cloud ceiling falls below the VMC minima. The annual occurrence of VFR (Visual Flight Rules) and IFR (Instrument Flight Rules) weather conditions is shown in ***Table 4-3***.

Table 4-3 Annual Occurrences of Weather Conditions

Category	Ceiling	Visibility	Annual Occurrence
VFR	> 1,000'	> 3 miles	84.7%
IFR	< 1,000'	< 3 miles	15.3%

Source: National Climatic Data Center (NCDC)
Hourly surface observations, 10-year averaged data (2006-2015, Station #722320)

4.1.1.4 Runway Configuration

The Airport has three active runways. Defined by compass headings, their nomenclatures are 4L-22R, 13-31 and 4R-22L, (see ***Exhibit 4-1, Existing Airfield Configuration)***.

Runway 4L-22R, the primary runway, is used most frequently for larger aircraft. Runway 13-13 is designated as a crosswind runway, and is primarily used when crosswind conditions preclude safe operations from Runway 4L-22R. Runway 4R-22L is used primarily for General Aviation operations.

4.1.1.5 Runway Exits and Taxiways

Runway exits and taxiways affect how long aircraft remain on the runway and therefore, are important components of capacity. Typically, when calculating the capacity of an airfield, it is assumed that there are sufficient full-length parallel taxiways for each runway, sufficient runway entrances and exits, and no taxiway/runway crossing problems. The capacity may be lower without these elements in place.

Runway 4L-22R, the primary runway, is served by full parallel Taxiway A and connector taxiways B, F, G, H and Q.

Runway 13-13 is served by full parallel Taxiway B and connector taxiways E, J and K.

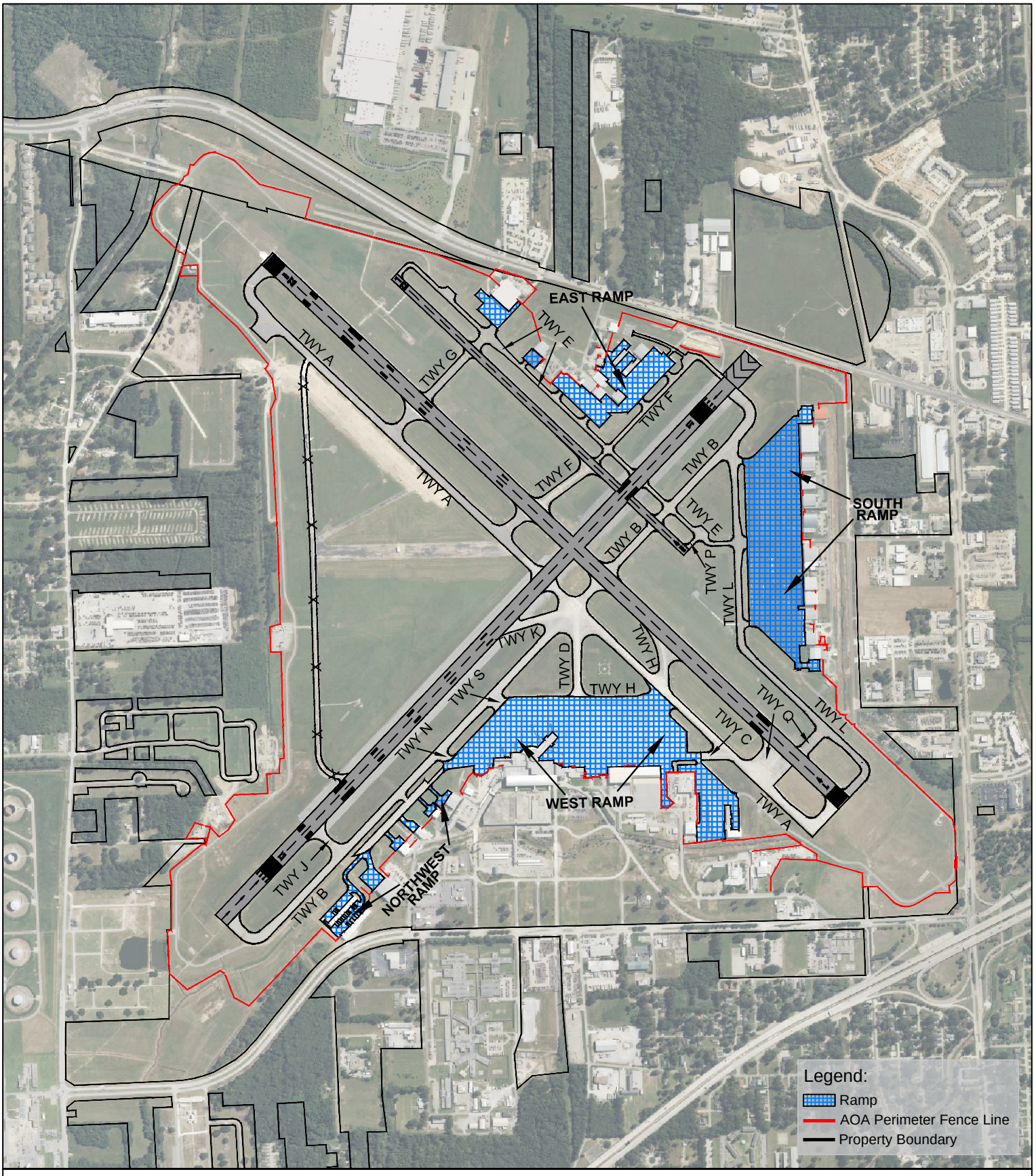
Runway 4R-22L is served by full parallel Taxiway E and connector taxiways B, F and G.

The Airport's taxiway system is shown on ***Exhibit 4-1, Existing Airfield Configuration*.**

4.1.1.6 Airfield Demand/Capacity Analysis

There are a number of different methodologies that can be used to assess runway capacity and the need for runway expansion. These may include detailed computer simulation, an analysis of hourly runway demand capacity, annual service volume (ASV), or aircraft delay.

ASV is defined as the number of annual aircraft operations that may be accommodated by the runway system at an airport. These tools are used to project future requirements of existing airfield facilities (runways, taxiways, and instrumentation). Given the operational nature of BTR and its role in both the State's as well as the National Airport System, the Airport's ASV is an appropriate measure for determining airfield capacity.



Existing Airfield Configuration

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 1200 2400
GRAPHIC SCALE IN FEET

Kutchins & Groh
consulting associates for airports

EXHIBIT 4-1

ASV is used by the FAA as a gross measure of an airport's operating capacity. It does not consider levels of delay. As actual annual operations approach the ASV of the airport, aircraft delays begin to occur. As the number of operations get closer to the ASV, the length of average delay increases to the point that capacity enhancements (e.g., additional runway exits and/or additional runways) are warranted. As a general rule, when demand at an airport reaches 60-percent of its capacity, as defined by the ASV, delays may be noticeable during the day and new airfield facilities (i.e., runways) should be planned. When airport activity reaches 80-percent of operational capacity, new airfield facilities should be constructed.

Based on FAA Advisory Circular 150/5060-5, Airport Capacity and Delay, the Annual Service Volume at BTR is estimated to be in excess of 300,000. The annual operations at BTR are not projected to grow to a level commensurate with the ASV estimate during the twenty-year planning horizon. Since this analysis indicates that there are no capacity issues, no runway capacity enhancement projects are anticipated for the planning horizon.

As discussed in Chapter 3, a 0.9% growth rate was utilized for forecasting passenger enplanements. Using this growth rate, passenger enplanements are projected to reach 767,000 in 2021; 814,000 in 2026; 862,000 in 2031; and, 909,000 by 2036. It is expected that, due to current trends in the aviation industry, airlines will adapt to increased demand by transitioning to larger gauge aircraft and increasing frequency of flights. Based on current passenger load at BTR, there is adequate capacity for the foreseeable future.

4.1.2 RUNWAY LENGTH REQUIREMENTS

The purpose of a runway length analysis is to evaluate the lengths of the current runways for adequacy, as well as to determine the lengths required for any future runways. Guidance on determining runway length is provided by airport planning manuals from the aircraft manufacturers. Runway length is generally calculated specifically for the most demanding aircraft operating at the airport on a regular basis, defined as a minimum of 500 annual operations.

Runway length requirements were calculated using the Maximum Mean Daily Temperature conditions, consisting of temperatures in the mid to high 80's[2]. At high temperatures, the density of the air decreases, causing a decrease in aircraft performance and increase in required runway length.

[2] 2014 National Weather Service, National Climatic Data Center

4.1.2.1 Existing Runway Lengths

BTR is equipped with three runways – Runway 4L-22R, which is the primary runway and Runways 13-31 and 4R-22L, which are support/crosswind runways.

Runway 4L-22R is 7,500 feet long by 150-feet wide and can accommodate multiple aircraft gear configuration wheel loads from 120,000 pounds to 300,000 pounds, as depicted in ***Table 4-4, Runway Load Capacity***.

Runway 13-31 is 7,004 long by 150 feet in width and can accommodate multiple aircraft gear configuration wheel loads from 120,000 pounds to 300,000 pounds, as shown in ***Table 4-4***.

Runway 4R-22L is 3,799 feet in length by 75 feet in width and can accommodate multiple aircraft gear configuration wheel loads from 30,000 pounds to 45,000 pounds, as depicted in ***Table 4-4***.

Table 4-4 Runway Load Capacity

Runway	Single Wheel *	Dual Wheel *	Dual Tandem Wheel *
4L-22R	120,000	170,000	300,000
13-31	120,000	170,000	300,000
4R-22L	30,000	45,000	---

* Expressed in pounds

Source: FAA's National Flight Data Center Database

The current Airport Reference Code (ARC) for the Airport has been identified as D-IV criteria—air carrier runways and taxiways can accommodate aircraft with approach speeds of up to 165 knots and wingspans of up to 171 feet. ARC Design Group IV aircraft include the Boeing 757, Boeing 767, and Airbus A300. The ARC designations are projected to meet the requirements for the 20-year planning horizon.

4.1.2.2 Take-off Runway Length Requirements

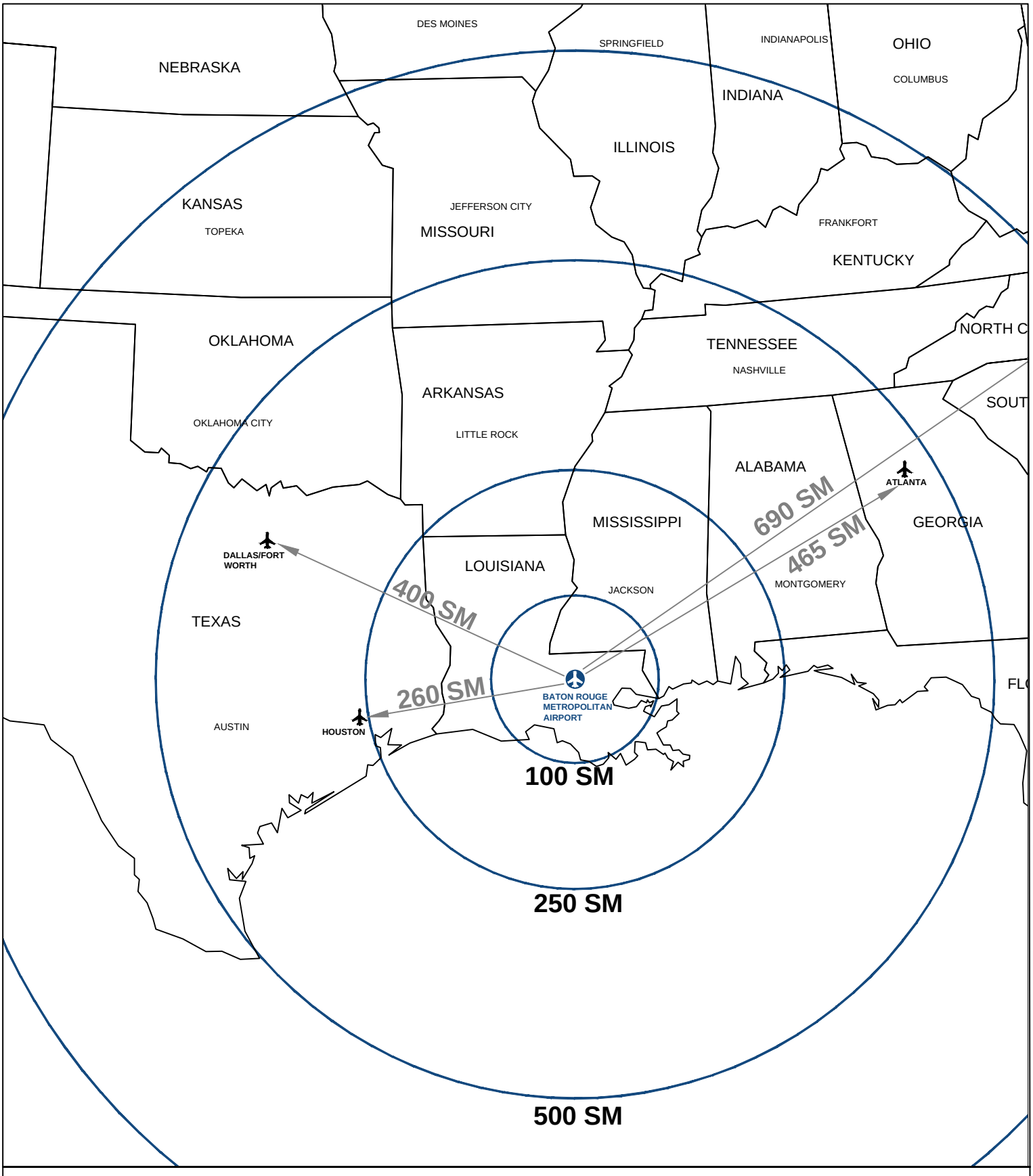
The FAA uses an additional classification known as the Airport Reference Code (ARC) to define the typical size of aircraft that an airport can accommodate. The ARC is defined by wingspan and approach speed of the critical aircraft using the facility. Airfield facilities meet Airport Reference Code (ARC) D-IV criteria—air carrier runways and taxiways can accommodate aircraft with

approach speeds of up to 165 knots and wingspans of up to 171 feet. ARC Design Group IV aircraft include the Boeing 757, Boeing 767, and Airbus A300.

Currently, four non-stop market destinations are served out of Baton Rouge – Atlanta, Charlotte, Dallas-Fort Worth, and Houston. The distance from BTR to Atlanta is approximately 465 statute miles (sm); from BTR to Charlotte is approximately 525 sm; from BTR to Dallas-Fort-Worth is approximately 400 sm; and from BTR to Houston is approximately 260 sm. For informational and reference purposes, ***Exhibit 4-2, Range Rings***, is a depiction of BTR with aircraft range rings and current destinations.

For informational purposes, ***Table 4-5*** has been included and provides the take-off length requirements and range calculations for a variety of commercial aircraft. The take-off length requirements were computed under the Maximum Mean Daily Temperature conditions with the aircraft at maximum take-off weight. The range computations assumed maximum take-off weight as well as maximum passenger payload.

The current markets served with non-stop flights utilize regional jet aircraft (e.g. the Canadair Regional Jets and Embraer Jets that are being used by the current operators). The current runway lengths support the maximum range for these aircraft, and allow unrestricted service to each of the Airport's current destinations, as well as several other major hubs should the demand present itself for new markets.



Range Rings

BTR
BATON ROUGE METROPOLITAN AIRPORT

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GRAPHIC SCALE IN FEET

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Table 4-5 Runway Take-off Length and Range

Aircraft Type (Air Carrier)	Runway Length (Feet) [1]	Range (Nautical Miles)
CRJ9	6,360	1,553
B712	5,500	1,430
A319	7,100	3,700
MD88	7,450	2,050
B738	7,874	3,060
B739	6,791	3,159
B737	7,250	2,400
E190	4,157	2,400
A320	6,857	3,000

Aircraft Type (Regional/ Commuter)	Runway Length (Feet) [1]	Range (Nautical Miles)
CR2	5,807	1,350
E145	5,840	1,080
CRJ7	5,118	1,430
CRJ1	5,249	972
E170	5,545	1,674

1 – Int'l Standard Atmosphere, Sea Level, Max. Takeoff Weight

Source: FAA and Aircraft Manufacturer's Planning Manuals; wet conditions

4.1.2.3 Landing Runway Length Requirements

Runway length requirements for landing are usually less than those required for takeoffs; therefore, it is not normally considered in the Airfield Facility requirement evaluation. The critical aircraft, the Boeing 757, has a maximum landing length of 5,000 feet, within the existing BTR runway lengths, and is not expected to be a critical factor for future airfield requirements.

Table 4-5 provides the landing length requirements, for the same aircraft identified in ***Table 4-4***, under the Maximum Mean Daily Temperature conditions, wet runway surface conditions with the aircraft at maximum landing weight. As shown in ***Table 4-6***, the range of runway lengths needed for these aircraft ranges from 3,806 feet to 5,577 feet, and consequently, current runway lengths at BTR are sufficient.

Table 4-6 Runway Landing Length Requirements

Air Carrier Aircraft	Runway Length (Feet)[2]
CRJ9	5,355
B712	4,650
A319	4,757
MD88	4,920
B738	5,348
B739	5,577
B737	4,580
E190	4,022
A320	5,020

Regional/Commuter Aircraft	Runway Length (Feet)[2]
CRJ2	4,920
E145	4,430
CRJ7	5,085
CRJ1	4,757
E170	3,806

2 – Int'l Standard Atmosphere, Sea Level, Max. Landing Weight

Source: FAA and Aircraft Manufacturer's Planning Manuals; wet conditions

4.1.2.4 Summary

As discussed in this section of the Master Plan, the runway length requirements for landing and departing aircraft have been identified. Based on this analysis, the existing runway system provides adequate length for the projected demand over the planning horizon.

4.1.3 TAXIWAY REQUIREMENTS

Taxiways are defined, paved areas established to move aircraft from one part of the Airport to another. They help reduce the time that aircraft are on the runway and allow aircraft access to other areas of the Airport. This section evaluates the existing taxiway system at BTR.

The taxiways at BTR have been divided into primary and secondary taxiways. The primary taxiways at BTR are Taxiways A, B and E. The remaining taxiways are considered to be secondary in nature and aid in aircraft movement on the airfield.

4.1.3.1 Primary Taxiways

Taxiway A is a full length, parallel taxiway serving Runway 4L-22R. The entire length is 75 feet wide. It is located 400 feet (centerline to centerline) from Runway 4L-22R. Please refer to ***Exhibit 4-1, Existing Airfield Configuration.***

Taxiway B is a full length, parallel taxiway serving Runway 13-31. It is 75 feet wide and located 400 feet from the Runway 13 end and 350 feet from the Runway 31 end.

Taxiway E is a full length, parallel taxiway serving Runway 4R-22L. It is 40 feet in width and connects the runway to the east portion of the airfield and the GA area to the south.

4.1.3.2 Secondary Taxiways

The western portion of the airfield is served by secondary Taxiways C, D, J, K, L and Q, which service Runways 4L-22R and 13-31 to and from the Terminal. The eastern part of the airfield is served by secondary Taxiways F, G, and L, which provide access to and from Runway 4R-22L.

4.1.3.3 Summary

The taxiway analysis identifies the following taxiway needs:

- Construct new full parallel taxiway for Runway 4L-22R east of the runway;
- Construct new connector taxiway from South Ramp to Taxiway L;
- Relocate Taxiway G to meet current FAA Design Standards to reduce runway incursions;
- Demolish Taxiway D to remove 'hot spots' from the airfield;
- Relocate Taxiway K to connect Taxiway B to Runway 13; and
- Remove Taxiway E when Runway 4R-22L is decommissioned and demolished.

4.1.4 INSTRUMENTATION AND LIGHTING

Instrumentation, lighting, and other navigational aids assist pilots in maneuvering their aircraft safely and efficiently under various weather conditions. This section evaluates the existing instrumentation and lighting systems at BTR.

4.1.4.1 Instrumentation

A variety of NAVAIDS are currently in place in and around BTR, including: an Instrument Landing System (ILS); a Special Authorization (SA) CAT II Instrument Landing System (ILS); Global Position Satellite (GPS) equipment; a Non-Directional Beacon; Very High Frequency Omni-Directional Range Beacon (VORTAC); Tactical Air Navigation System (TACAN) Beacon; and Airport Surveillance Radar (ASR).

NAVAIDS used for arriving aircraft provide course guidance and, in some instances, vertical guidance to the runway threshold. This allows aircraft to land at BTR in various meteorological conditions. BTR operates under Instrument Flight Rules (IFR) 15.3% of the time (see ***Exhibit 2-2, Airport Windrose Data***), and aircraft also use the instrument approaches during Visual Flight Rules (VFR) for additional guidance.

The type of instrumentation available for a runway determines the minimum ceiling and visibility, or "lowest minimums," during which landings can occur while under IFR. At BTR, instrument approach systems are provided per ***Table 4-7***.

Currently, Runway 4L-22R is the primary runway for BTR operations. It can accommodate aircraft landings during inclement weather conditions due to its Special Authorization (SA) CAT II Instrument Landing System (ILS).

Runway 13-13 is designated as a crosswind runway, and is primarily used when crosswind conditions preclude safe operations from Runway 4L-22R. Runway 4R-22L is used primarily for General Aviation operations.

To preserve the airfield's capabilities under all conditions, any future runway upgrades should include state-of-the-art instrumentation capability on both runway ends.

Table 4-7 BTR Instrument Approach Procedures & Best Available Minimums

Runway	Approach Procedure	Category	Approach Minimums
13	ILS/LOC	S-ILS 13	1/2 Mile
		S-LOC 13	1/2 Mile
		Circling	1 Mile
	RNAV (GPS)	LPV	1/2 Mile
		LNAV/VNAV	7/8 Mile
		LNAV	1/2 Mile
		Circling	1 Mile
22R	ILS or LOC/DME	S-ILS 22R	1/2 Mile
		S-LOC 22R	1/2 Mile
		Circling	1 Mile
	SA CAT I & II	S-ILS 22R (SA CAT I)	1400 RVR 150 DH
		S-ILS 22R (SA CAT II)	1200 RVR 100 DH
	RNAV (GPS)	LPV	1/2 Mile
		LNAV/VNAV	7/8 Mile
		LNAV	1/2 Mile
		Circling	1 Mile
	VOR/DME	S-22R	1 1/4 Mile
		Circling	1 Mile
4L	RNAV (GPS)	LPV	7/8 Mile
		LNAV/VNAV	2 Miles
		LNAV	1 Mile
		Circling	1 Mile
	VOR	S-4L	1 Mile
		Circling	1 Mile
31	RNAV (GPS)	LPV	3/4 Mile
		LNAV/VNAV	3/4 Mile
		LNAV	3/4 Mile
		Circling	1 Mile
	NDB	S-31	3/4 Mile
		Circling	1 Mile

1/: The minimums presented herein are the best available for each identified approach. For a complete list of all available procedures, please consult the FAA's Terminal Procedure Publications available electronically at http://www.avn.faa.gov/index.asp?xml=aeronav/applications.

4.1.4.2 Approach Lighting Systems

The Airport Lighting System aids in the transition from the instrument approach to touch-down, the most critical point of landing. The Airport Lighting System aids for all runways at BTR are shown in ***Table 4.8***.

Table 4.8 BTR Airport Lighting Systems

Runway	Lighting
4L	HIRL, PAPI (P4L)
22R	HIRL, MALSR, PAPI (P4L)
13	HIRL, MALSR
31	HIRL, MALS, VASI (V4L)
4R	MIRL, PAPI (P2L)
22L	MIRL, PAPI (P2L)

HIRL: High Intensity Runway Lights
MIRL: Medium Intensity Runway Lights
MALSR: Medium Intensity Approach Lighting System w/ Runway Alignment Indicator
PAPI: Precision Approach Path Indicator

The current Airport Lighting System aids are adequate for the Airport's approach capabilities. Any future improvements to the airfield will be accomplished to meet all design standards for Airport Lighting Systems.

4.1.5 FAA RUNWAY DESIGN STANDARDS

The FAA provides airport geometric design standards and recommendations to ensure the safety, efficiency, economy, and longevity of airports. Safety design standards were analyzed specifically for the design group aircraft that utilize BTR.

The Airport Reference Code (ARC) for Runways 4L-22R and 13-31 is D-IV. The ARC for Runway 4R-22L is B-II.

Based on this design group, the key safety design standards examined for each runway were the Runway Safety Area (RSA), Object Free Area (OFA), Runway Protection Zones (RPZ), and Precision Obstacle Free Zones (POFZ).

4.1.5.1 Runway Safety Area (RSA)

The Runway Safety Area (RSA) is defined as the surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. The dimensions of the RSAs for each runway are determined by the approach and the type/size of the design aircraft, or the ARC.

The ARC for Runway 44L-22R is D-IV and the requirement for its RSA is 9,100 feet (beyond departure end) x 500' feet. The ARC for Runway 13-31 is D-IV and the requirement for its RSA is 8,604 feet (beyond departure end) x 500' feet. The ARC for Runway 4R-22L is B-II and the requirement for its RSA is 4,399 feet (beyond departure end) x 150 feet. The RSAs are aligned on the runway centerline.

Runway 13-31 has displaced thresholds and declared distances to alleviate airspace concerns and deficiencies in the Runway Safety Area off both runway ends. In its current location, a portion of Plank Road prevents the utilization of the runway to its full capacity and the Airport desires to reclaim the runway length lost due to these deficiencies. Among the issues to be addressed in this Master Plan is the realignment of Plank Road.

With the realignment of Plank Road, the landing threshold can be shifted to the end of the pavement, adding 315 feet to Runway 31 operations. This will also allow for the elimination of the current engineered materials arresting system (EMAS), designed to prevent on aircraft overrun resulting in minimal aircraft damage, and provide the Airport with full-sized standard Runway Safety Area. The realignment of Plank Road will be addressed in more detail in Chapter Five, Development Alternatives.

4.1.5.2 Runway Object Free Area (ROFA)

The Runway Object Free Area (OFA) is defined as the area on the ground centered over the runway centerline provided to enhance the safety of aircraft operations by having the area free of objects. The length of the OFA for Runway 4L-22R is 9,100 feet beyond the end of the runway with a width of 800 feet. The dimensions for the OFA for Runway 13-31 are 8,604 feet beyond the end of the runway with a width of 800 feet. The length of the OFA for Runway 4R-22L is 4,399 feet beyond the end of the runway with a width of 500 feet.

The OFAs for the existing runways at BTR meet FAA requirements.

4.1.5.3 Runway Protection Zone (RPZ)

The Runway Protection Zone (RPZ) is defined as an area off the runway end to enhance the protection of people and property on the ground. The RPZ begins 200 feet from the end of the runway and is trapezoidal in shape. The RPZ should be kept clear of all incompatible objects, activities, and land uses.

Figure 4-1 depicts the shape of an RPZ and ***Table 4.9*** provides standard dimensions for RPZs.

Figure 4-1: Runway Protection Zone

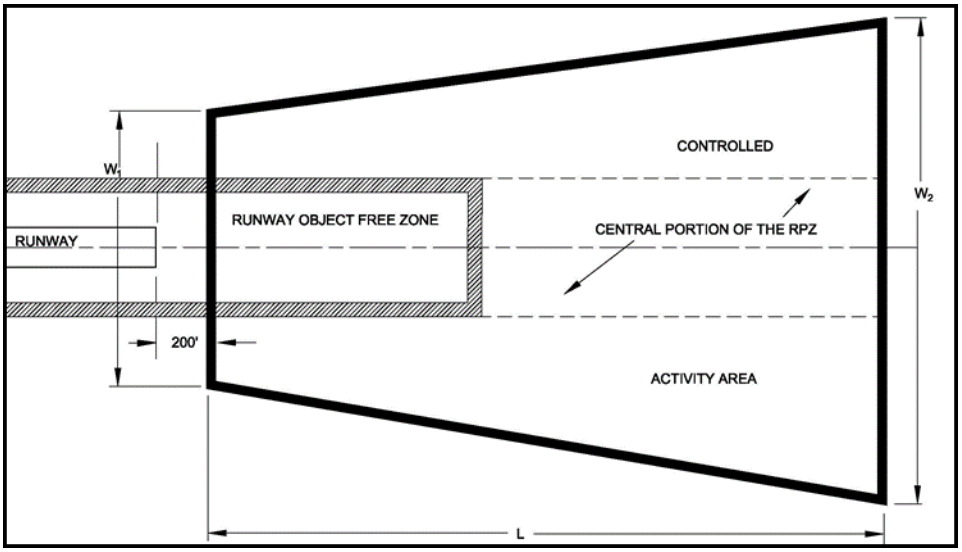


Table 4-9: Runway Protection Zone Dimensions:

Approach Visibility Minimums/1	Facilities Expected To Serve	Length (L) Feet	Inner Width (W_1) Feet	Outer Width (W_2) Feet	RPZ Acres
Visual and Not Lower Than 1-Mile	Small Aircraft Exclusively	1,000	250	450	8,035
Visual and Not Lower Than 1-Mile	Aircraft Approach Categories A & B	1,000	500	700	13,770
Visual and Not Lower Than 1-Mile	Aircraft Approach Categories C & D	1,700	500	1,010	29,465
Not Lower Than ¾ Mile	All Aircraft	1,700	1,000	1,510	48,978
Lower Than ¾ Mile	All Aircraft	2,500	1,000	1,750	78,914

1/ The RPZ dimensional standards are the runway end with the specified approach visibility minimums. The departure RPZ dimensional standards are equal to or less than the approach RPZ dimensional standards. When a RPZ begins other than 200 feet beyond the runway end, separate approach and departure RPZs should be provided.

Source: FAA Advisory Circular 150/5300-13, Airport Design

4.1.5.4 Precision Obstacle Free Zone (POFZ)

The Precision Obstacle Free Zone (POFZ) is defined as the volume of airspace above an area beginning at the runway threshold and centered on the extended runway centerline, 200-feet long by 800-feet wide. The purpose of the POFZ is to provide additional safety measures by keeping obstacles free and clear from the runway environment during the following operational conditions:

- Vertically Guided Approach
- Reported ceiling below 250 feet and/or visibility less than three-fourths statute mile (or RVR below 4,000 feet)
- An aircraft on final approach within two miles of the runway threshold

The POFZs for the existing runways at BTR meet FAA requirements.

4.1.6 SUMMARY OF AIRFIELD REQUIREMENTS

Based on the projected demand over the 20-year planning horizon, the Airport meets all current airfield design standards.

4.2 SUPPORT/ANCILLARY FACILITY REQUIREMENTS

Support facilities are vital to the overall operability and maintenance of BTR. It is important to identify needs for these facilities to maintain flexibility with other airfield improvements as the airport expands in the future. Support facilities that warrant consideration include:

- Airport Traffic Control Tower (ATCT);
- Airport Maintenance;
- General Aviation/Fixed Based Operator;
- Other Facilities; and
- Utilities.

4.2.1 AIRPORT TRAFFIC CONTROL TOWER (ATCT)

BTR has an Airport Traffic Control Tower (ATCT), owned by the Airport and leased and occupied by the FAA. It is an Instrument Flight Rules (IFR), radar facility. The ATCT is sited on a 300-foot by 300-foot lot, and it lies to the south of the South Ramp. The facility was commissioned in 1981, and it includes a 59-space employee parking lot. The current hours of operation are from 5:00 a.m. to 12:00 p.m.

The building size is 5,320 square feet. The tower height is 94’-6” to the top of the parapet. The cab area totals 484 square feet.

4.2.2 AIRPORT MAINTENANCE

Airport Maintenance facilities provide a sheltered environment for repair and storage of Airport service vehicles and equipment. These facilities help protect valuable airport property from moisture, debris, and other environmental contaminants.

There are currently four structures dedicated to airport maintenance, all located south of the Terminal Building on Jimmy Wedell Drive. The building area totals 15,000 square feet and accommodates offices, bulk storage ad equipment storage. For planning purposes, it is

recommended that the Airport preserve space for maintenance facilities based on the projected average annual growth in aircraft operations over the planning period.

4.2.3 GENERAL AVIATION/FIXED BASE OPERATORS

A Fixed Based Operator (FBO) provides support services to General Aviation (GA) operators at airports, such as fuel, hangars, aircraft maintenance and rental, aircraft tie-downs, and flight instruction. FBOs are usually located on airport property and operate under a lease agreement with the airport owner.

The Airport is served by three Fixed Based Operators (FBO): Signature Aviation, Executive Aviation, and BTR Jet. Signature Aviation provides tie-down services, limited hangar space, fuel, catering, pilot/passenger lounge, and on-site rental cars. Executive Aviation provides fuel, maintenance, charters, car rentals, limousine service and a lounge/lobby. BTR Jet provides maintenance services, fuel, concierge services, on-site rental cars and catering. Current projections for demand match up well with existing facilities.

4.2.4 FUEL STORAGE REQUIREMENTS

Fuel is provided on the airfield in several manners; the FBOs (Signature Aviation, Executive Aviation, and Baton Rouge Jet) provide fueling services to their customers. Each FBO has its own on-site tanks and provides both Jet A and AvGas. Signature Aviation is currently BTR's only fuel supplier for air carriers. It supplies both Jet A and AvGas.

Based on projected growth over the next 20 years, the current level of fuel storage appears to be adequate to serve the anticipated demands over the course of the planning horizon.

4.2.5 OTHER FACILITIES

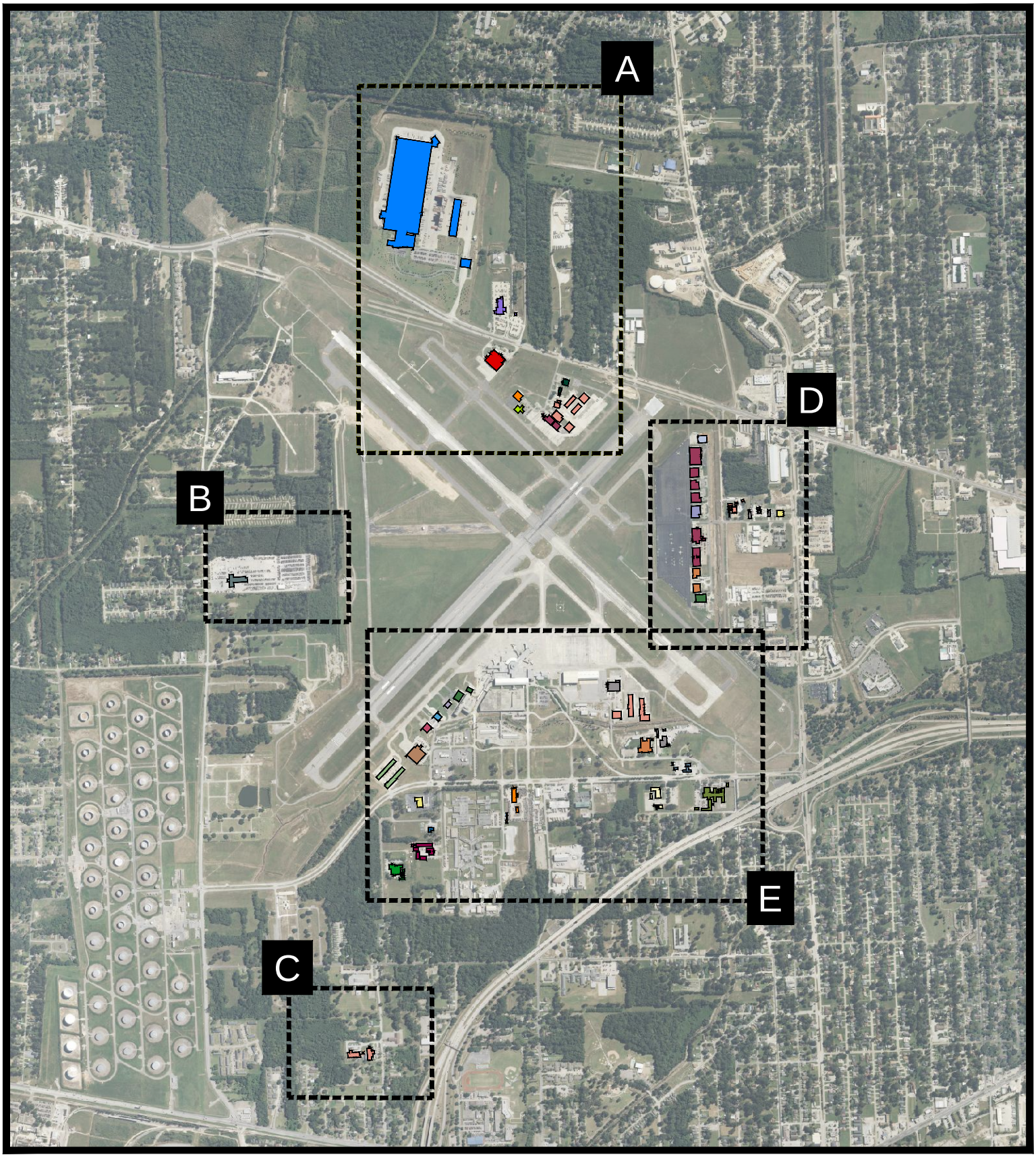
Airside users located on the Airport include the following (please refer to ***Exhibits 4-3*** through ***4-3E, Other Airside & Landside Users*** for locations of each*)*:

- BTR Police Hangar (Government use);
- TSA Facility (Government use);
- Civil Air Patrol (Government use);
- Vulcan Aero;
- Dow Chemical;
- Airport Hangar, LLC;

- 337 LLC;
- PAI Aero;
- Baton Rouge Jet Center;
- W Resources;
- Averett Aircraft;
- Executive Aviation;
- Express Jet, and
- Signature Aviation.

Landside commercial users located on the Airport include the following (please refer to ***Exhibit 4-3*** through ***4-3E, Other Airside & Landside Users*** for locations of each*)*:

- East Baton Rouge Parish Animal Control (Government use);
- East Baton Rouge Sheriff's Office (Government use);
- East Baton Rouge Juvenile Detention (Government use);
- Mosquito and Rodent Control;
- Loomis Armored US;
- Legal Air, LLC;
- Baton Rouge Community College;
- Head & Enquist;
- East Baton Rouge Parish Prison;
- A Affordable Bail Bonds;
- Anderson Bail Bonds;
- Roadrunner Towing;
- Total Delivery & Logistics
- Hesselbein Tire;
- Trafalgar Management (Texaco);
- Roco Rescue;
- All Star Chevrolet;
- Coca-Cola; and
- ABC Auto Auction.



Other Airside and Landside Users

Map Key

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 1400 2800
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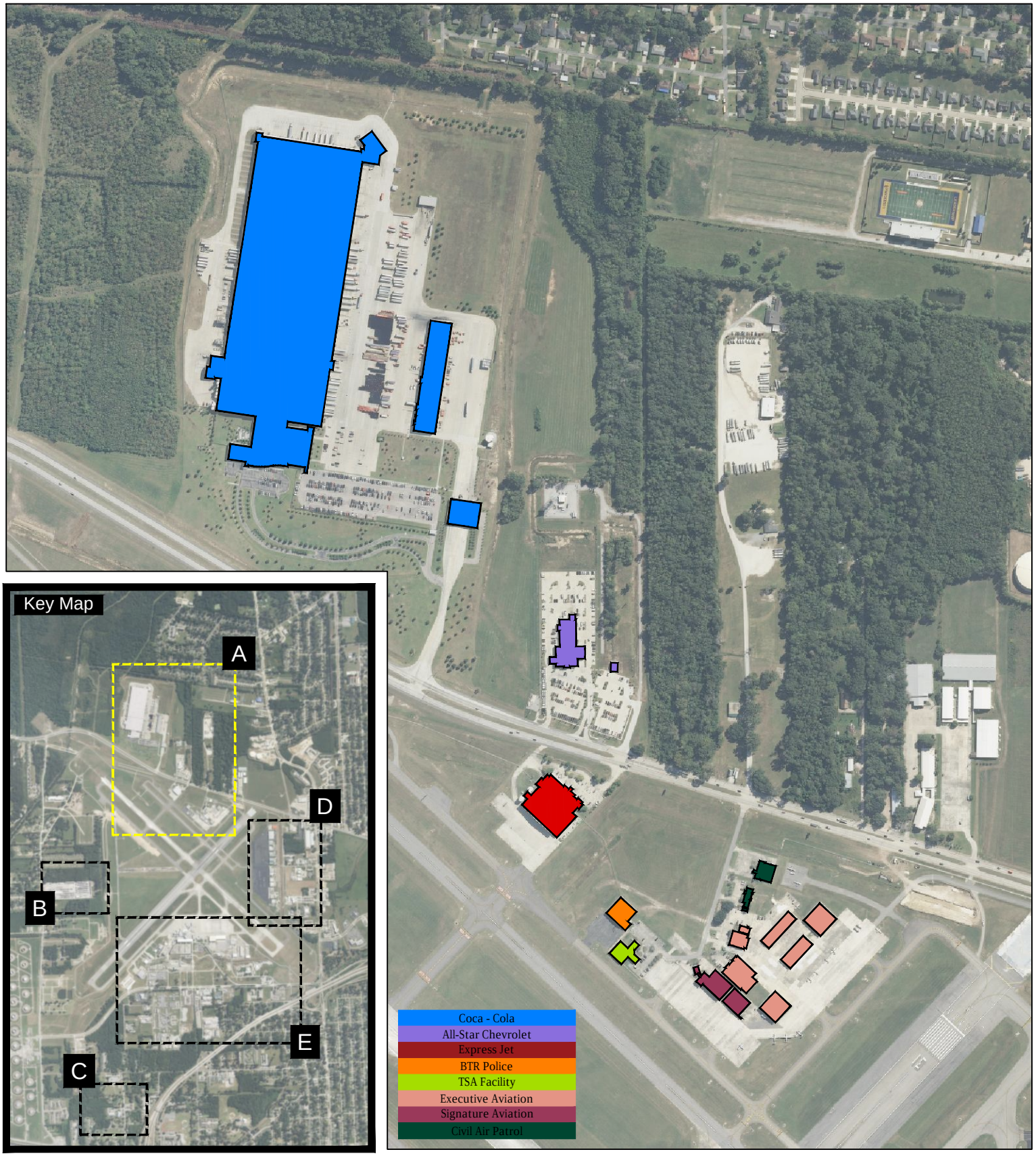
EXHIBIT 4-3



Other Airside and Landside Users

Area 'A'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
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EXHIBIT 4-3A

Other Airside and Landside Users

Area 'B'

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0 600 1200
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EXHIBIT 4-3B

Other Airside and Landside Users

Area 'C'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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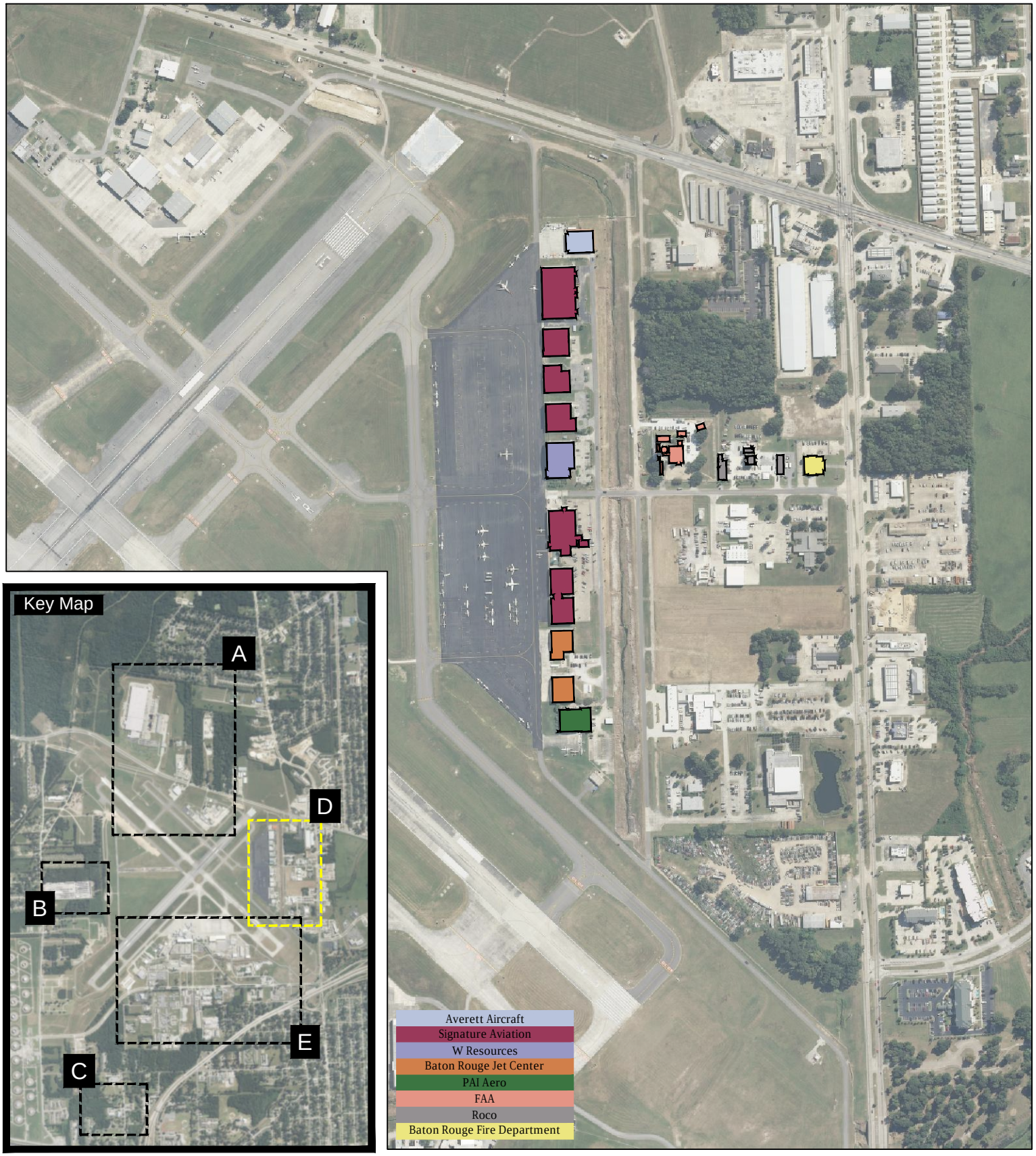
EXHIBIT 4-3C



Other Airside and Landside Users

Area 'D'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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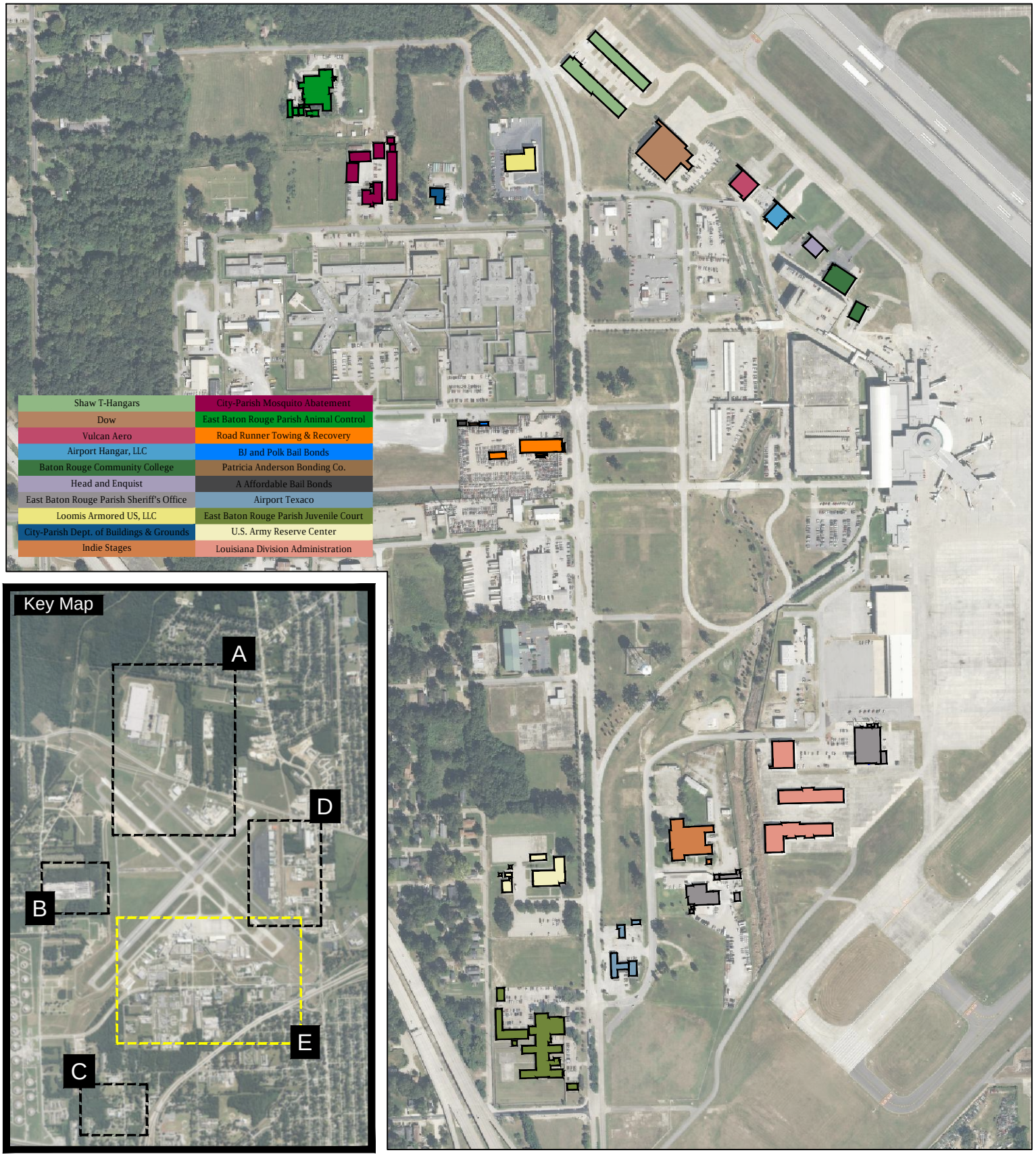
EXHIBIT 4-3D



Other Airside and Landside Users

Area 'E'

BTR
BATON ROUGE METROPOLITAN AIRPORT

0 600 1200
GRAPHIC SCALE IN FEET

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EXHIBIT 4-3E

4.2.6 UTILITIES

It is essential to determine if the existing utilities are able to accommodate the current and future demands of the Airport facilities. Through discussions with the Airport operator, it appears that there is adequate capacity to respond to current and anticipated demand on existing infrastructure. As facilities are developed on the Airport, utilities may have to be added as necessary to accommodate the new demand. The facility requirements for utilities are more appropriately defined by the specific nature and timing of the development and should be determined during the respective planning and design phases.

The utilities listed below identify the existing service providers:

4.2.6.1 Sanitary Sewer

The City of Baton Rouge and East Baton Rouge Parish currently collect and treat all sanitary sewage produced on Airport property.

4.2.6.2 Water Service

Potable water is provided to all tenants in and around the Airport by the Baton Rouge Water Company.

4.2.6.3 Natural Gas

Natural gas is supplied to BTR and Airport tenants by the Entergy Corporation of Louisiana.

4.2.6.4 Electrical Service

Power is supplied to the Airport and the adjacent community by Entergy Corporation of Louisiana.

4.2.6.5 Telecommunication Service

Telephone service is provided to BTR and Airport tenants by AT&T.

4.3 GROUND ACCESS FACILITY REQUIREMENTS

This section describes requirements for roadways and vehicle parking areas.

4.3.1 ROADWAYS

Airport roadway facilities typically are designed for the peak-hour traffic on the design day, allowing for the splitting and recirculation of traffic within the various areas of the Airport property. For the purposes of the Master Plan, roadway planning is typically conceptual and follows basic demand/capacity calculations comparing the peak hour demand of a roadway segment with per-lane capacity, which is based on general guidelines for airport roadway networks. Detailed access roadway requirements and concepts are developed following the completion of detailed analyses and modeling.

As the concept development and evaluation process commences, the focus of roadway development will be one of identifying access requirements that support facility development in areas where access does not yet exist or is known to be inadequate for the proposed development. The evaluation of the roadways within any of the concepts considered the following:

- Must be cost effective from a construction, operation, and maintenance perspective;
- Should cause minimal impact to adjacent communities including, but not limited to, right-of-way impacts, construction impacts, and access/circulation impacts; and
- Provide for future expansion of the roadway system by state and local transportation agencies to accommodate roadways proposed in the region's long-range transportation plans.

The general Airport boundary is defined along the north by Blount Road; along the east by Plank Road; along the south by T.B. Herndon Avenue and Harding boulevard; and on the west side by Veteran's Memorial Boulevard. Vehicular access to the Terminal comes via Veterans Memorial Boulevard. Captain Ryan Drive provides access to the Terminal from Veteran's Memorial Boulevard.

Among the issues to be addressed in this Master Plan is the realignment of Plank Road. Runway 13-31 has displaced thresholds and declared distances to alleviate airspace concerns and deficiencies in the Runway Protection Zone off both runway ends. In its current location, a

portion of Plank Road prevents the utilization of the runway to its full capacity and the Airport desires to reclaim the runway length lost due to these deficiencies.

With the realignment of Plank Road, the landing threshold can be shifted to the end of the pavement, adding 315 feet to Runway 31 operations. This will also allow for the elimination of the current engineered materials arresting system (EMAS), designed to prevent on aircraft overrun resulting in minimal aircraft damage, and provide the Airport with full-sized standard Runway Safety Area. The realignment of Plank Road will be addressed in more detail in Chapter Five, Development Alternatives.

4.3.2 PARKING

Parking for visitors and tenants at the Airport is located within or adjacent to each leasehold at the Airport. The quantity of parking spaces provided for tenants on Airport property is adequate for the foreseeable future, but plans for any new or expanded facilities must include an evaluation of the parking requirements to ensure that ample space is allotted for vehicles.

4.3.2.1 Terminal Building Parking

The Terminal Building parking garage and surface lot lie to the immediate west of the Terminal, and are accessed via Veterans Memorial Boulevard and Captain Ryan Drive. Long-term parking for approximately 860 vehicles is provided in a surface lot to the west of the garage. Short-term parking for approximately 1,150 vehicles is provided within the garage. Airport employee parking is provided in 2 different lots, one south of the parking garage and another on 5th floor of the Rental Car Garage, with a total of approximately 450 spaces.

The quantity of parking spaces at the Terminal facility is sufficient to meet the 20 year planning horizon.

It should be noted that any future expansion of the Terminal facility (which may include: ticketing lobbies and airline offices; passenger boarding lounges and airline gates; and, baggage claim facilities) will require additional evaluation to determine the quantity of parking that may be required to support this development.

4.3.2.2 FBO Parking

Signature Aviation, Executive Aviation, and Baton Rouge Jet (BTR Jet) are the Airport's Fixed Base Operators. Each of the FBO sites can accommodate approximately 20 to 25 vehicles in their respective parking lots. Any new FBOs, General Aviation developments and Corporate Hangar facilities illustrated on the concept plans will be provided with adequate parking for staff and customers within or adjacent to each leasehold.

4.4 SUMMARY OF FACILITY REQUIREMENTS

Tables 4.10 – 4.14 summarize the recommended future facility requirements over the planning horizon.

Table 4.10 Summary of Facility Requirements for Short-Term (2017 – 2021)

FACILITIES	FACILITY REQUIREMENTS
AIRFIELD:	
Runways	Runway 4L-22R Rehabilitation
	Runways 13-31/4-22 Intersection Repairs
Runway Length Requirements	Runway 31 Threshold Recovery/Relocation
Taxiways	South Ramp Connector Taxiway
	Midfield Taxiway Intersection Realignment
Navigational Aids	Antenna Farm Relocation
Airfield Lighting	Taxilane MARC Lighting
Runway Design Standards	N/A
Aircraft Parking Aprons	South Ramp Pavement Rehabilitation
	North GA Development Apron
Hangar Facilities	N/A
Infrastructure	North GA Development
SUPPORT/ANCILLARY:	
Airport Traffic Control Tower	ATCT Redevelopment
Utilities	North GA Development Infrastructure
Roadways	Perimeter Road
	Plank Road Relocation
Parking	Cell Phone Lot
Landside Support	Airport Hotel
Other	Removal of Old ASR Equipment

Table 4.11 Summary of Facility Requirements for Mid-Term (2022 – 2026)

AIRFIELD:	
Runways	Decommission-Removal of Runway 4R-22L
	Runway 13-31 Rehabilitation
Runway Length Requirements	N/A
Taxiways	Decommission-Removal of Taxiway E
	Runway 4L-22R Parallel Taxiway
	North GA Development Taxiway
Navigational Aids	N/A
Airfield Lighting	Airfield Lighting Rehabilitation
Runway Design Standards	N/A
Aircraft Parking Aprons	North GA Development Apron
Hangar Facilities	North GA Development Hangar
Infrastructure	Airfield Drainage Improvements

SUPPORT/ANCILLARY:	
Airport Traffic Control Tower	N/A
Utilities	N/A
Roadways	Perimeter Road
Parking	N/A
Landside Support	Warehouse/Industrial Development
Other	Airport Maintenance Relocation

Table 4.12 – Summary of Facility Requirements for Long-Term (2027 – 2036)

FACILITIES	FACILITY REQUIREMENTS
AIRFIELD:	
Runways	Runway 4L-22R Rehabilitation
Runway Length Requirements	N/A
Taxiways	Taxiway A Rehabilitation
	Taxiway B Rehabilitation
	North GA Development
Navigational Aids	N/A
Airfield Lighting	N/A
Runway Design Standards	N/A
Aircraft Parking Aprons	East GA Development Apron
	North GA Development
	Air Carrier Ramp Rehabilitation
Hangar Facilities	North GA Development
Infrastructure	North GA Development

SUPPORT/ANCILLARY:	
Airport Traffic Control Tower	N/A
Utilities	N/A
Roadways	N/A
Parking	N/A
Landside Support	North GA Development
	East GA Development
	Warehouse/Industrial Development
Other	Fuel Farm & Support Facilities

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Baton Rouge Metropolitan Airport
Master Plan Update

Chapter Five
Development Alternatives

Kutchins & Groh

CHAPTER FIVE
Development Alternatives

This chapter describes the alternatives analysis conducted to accommodate BTR's projected requirements for future airfield, terminal, landside and other support facilities. The assessment of alternatives began with a range of airfield and terminal options, and subsequent selection of a preferred airfield layout. Final concepts for proposed development areas were determined by analyzing all of these aspects. This resulted in the identification of the preferred airfield, terminal, and ancillary development concepts as addressed in *Chapter Six, Preferred Development Plan.*

5.1 AIRFIELD ALTERNATIVES ANALYSIS

The primary components making up the airfield are the runways, taxiways, and aprons, commonly referred to as the aircraft movement area. These facilities are the focal point of the airfield alternatives analysis and are typically the most land intensive elements of an airport. The characteristics and configurations of various airfield development concepts directly impact the placement of other components that make up an airport community. The primary goal of the airfield concepts analysis process is to identify the runway and taxiway configuration that best meets the airfield capacity requirements through the planning horizon.

The previous Master Plan Update, completed in 2007, resulted in recommendations for the following improvements:

- Extension of Runway 4L-22R and parallel taxiways and the relocation of the perimeter road and associated navigational aids (project has been implemented);
- Realignment of the southeast end of Taxiway B to meet ADG IV taxiway/runway separation standards and widening of Taxiway L to meet ADG V standards (project has been implemented);
- Extension of Taxiway F to the Runway 13 end to meet ADG IV standards, realignment of Taxiway F near the intersection with Runway 4L-22R in line with the new parallel taxiway, and widening of Taxiway F from Runway 4R-22L to the Runway 13 end to meet ADG IV standard (project has been implemented);
- Realignment and/or removal of Taxiways B, C, D and K to minimize pilot confusion;

- Development of a Surface Movement Guidance and Control System (SMGCS) plan and installation of required lighting for CAT III operations on Runway 22R;
- Expansion of the Passenger Terminal security lobby and ticketing/check-in facilities to accommodate forecast demand (project has been implemented);
- Expansion of public parking garage to accommodate forecast demand;
- Relocation of the employee parking lot to accommodate future development of an on-Airport hotel;
- Construction of additional air cargo facilities and an access roadway south of the Passenger Terminal building to accommodate forecast cargo activity (project has been implemented);
- Construction of additional General Aviation conventional hangars, T-hangars, and apron to accommodate forecast demand for aircraft parking;
- Relocation of airfield maintenance facilities and State aviation facilities to accommodate the expansion of the cargo area (relocation of State aviation facilities has been implemented);
- Construction of an on-Airport hotel to accommodate future passenger demand;
- Acquisition of property within road rights-of-way that are to be demolished to accommodate expansion; and
- Recovery of the Runway 4L threshold so that it coincides with the start of the runway pavement (project has been implemented).

5.1.1 INITIAL AIRFIELD CONCEPTS

The analysis of airfield facility requirements is discussed in *Chapter Four, Demand Capacity Analysis, and Facility Requirements.* The airfield concepts presented in this chapter explore a range of options to expand the airfield within and beyond the planning horizon.

A total of three airfield concepts have been identified with the intent of accommodating future demand throughout the planning horizon. The following proposed elements are common to all of the airfield concepts:

- Extension of Taxiway F to provide a full, parallel taxiway for Runway 13-31 (currently underway);
- New parallel taxiway for Runway 4L-22R on the east side of the airfield;

- Realignment/removal of Taxiways D and K to eliminate "hot spots" on the airfield – a "hot spot" is defined by the FAA as location on an airport movement area with a history of potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary;
- Improvements to the existing FAA Airport Traffic Control Tower (ATCT) complex;
- Realignment of portions of the perimeter road to eliminate connections to movement areas;
- Relocation of the City/Parish Mosquito Abatement Facility to the northwest section of the airfield (currently underway);
- Relocation of the Antenna Farm to a site immediately north of the North Access Road;
- Removal of old Approach Surveillance Radar (ASR) equipment;
- Construction of a new North Access Road to serve new General Aviation/Corporate Aviation development (currently underway);
- Construction of a New Multiplex (proposed emergency response facility) in the northeast quadrant of the airfield (currently underway);
- Construction of a new General Aviation development on the east side of the airfield;
- Relocation of Airport Field Maintenance;
- Development of a Warehouse/Industrial development on the west side of the airfield, southwest of the Passenger Terminal Building; and
- Construction of a new hotel near the Passenger Terminal Building.

All of the concepts were qualitatively evaluated based upon the vision and mission of the Airport and the goals and objectives of the Master Plan. The descriptions of the airfield concepts follow and are depicted in ***Exhibits 5-1*** through ***5-3*****.**

5.1.1.1 Concept One

The main airfield components of Concept One, as shown in ***Exhibit 5-1***, are:

- Extension of Taxiway F to provide a full, parallel taxiway for Runway 13-31;
- Extension of existing parallel taxiway for Runway 4-22R on the east side of the airfield;

- Realignment/removal of Taxiways D and K to eliminate “hot spots” (areas with a history of potential risk of collision or runway incursion); and
- Improvements to the existing FAA Airport Traffic Control Tower (ATCT) complex.

This concept also includes:

- The relocation of Plank Road to: recover the Runway 31 threshold, establish a full standard Runway Safety Area, establish control of Runway Protection Zone (RPZ), remove Plank road from the RPZ, and eliminate the engineered materials arresting system (EMAS);
- Construction of a new General Aviation development on the east side of the airfield;
- Realignment of portions of the perimeter road to eliminate connections to movement areas;
- Relocation of the City/Parish Mosquito Abatement Facility to the northwest section of the airfield;
- Relocation of the Antenna Farm to a site immediately north of the North Access Road;
- Removal of the old Approach Surveillance Radar (ASR) equipment;
- Construction of a new North Access Road to serve new General Aviation/Corporate Aviation development;
- Construction of a New Multiplex (proposed emergency response facility) in northeast quadrant of the airfield;
- Relocation of Airport Field Maintenance to nearby Canada Street, west of the Airport Terminal complex, on the current site of the East Baton Rouge Parish Animal Control Center;
- Development of a Warehouse/Industrial development on the west side of the airfield, southwest of the Passenger Terminal Building; and
- Construction of a new hotel near the Passenger Terminal Building.

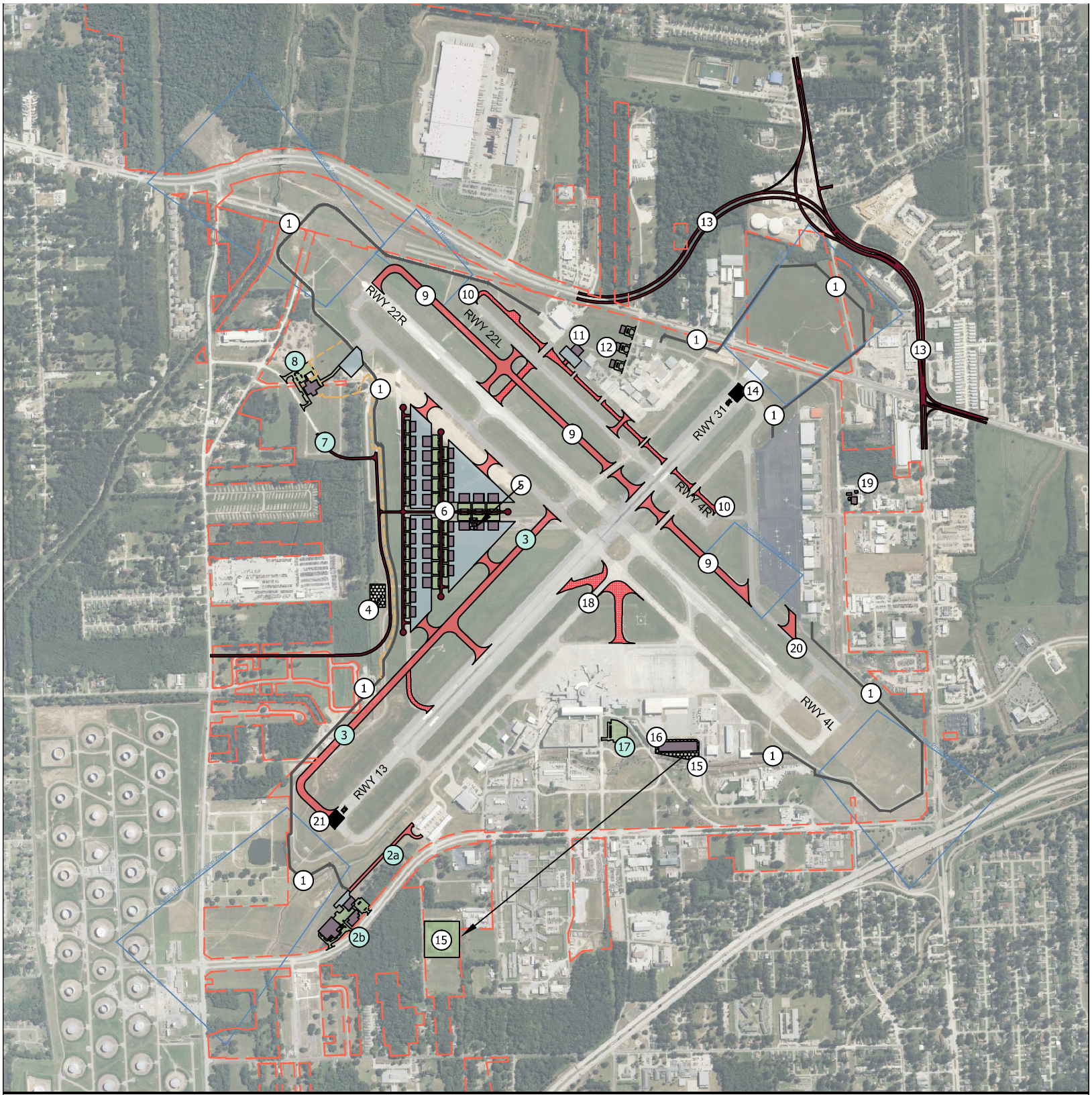
The advantages and disadvantages of Concept One are described in the following paragraphs.

Advantages:

- The reconfiguration of the airfield will bring it into compliance with current Federal Aviation Administration (FAA) standards, while also improving safety and efficiency;
- The full parallel taxiways will provide better access on the airfield and provide operational benefits by reducing delays;
- The additional sections of the Perimeter Road in all quadrants of the airfield will help to keep vehicles out of aircraft movement areas, improving airfield safety by minimizing potential runway incursions;
- With the relocation of Taxiways D and K, "hot spots" (areas with a history of potential risk of collision or runway incursion) are eliminated from the airfield;
- The relocation of Plank Road allows the landing threshold for Runway 13-31 to be shifted to the end of the pavement (removing the displaced threshold), adding 315 feet of usable pavement to Runway 31 operations. This will also allow for the elimination of the current engineered materials arresting system (EMAS) and will remove incompatible land uses in the Runway Protection Zone (RPZ); and
- All proposed development for General Aviation, Non-Aviation, and Warehouse/Industrial uses lies on previously disturbed property and no significant environmental issues are anticipated.

Disadvantages:

- The Airport will continue to have costly maintenance issues for existing Runway 4R-22L, which is underutilized;
- Land acquisition is required in association with the Plank Road relocation;
- An Environmental Assessment is required with the relocation of Plank Road; and
- The antenna Farm must be relocated to accommodate new GA development on the north side of the airfield.



Legend

- Runway/Taxiway Pavement
- Runway/Taxiway Pavement (To Be Removed)
- Ramp/Apron Pavement
- Wildlife/Security Fence
- Building
- Parking Lot
- Aviation Development
- Non-Aviation Development
- Existing Airport Road
- Airport Road (Landside)
- Airport Road (Airside)
- Land Acquisition
- Airport Property Line
- (#) Project Currently in Design/Construction

Key

1. Perimeter Road
2a. City-Parish Mosquito Abatement Facility - Taxilane
2b. City-Parish Mosquito Abatement Facility - Facilities/Parking
3. Taxiway 'F' Extension
4. Antenna Farm Relocation
5. Removal of Old ASR Equipment
6. Future General Aviation Development - North
7. North Access Road (Aviation Business Park)
8. Multiplex Development
9. Future Runway 4L/22R Parallel Taxiway
10. Decommissioning/Removal of Taxiway 'E'
11. Future General Aviation Development - North
12. Future Non-Aviation Development - East
13. Future Plank Road Relocation
14. Future Runway 31 Threshold Relocation/Recovery
15. Airport Maintenance Relocation
16. Future Warehouse/Industrial Development
17. Future Hotel Development
18. Future Taxiway Intersection Re-Alignment
19. FAA ATCT Redevelopment
20. Future South Ramp Connector Taxiway
21. Future Runway 13 Threshold Relocation/Recovery

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Exhibit 5-1: Option 1

5.1.1.2 Concept Two

Concept Two is shown on ***Exhibit 5-2***. The main airfield components of Concept Two are:

- Extension of Taxiway F to provide a full, parallel taxiway for Runway 13-31;
- New parallel taxiway for Runway 4-22R on the east side of the airfield;
- Realignment/removal of Taxiway K to eliminate "hot spots" (areas with a history of potential risk of collision or runway incursion); and
- Improvements to the existing FAA Airport Traffic Control Tower (ATCT) complex.

This concept also includes:

- Construction of a new General Aviation development on the east side of the airfield;
- Realignment of portions of the perimeter road to eliminate connections to movement areas;
- Relocation of the City/Parish Mosquito Abatement Facility to the northwest section of the airfield;
- Relocation of the Antenna Farm to a site immediately north of the North Access Road;
- Removal of the old Approach Surveillance Radar (ASR) equipment;
- Construction of a new North Access Road to serve new General Aviation/Corporate Aviation development;
- New Multiplex (proposed emergency response facility) in northeast quadrant of the airfield;
- Relocation of Airport Field Maintenance to nearby Canada Street, west of the Airport Terminal complex, on the current site of the East Baton Rouge Parish Animal Control Center;
- Warehouse/Industrial development on the west side of the airfield, southwest of the Passenger Terminal Building; and
- Construction of a new hotel near the Passenger Terminal Building.

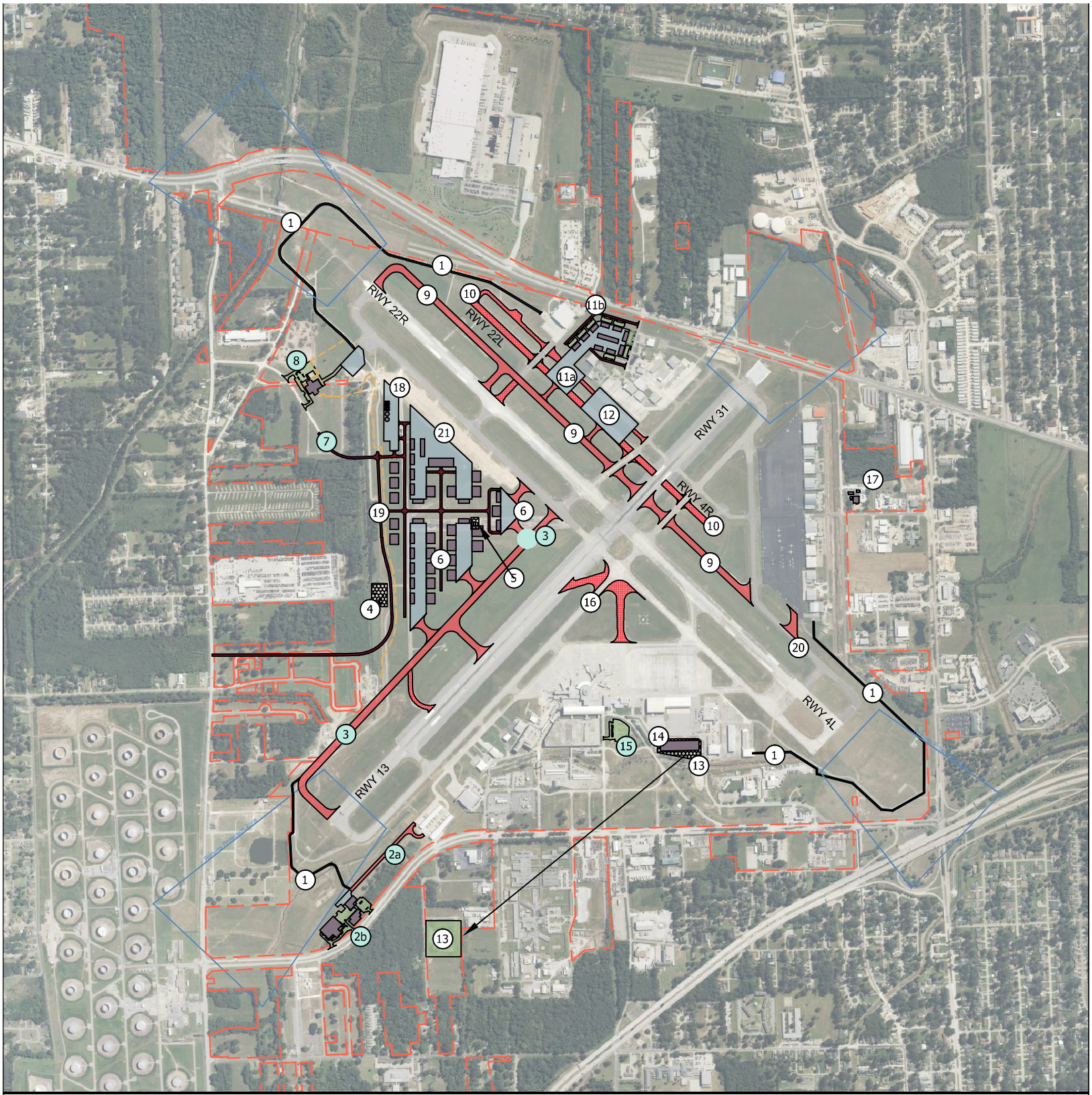
The advantages and disadvantages of Concept Two described in the following paragraphs.

Advantages:

- The reconfiguration of the airfield will bring it into compliance with current Federal Aviation Administration (FAA) standards, while also improving safety and efficiency;
- The full parallel taxiways will provide better access on the airfield and provide operational benefits by reducing delays;
- The additional sections of the Perimeter Road will help to keep vehicles out of aircraft movement areas;
- With the relocation of Taxiway K, the "hot spot" (area with a history of potential risk of collision or runway incursion) situation is alleviated, but not completely resolved since Taxiway D will remain; and
- All proposed development for General Aviation, Non-Aviation, and Warehouse/Industrial uses lies on previously disturbed property and no significant environmental issues are anticipated.

Disadvantages:

- By leaving Plank Road in its current location, the EMAS at the end of Runway 31 cannot be removed, it may not be possible to reclaim the 300-plus feet of usable runway length, and the Airport must continue with the costly maintenance program required for its upkeep;
- Incompatible land uses within the Runway 31 RPZ will continue to be a problem;
- The Airport will continue to have costly maintenance issues for existing Runway 4R-22L, which is underutilized; and
- The antenna Farm must be relocated to accommodate new GA development on the north side of the airfield.



Legend

- Runway/Taxiway Pavement
- Runway/Taxiway Pavement (To Be Removed)
- Ramp/Apron Pavement
- Wildlife/Security Fence
- Building
- Parking Lot
- Aviation Development
- Non-Aviation Development
- Existing Airport Road
- Airport Road (Landside)
- Airport Road (Airside)
- Land Acquisition
- Airport Property Line
- (#) Project Currently in Design/Construction

Key

(1) Perimeter Road
(2a) City-Parish Mosquito Abatement Facility - Taxilane
(2b) City-Parish Mosquito Abatement Facility - Facilities/Parking
(3) Taxiway 'F' Extension
(4) Antenna Farm Relocation
(5) Removal of Old ASR Equipment
(6) Future General Aviation Development - North
(7) North Access Road (Aviation Business Park)
(8) Multiplex Development
(9) Future Runway 4L/22R Parallel Taxiway
(10) Decommissioning/Removal of Taxiway 'E'
(11a) Future East General Aviation Development - Apron Expansion
(11b) Future East General Aviation Development - Hangars/Support Facilities
(12) Future General Aviation Apron Expansion - East (Phase II)
(13) Airport Maintenance Relocation
(14) Future Warehouse/Industrial Development
(15) Future Hotel Development
(16) Future Taxiway Intersection Re-Alignment
(17) FAA ATCT Redevelopment
(18) Future Fuel Farm and Support Facilities
(19) Future Mixed-Use Development - North
(20) Future South Ramp Connector Taxiway
(21) Future FBO Development - North

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Exhibit 5-2: Option 2

5.1.1.3 Concept Three

Concept Three (***Exhibit 5-3***) includes the following main airfield components:

- Extension of Taxiway F to provide a full, parallel taxiway for Runway 13-31;
- Extension of existing parallel taxiway for Runway 4-22R on the east side of the airfield;
- Decommissioning and demolition of Runway 4L-22R;
- Realignment/removal of Taxiways D and K to eliminate "hot spots" (airport movement areas with a history of potential risk of collision or runway incursion); and
- Improvements to the existing FAA Airport Traffic Control Tower (ATCT) complex.

Concept Three also provides:

- The relocation of Plank Road to shift the landing threshold for Runway 13-31 to the end of the pavement, adding 315 feet to Runway 31 operations;
- Elimination of the current engineered materials arresting system (EMAS);
- Construction of a new General Aviation development on the east side of the airfield;
- Realignment of parts of the perimeter road to eliminate connections to movement areas;
- Relocation of the City/Parish Mosquito Abatement Facility to the northwest section of the airfield;
- Relocation of the Antenna Farm to a site immediately north of the North Access Road;
- Removal of old Approach Surveillance Radar (ASR) equipment;
- Construction of a new North Access Road to serve new General Aviation/Corporate Aviation development;
- Construction of a New Multiplex (proposed emergency response facility) in northeast quadrant of the airfield;
- Relocation of Airport Field Maintenance to nearby Canada Street, west of the Airport Terminal complex, on the site of the East Baton Rouge Parish Animal Control Center;
- Warehouse/Industrial development on the west side of the airfield, southwest of the Passenger Terminal Building; and
- Construction of a new hotel near the Passenger Terminal Building.

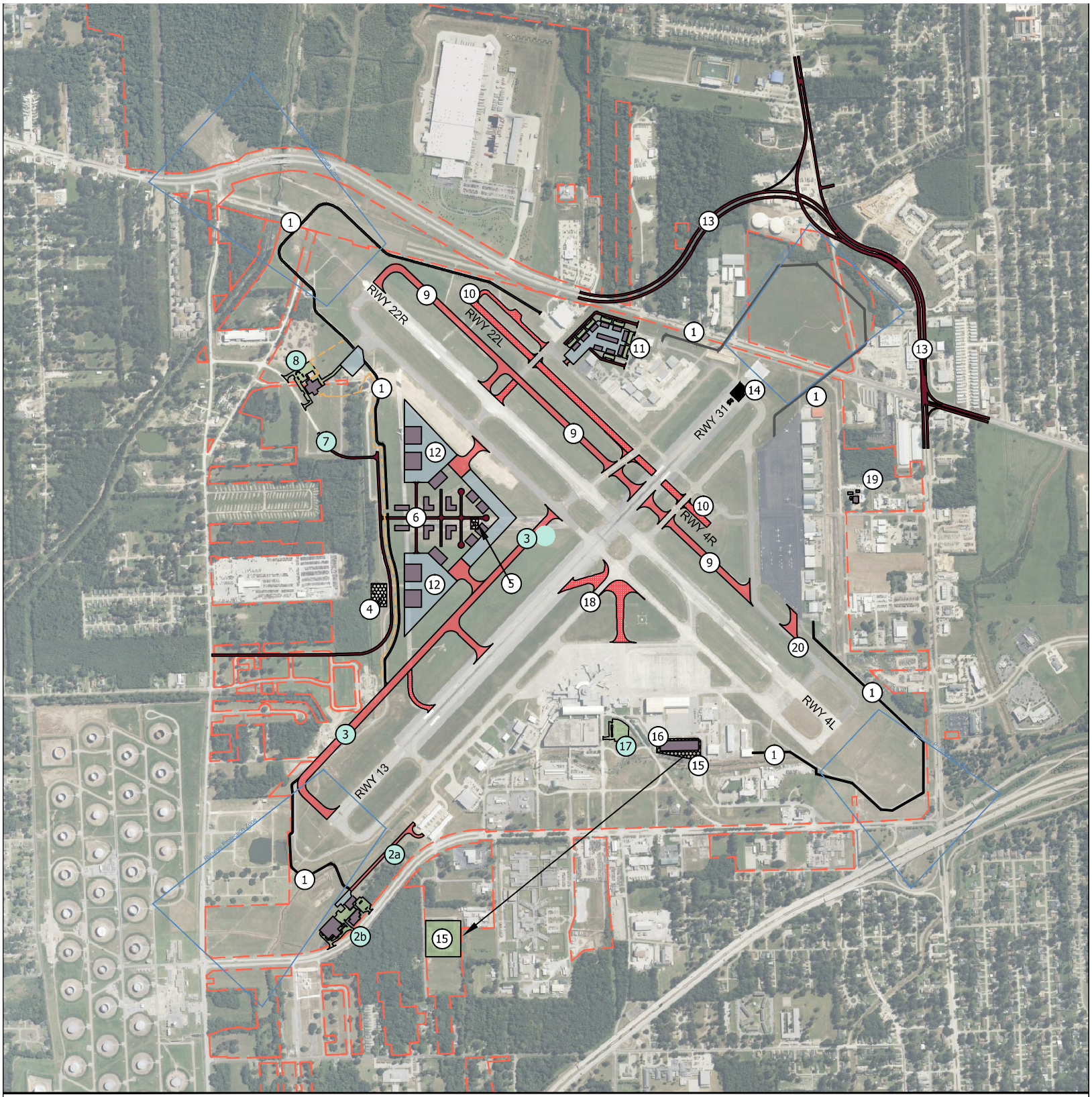
The advantages and disadvantages of Concept Three are:

Advantages:

- The reconfiguration of the airfield will bring it into compliance with current Federal Aviation Administration (FAA) standards, while also improving safety and efficiency;
- The Airport will no longer have to provide costly maintenance for existing Runway 4L-22R after it is decommissioned and demolished;
- The relocation of Plank Road allows the landing threshold for Runway 13-31 to be shifted to the end of the pavement, adding 315 feet of usable pavement for Runway 31 operations. This will also allow for the elimination of the current engineered materials arresting system (EMAS);
- Incompatible land uses will be removed from the RPZ;
- The full parallel taxiways will provide better access on the airfield and provide operational benefits by reducing delays;
- The new sections of the Perimeter Road will help to keep vehicles out of aircraft movement areas;
- With the relocation of Taxiways D and K, the "hot spots" (areas with a history of potential risk of collision or runway incursion) are eliminated from the airfield; and
- All proposed development for General Aviation, Non-Aviation, and Warehouse/Industrial uses lies on previously disturbed property and no significant environmental issues are anticipated.

Disadvantages:

- Land acquisition is required in association with the Plank Road relocation;
- An Environmental Assessment will be required with the relocation of Plank Road; and
- The antenna Farm must be relocated to accommodate new GA development on the north side of the airfield.



Legend

- Runway/Taxiway Pavement
- Runway/Taxiway Pavement (To Be Removed)
- Ramp/Apron Pavement
- Wildlife/Security Fence
- Building
- Parking Lot
- Aviation Development
- Non-Aviation Development
- Existing Airport Road
- Airport Road (Landside)
- Airport Road (Airside)
- Land Acquisition
- Airport Property Line
- (#) Project Currently in Design/Construction

Key

1. Perimeter Road
2a. City-Parish Mosquito Abatement Facility - Taxilane
2b. City-Parish Mosquito Abatement Facility - Facilities/Parking
3. Taxiway 'F' Extension
4. Antenna Farm Relocation
5. Removal of Old ASR Equipment
6. Future General Aviation Development - North
7. North Access Road (Aviation Business Park)
8. Multiplex Development
9. Future Runway 4L/22R Parallel Taxiway
10. Decommissioning/Removal of Taxiway of Runway 4R/22L
11. Future East General Aviation Development
12. Future Corporate Aviation Development - North
13. Future Plank Road Relocation
14. Future Runway 31 Threshold Relocation/Recovery
15. Airport Maintenance Relocation
16. Future Warehouse/Industrial Development
17. Future Hotel Development
18. Future Taxiway Intersection Re-Alignment
19. FAA ATCT Redevelopment
20. Future South Ramp Connector Taxiway

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Exhibit 5-3: Option 3

5.1.2 PREFERRED AIRFIELD CONCEPT

Based on the results of the Airfield Evaluation, components of all three alternatives were incorporated into the preferred concept (***Exhibit 5-4***) to achieve the stated planning objectives. Operational efficiency, overall costs, environmental considerations, long-term land use, and regional planning priorities were factors considered during the development of the Master Plan.

5.1.2.1 Operational Efficiency

Concepts One and Three provide multiple safety and efficiency improvements to the airfield. Both eliminate the need for crossings of active runways by providing fully parallel taxiways, and eliminate direct access from the apron to the runways. They also allow for the elimination of the EMAS and alleviate the "hot spot" (airport movement area with a history of potential risk of collision or runway incursion) created by the current locations of Taxiways D and K. Both also remove incompatible land uses from the Runway 13 Runway Protection Zone.

5.1.2.2 Financial Planning/Cost

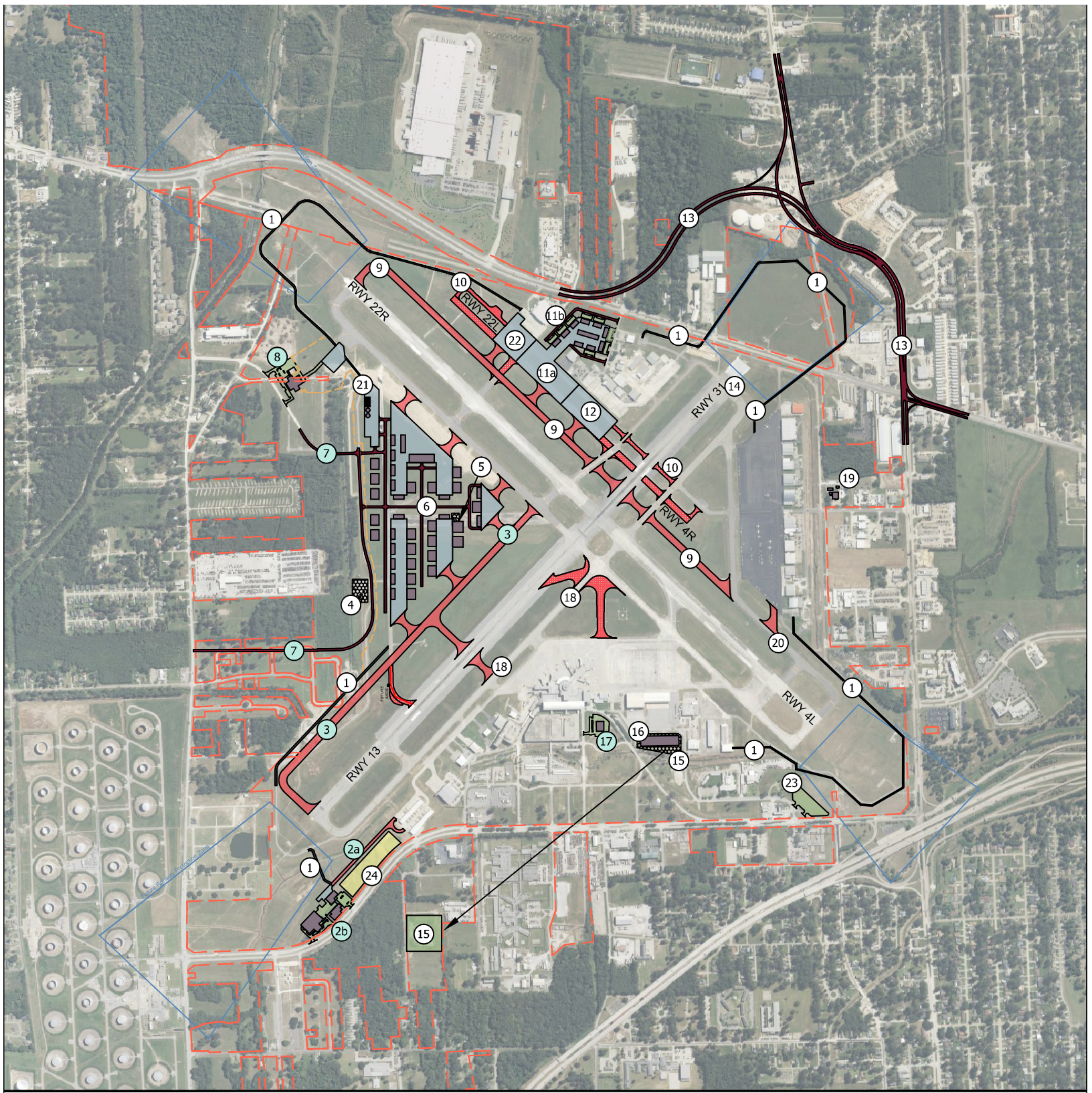
The Capital Program aligns the proposed projects, to be phased over the planning horizon, with available local, state, and federal funding. The proposed taxiway and connecter improvements are high priority safety and standards projects that should compete well for available funding.

5.1.2.3 Environmental Planning Considerations

With any proposed aviation development, environmental analysis and planning is required. The FAA dictates what level of environmental document must be prepared (e.g., documented Categorical Exclusion, Environmental Assessment, or Environmental Impact Statement). With the exception of the Plank Road relocation, all of the proposed development associated with Concepts One and Three is located within the existing Airport boundary, and most of it lies on previously disturbed property.

5.1.2.4 Land Use

The Airport is bounded along the north by industrial and residential areas. Commercial, residential and park lands lie to the south. Along the eastern boundary industrial, commercial and residential areas are found, while residential and institutional areas lie to the west. Although there are no incompatible land uses as of the publication of the most recent noise exposure map, among the issues to be addressed in this Master Plan is the realignment of Plank Road.



Legend

- Runway/Taxiway Pavement
- Runway/Taxiway Pavement (To Be Removed)
- Ramp/Apron Pavement
- Wildlife/Security Fence
- Building
- Parking Lot
- Aviation Development
- Non-Aviation Development
- Existing Airport Road
- Airport Road (Landside)
- Airport Road (Airside)
- Land Acquisition
- Airport Property Line
- (#) Project Currently in Design/Construction

Key

1. Perimeter Road
2a. City-Parish Mosquito Abatement Facility - Taxilane
2b. City-Parish Mosquito Abatement Facility - Facilities/Parking
3. Taxiway 'F' Extension
4. Antenna Farm Relocation
5. Removal of Old ASR Equipment
6. Future General Aviation Development - North
7. North Access Road (Aviation Business Park)
8. Multiplex Development
9. Future Runway 4L/22R Parallel Taxiway
10. Decommissioning/Removal of Taxiway 'E' and Runway 4R/22L
11a. Future East General Aviation Development - Apron Expansion
11b. Future East General Aviation Development - Hangars/Support Facilities
12. Future General Aviation Apron Expansion - East (Phase II)
13. Future Plank Road Relocation
14. Future Runway 31 Threshold Relocation/Recovery
15. Airport Maintenance Relocation
16. Future Warehouse/Industrial Development
17. Future Hotel Development
18. Future Taxiway Intersection Re-Alignment
19. FAA ATCT Redevelopment
20. Future South Ramp Connector Taxiway
21. Future Fuel Farm and Support Facilities
22. Future East Apron Expansion (Phase III)
23. Future Cell Phone Lot
24. Future GA/Corporate Hangar Development

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Exhibit 5-4: Recommended Development Plan

There are currently roadways and structures within the Runway Safety Area and Runway Protection Zone for Runway 31, which have required a displaced threshold and declared distance to alleviate airspace concerns and deficiencies in the Runway Safety Area. In its current location, a portion of Plank Road prevents the utilization of the runway to its full capacity and the Airport desires to reclaim the runway length lost due to these deficiencies.

It is estimated that the road relocation would necessitate the acquisition of 14 parcels, totaling approximately 27 acres of mostly undeveloped land, although several homes and small businesses would be affected.

5.1.2.5 Regional Priorities

The Recommended Development Plan is consistent with the region's growth and does not interfere with any regional development priorities as the physical infrastructure for the proposed development remains within the existing Airport boundary.

5.1.2.6 Master Plan Objectives

The proposed improvements illustrated on the Preferred Development Plan are expected to bring long-term economic growth to the Airport. In addition to the many airfield operational and safety benefits that the Recommended Development Plan will create, it is also expected to foster opportunities for airport-related development and enhance economic development in the surrounding region.

5.1.3 OPERATIONAL REFINEMENTS

The Recommended Development Plan was further refined to improve upon and obtain maximum operational efficiency for the airfield. The following airfield improvements are recommended:

- Recovery of the Runway 31 threshold as a result of the relocation of Plank Road;
- Establishment of a full standard Runway Safety Area (RSA) as a result of the relocation of Plank Road;
- Ownership/Control of Runway Protection Zone (RPZ) as a result of the relocation of Plank Road;
- Removal of Plank road from the RPZ as a result of the relocation of Plank Road;
- Elimination of the Engineered Materials Arresting System (EMAS);

- Completion of Taxiway F Extension to provide a full, parallel taxiway for Runway 13-31;
- New parallel taxiway for Runway 4-22R on the east side of the airfield;
- Removal of Taxiways D and K to eliminate "hot spots" on the airfield;
- South Ramp Connector Taxiway; and
- Relocation of the existing FAA Airport Traffic Control Tower (ATCT).

5.2 SUPPORT/ANCILLARY FACILITY ALTERNATIVE ANALYSIS

The primary objective for developing Support/Ancillary Facility Concepts is to accommodate future growth as projected in *Aviation Demand Forecasts and the Demand Capacity Analysis/Facility Requirements, Chapters Three and Four*. Additionally, these concepts are included in the planning process to accommodate existing and anticipated needs of the Airport.

5.2.1 SUPPORT/ANCILLARY FACILITY DEVELOPMENT CONCEPTS

Upon the selection of the preferred airfield development concept, Support/Ancillary Facilities should be placed throughout the airport to enhance operational efficiencies, accommodate projected growth, and to relocate facilities that are impacted by the implementation of the preferred plan. The following Support/Ancillary Actions are recommended:

5.2.1.1 Airport Traffic Control Tower

The Airport Traffic Control Tower (ATCT) is owned and occupied by the FAA. It is an Instrument Flight Rules (IFR) radar facility. The ATCT is sited on a 300-foot by 300-foot lot, and it lies to the south of the South Ramp. The facility was commissioned in 1981, and it includes a 59-space employee parking lot. The current hours of operation are from 5:00 a.m. to 12:00 p.m.

Improvements to the ATCT Complex including construction of a new tower structure are recommended on the south side of the airfield, adjacent to the existing tower. The new facility will be designed after a line-of-sight study is complete. The study will determine the appropriate height in order to alleviate line-of-sight issues on the north and east ends of the airfield.

5.2.1.2 Airport Maintenance

There are currently four structures dedicated to airport maintenance, all located south of the Terminal Building on Jimmy Wedell Drive. The building area totals 15,000 square feet and accommodates offices, bulk storage, and equipment storage.

A new airport maintenance facility is recommended in order to provide more space for necessary operations and to consolidate them into a single location. This new facility is proposed to be located on Canada Street, west of the Airport Terminal complex. It will be located on the current site of the East Baton Rouge Parish Animal Control Center, which is being relocated.

5.2.1.3 General Aviation/Fixed Based Operator (FBO)

The Airport is served by three Fixed Based Operators (FBO): Signature Aviation, Executive Aviation, and BTR Jet. Signature Aviation provides tie-down services, limited hangar space, fuel, catering, pilot/passenger lounge, and on-site rental cars. Executive Aviation provides fuel, maintenance, charters, car rentals, limousine service, and a lounge/lobby. BTR Jet provides maintenance services, fuel, concierge services, on-site rental cars, and catering. Based on interaction with the FBOs, their facilities are adequate to meet their needs and there are no plans to make changes to these facilities.

5.2.1.4 Aircraft Rescue and Firefighting (ARFF) Facilities

An 8,200 square foot Aircraft Rescue and Firefighting Facility (ARFF) is located south of the Terminal Building. It was commissioned and certified in 1996 and renovated in 2011. No improvements to the ARFF are anticipated during the 20-year planning horizon.

5.2.1.5 Other Facilities

The Airport intends to develop property for both aviation and non-aviation uses on the Airport-controlled parcels on the north, west and east sides of the airfield, for the purpose of generating revenue. The following facilities have been identified by this planning effort for potential development. They are positioned on existing airport property and can be implemented as demand presents itself.

- North General Aviation Development;
- East General Aviation Development;

- Warehouse/Industrial Development on east side; and
- Hotel on east side of airfield.

5.3 GROUND ACCESS FACILITY ALTERNATIVES ANALYSIS

This section details the various concepts considered for each landside element of the Ground Access Facilities.

5.3.1 ROADWAYS

Ensuring continued ease of access to BTR by the surrounding communities is a priority of the Airport both for the convenience of passengers and for the efficient movement of goods and services. Convenient access to BTR within the region promotes the health of the airport by encouraging travelers to utilize BTR rather than driving to other facilities.

The general Airport boundary is defined along the north by Blount Road; along the east by Plank Road; along the south by Harding Boulevard; and on the west side by Veteran's Memorial Boulevard. Vehicular access to the Terminal comes via Veterans Memorial Boulevard and Captain Ryan Drive which provides access to the Terminal from Veteran's Memorial Boulevard. The north side of the Airport property is accessed via Blount Road. The General Aviation (GA) area on the south side is accessed from Harding Boulevard and Plank Road, and the GA facilities along the west side of Taxiway B are accessed by a series of interior roads.

Among the issues to be addressed in this Master Plan is the realignment of Plank Road. Runway 31 has a displaced threshold and declared distance to alleviate airspace concerns and deficiencies in the Runway Safety Area. In its current location, a portion of Plank Road prevents the utilization of the runway to its full capacity and the Airport desires to reclaim the runway length lost due to these deficiencies.

With the realignment of Plank Road, the landing threshold can be shifted to the end of the pavement, adding 315 feet of usable pavement for Runway 31 operations. This will also allow for the elimination of the current engineered materials arresting system (EMAS), designed to prevent on aircraft overrun resulting in minimal aircraft damage, and provide the Airport with full-sized standard Runway Safety Area.

5.3.2 PUBLIC PARKING

Parking for visitors and tenants at the Airport is located within or adjacent to each leasehold at the Airport. The quantity of parking spaces provided for tenants on Airport property is adequate for the foreseeable future, but plans for any new or expanded facilities must include an evaluation of the parking requirements to ensure that ample space is allotted for vehicles.

The Terminal Building parking garage and surface lot lie to the immediate west of the Terminal, and are accessed via Veterans Memorial Boulevard and Captain Ryan Drive. Long-term parking for approximately 860 vehicles is provided in a surface lot to the west of the garage. Short-term parking for approximately 1,150 vehicles is provided within the garage.
The quantity of parking spaces at the Terminal facility is sufficient to meet the projected demand of the 20 year planning horizon.

It should be noted that any future expansion of the Terminal facility (which may include: ticketing lobbies and airline offices; passenger boarding lounges and airline gates; and, baggage claim facilities) will require additional evaluation to determine the quantity of parking that may be required to support this development.

5.3.3 EMPLOYEE PARKING

Airport employee parking is provided in 2 different lots, one south of the parking garage and another on 5th floor of the Rental Car Garage, with a total of approximately 450 spaces. This provides adequate space for the foreseeable demand.

5.3.4 RENTAL CAR FACILITIES

The Airport is served by five major rental car operators that provide customer service counters in the terminal building adjacent to baggage claim (Avis, Budget, Enterprise, Hertz, and National). Rental Car Facilities are located on the ground level of the Passenger Terminal Building.

All customers pick up and return their cars in the parking garage adjacent to the Passenger Terminal Building. Maintenance and repair of rental cars is performed in a surface lots located to the northwest of the Passenger Terminal.

BTR
BATON ROUGE
METROPOLITAN AIRPORT

Baton Rouge Metropolitan Airport
Master Plan Update

Chapter Six
Recommended Development Plan

KG
Kutchins & Groh

CHAPTER SIX
Recommended Development Plan

The culmination of the Airport Master Plan is the Recommended Development Plan. This document presents the Airport's vision for the future and recommendations for its development.

6.1 KEY RECOMMENDATIONS

The major findings and conclusions of the Master Planning process include the following:

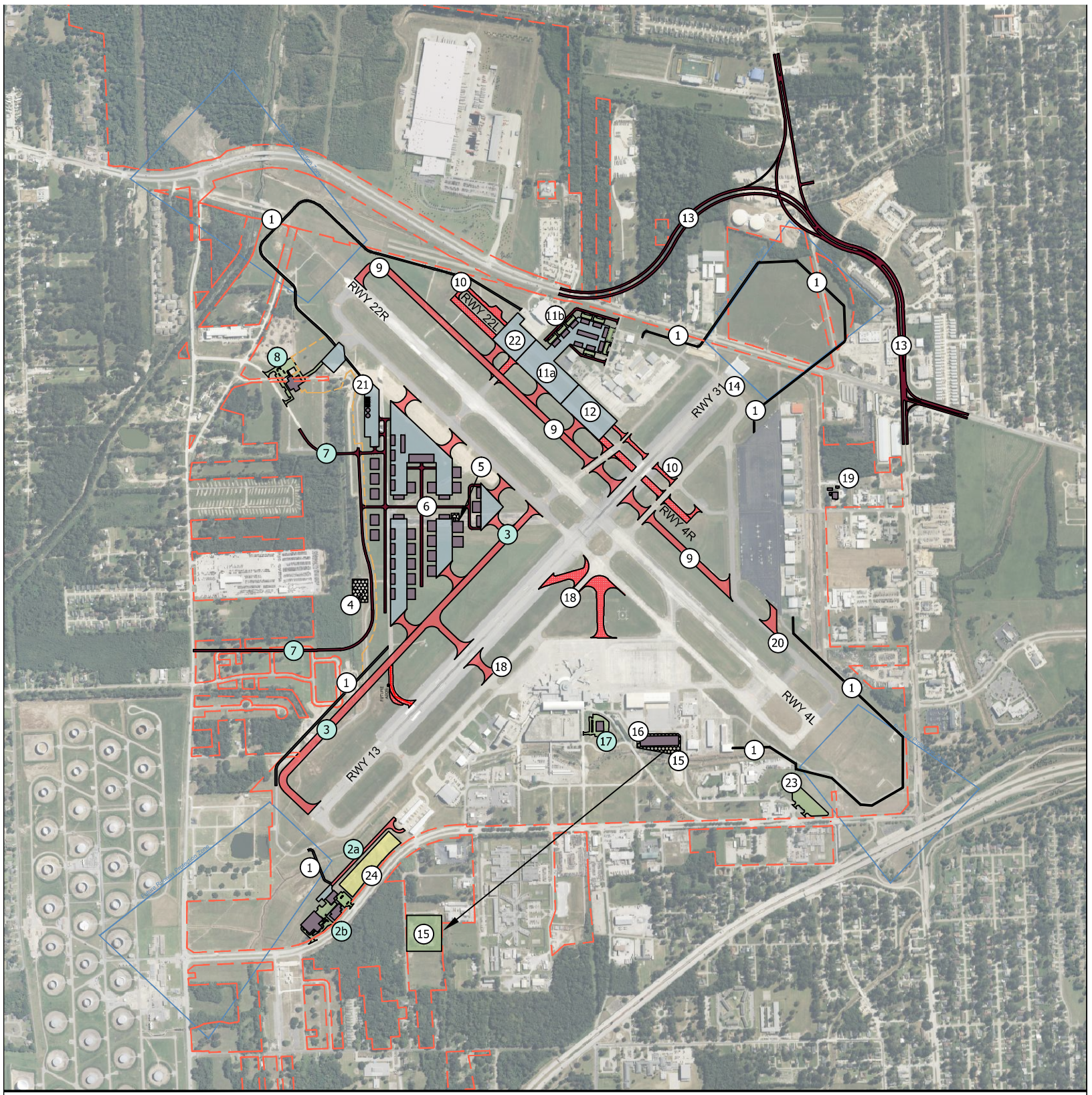
- Completion of Taxiway F Extension to provide a full, parallel taxiway for Runway 13-31 (currently underway);
- Relocation of Plank Road, which will result in:
    - Recovery of the Runway 31 threshold;
    - Establishment of a full standard Runway Safety Area (RSA);
    - Establishment of ownership/control of Runway Protection Zone (RPZ);
    - Removal of Plank Road from the RPZ; and
    - Elimination of the Engineered Materials Arresting System (EMAS);
- New parallel taxiway for Runway 4L-22R on the east side of the airfield;
- Decommissioning and removal of Runway 4R-22L and Taxiway E;
- Removal of Taxiways D and K to eliminate "hot spots" on the airfield - a "hot spot" is defined by the Federal Aviation Administration (FAA) as location on an airport movement area with a history of potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary;
- South Ramp Connector Taxiway;
- Improvements to the existing FAA Airport Traffic Control Tower (ATCT) complex;
- Realignment of portions of the perimeter road to eliminate connections to movement areas;
- Relocation of the City/Parish Mosquito Abatement Facility to the northwest section of the airfield (currently underway);

- Relocation of the Antenna Farm to a site immediately north of the North Access Road;
- Construction of a new fuel farm and support facilities to serve the north side;
- Removal of old, unused Approach Surveillance Radar (ASR) equipment, which has been replaced with new equipment, to make room for the North General Aviation development;
- Construction of a new North Access Road to serve new General Aviation/Corporate Aviation development (currently underway);
- Cell Phone Lot;
- Construction of a New Multiplex (proposed emergency response facility) in the northeast quadrant of the airfield (currently underway);
- Construction of a new General Aviation development on the east side of the airfield;
- Construction of a new General Aviation development on the north side of the airfield;
- Relocation of Airport Field Maintenance to nearby Canada Street, west of the Airport Terminal complex, on the current site of the East Baton Rouge Parish Animal Control Center;
- Development of a Warehouse/Industrial development on the west side of the airfield, southwest of the Passenger Terminal Building; and
- Construction of a new hotel near the Passenger Terminal Building.

The Recommended Development Plan for the Baton Rouge Metropolitan Airport is depicted on ***Exhibit 6-1***. Specific projects included in the preferred development concept and suggested phasing for implementation are discussed in the following sections.

6.2 PREFERRED DEVELOPMENT PLAN PROJECTS

The following projects are recommended for implementation over the planning horizon to meet the requirements presented in Chapter Five, Development Alternatives. These projects are intended to meet near-, mid- and long-term demand.



Legend

- Runway/Taxiway Pavement
- Runway/Taxiway Pavement (To Be Removed)
- Ramp/Apron Pavement
- Wildlife/Security Fence
- Building
- Parking Lot
- Aviation Development
- Non-Aviation Development
- Existing Airport Road
- Airport Road (Landside)
- Airport Road (Airside)
- Land Acquisition
- Airport Property Line
- (#) Project Currently in Design/Construction

Key

1. Perimeter Road
2a. City-Parish Mosquito Abatement Facility - Taxilane
2b. City-Parish Mosquito Abatement Facility - Facilities/Parking
3. Taxiway 'F' Extension
4. Antenna Farm Relocation
5. Removal of Old ASR Equipment
6. Future General Aviation Development - North
7. North Access Road (Aviation Business Park)
8. Multiplex Development
9. Future Runway 4L/22R Parallel Taxiway
10. Decommissioning/Removal of Taxiway 'E' and Runway 4R/22L
11a. Future East General Aviation Development - Apron Expansion
11b. Future East General Aviation Development - Hangars/Support Facilities
12. Future General Aviation Apron Expansion - East (Phase II)
13. Future Plank Road Relocation
14. Future Runway 31 Threshold Relocation/Recovery
15. Airport Maintenance Relocation
16. Future Warehouse/Industrial Development
17. Future Hotel Development
18. Future Taxiway Intersection Re-Alignment
19. FAA ATCT Redevelopment
20. Future South Ramp Connector Taxiway
21. Future Fuel Farm and Support Facilities
22. Future East Apron Expansion (Phase III)
23. Future Cell Phone Lot
24. Future GA/Corporate Hangar Development

0 1500 3000

GRAPHIC SCALE IN FEET

Baton Rouge Metropolitan Airport

Exhibit 6-1: Recommended Development Plan

6.2.1 PREFERRED AIRSIDE DEVELOPMENT

Recommended airside projects generally fall into the categories of: improvements to the runway and taxiway system, improvements to other airside facilities, and preservation of the existing infrastructure. The projects identified in the BTR Recommended Development Plan are addressed in the following sections.

6.2.1.1 Runway and Taxiway System Improvements

Good planning practices require that space and facility infrastructure be reserved for certain airfield improvements such as runway extensions, taxiway development, and related projects. Sound capital decisions and business integration into this planning process further dictate that certain demand-driven projects be programmed only when there is sufficient demand to justify their implementation. The recommended runway and taxiway system improvements are:

- Recovery of the Runway 31 threshold as a result of the relocation of Plank Road;
- Establishment of a full standard Runway Safety Area (RSA) as a result of the relocation of Plank Road;
- Ownership/Control of Runway Protection Zone (RPZ) as a result of the relocation of Plank Road;
- Removal of Plank road from the RPZ as a result of the relocation of Plank Road;
- Elimination of the Engineered Materials Arresting System (EMAS);
- Completion of Taxiway F Extension to provide a full, parallel taxiway for Runway 13-31;
- New parallel taxiway for Runway 4-22R on the east side of the airfield;
- Removal of Taxiways D and K to eliminate “hot spots” on the airfield;
- South Ramp Connector Taxiway; and
- Relocation of the existing FAA Airport Traffic Control Tower (ATCT).

The taxiway improvements will bring the airfield into compliance with current FAA standards. These enhancements will also improve safety and efficiency, primarily by eliminating excessive turns. The taxiway improvements will be phased to work within available budgets and will be scheduled to minimize operational impacts on the airfield during construction.

A new ATCT facility is recommended on the south side of the airfield, adjacent to the existing tower, to resolve line-of-sight issues. The new facility will be designed after a line-of-sight study is complete. The study will determine the appropriate height in order to alleviate line-of-sight issues on the north and east ends of the airfield.

6.2.1.2 Improvements to Other Airside Facilities

There are no proposed development projects that fall into this category.

6.2.1.3 Preservation of Existing Infrastructure

- Realignment of portions of the perimeter road to eliminate connections to movement areas; and
- Relocation of the Antenna Farm to a site immediately north of the North Access Road.

6.2.2 PREFERRED TERMINAL DEVELOPMENT

With the recent expansion of the Passenger Terminal Building security lobby and ticketing/check-in facilities, the current terminal has more than sufficient capacity to meet the operational needs for the forecasted demand; therefore, there are no proposed development projects that fall into this category.

6.2.3 PREFERRED SUPPORT-ANCILLARY FACILITIES DEVELOPMENT

Support-Ancillary facilities are defined as those that are required to maintain the operation of an airport. The following Support-Ancillary projects were identified during the BTR Master Plan process:

- Relocation of the City/Parish Mosquito Abatement Facility to the northwest section of the airfield (currently underway);
- Construction of a new fuel farm and support facilities for the north side of the airfield;
- Construction of a New Multiplex (proposed emergency response facility) in the northeast quadrant of the airfield (currently underway); and
- Relocation of Airport Field Maintenance to nearby Canada Street, west of the Airport Terminal complex, on the current site of the East Baton Rouge Parish Animal Control Center.

6.2.4 PREFERRED GROUND ACCESS FACILITY IMPROVEMENTS

Ground Access facilities generally refer to surface transportation systems which are an integral part the operation of an airport. These can include airside and landside facilities. The alternatives analysis for BTR identified the following project:

- Relocation of Plank Road; and
- Construction of a new North Access Road to serve new General Aviation/Corporate Aviation development (currently underway).

6.2.5 COLLATERAL DEVELOPMENT

Collateral development includes improvements to add commercial opportunities for both aviation-related and non-aviation projects. In accordance with the FAA grant assurances, it is incumbent on all Airport operators to take steps to be as self-sustaining as possible. In the case of the Baton Rouge Metropolitan Airport, there are areas that lend themselves to future commercial development opportunities. These include:

- Removal of old, unused Approach Surveillance Radar (ASR) equipment to make room for the North General Aviation development;
- Construction of a new General Aviation development on the east side of the airfield;
- Construction of a new General Aviation development on the north side of the airfield;
- Development of a Warehouse/Industrial development on the west side of the airfield, southwest of the Passenger Terminal Building; and
- Construction of a new hotel near the Passenger Terminal Building.

6.3 RECOMMENDED PHASING

The Recommended Phasing Plan presents the implementation schedule for the Master Plan recommendations. It includes the following projects:

6.3.1 SHORT TERM (2017 – 2021):

- Perimeter Road Construction;
- Antenna Farm Relocation;

- North General Aviation Development;
- Environmental Assessment and Benefit Cost Analysis for Plank Road Relocation;
- South Ramp Connector Taxiway;
- South Ramp Pavement Rehabilitation
- Runway 4L-22R Rehabilitation;
- Plank Road Relocation;
- Taxilane MARC Lighting;
- Runway 13-31 and 4-22 Intersection Repairs;
- Cell Phone Lot;
- Removal of Old ASR Equipment;
- Construction of Airport Hotel;
- FAA Airport Traffic Control Tower (ATCT) Redevelopment;
- Runway 31 Threshold Relocation/Recovery; and
- Mid-Field Taxiway Intersection Realignment.

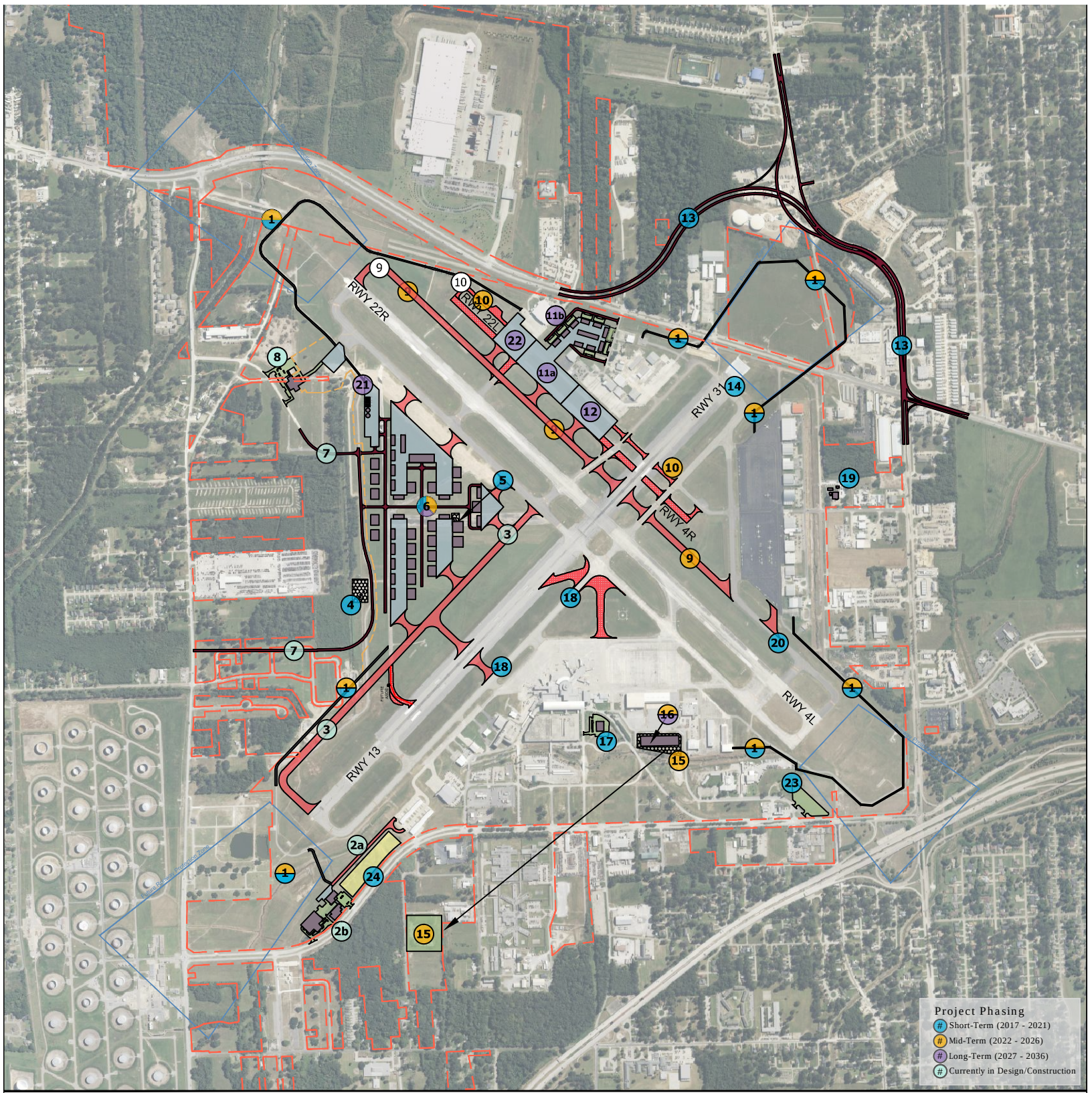
6.3.2 MID-TERM (2022 – 2026):

- Continuation of Future North General Aviation Development;
- Decommissioning and Removal of Runway 4R-22L and Taxiway E;
- Runway 4L-22R Parallel Taxiway;
- Continuation of Perimeter Road Construction;
- Airfield Lighting Rehabilitation;
- Warehouse/Industrial Development;
- Airfield Drainage Improvements;
- Airport Maintenance Relocation; and
- Runway 13-31 Rehabilitation.

6.3.3 LONG TERM – (2027 – 2036):

- Future Fuel Farm and Support Facilities;
- Continuation of Future North General Aviation Development;
- East General Aviation Development;
- Runway 4L-22R Rehabilitation;
- Air Carrier Ramp Rehabilitation; and
- Rehabilitation of Taxiways A and B.

These projects are illustrated on ***Exhibit 6-2, Recommended Phasing Plan***.



Legend

- Runway/Taxiway Pavement
- Runway/Taxiway Pavement (To Be Removed)
- Ramp/Apron Pavement
- Wildlife/Security Fence
- Building
- Parking Lot
- Aviation Development
- Non-Aviation Development
- Existing Airport Road
- Airport Road (Landside)
- Airport Road (Airside)
- Land Acquisition
- Airport Property Line

Key

1 Perimeter Road
2a City-Parish Mosquito Abatement Facility - Taxilane
2b City-Parish Mosquito Abatement Facility - Facilities/Parking
3 Taxiway 'F' Extension
4 Antenna Farm Relocation
5 Removal of Old ASR Equipment
6 Future General Aviation Development - North
7 North Access Road (Aviation Business Park)
8 Multiplex Development
9 Future Runway 4L/22R Parallel Taxiway
10 Decommissioning/Removal of Taxiway 'E' and Runway 4R/22L
11a Future East General Aviation Development - Apron Expansion
11b Future East General Aviation Development - Hangars/Support Facilities
12 Future General Aviation Apron Expansion - East (Phase II)
13 Future Plank Road Relocation
14 Future Runway 31 Threshold Relocation/Recovery
15 Airport Maintenance Relocation
16 Future Warehouse/Industrial Development
17 Future Hotel Development
18 Future Taxiway Intersection Re-Alignment
19 FAA ATCT Redevelopment
20 Future South Ramp Connector Taxiway
21 Future Fuel Farm and Support Facilities
22 Future East Apron Expansion (Phase III)
23 Future Cell Phone Lot
24 Future GA/Corporate Hangar Development

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GRAPHIC SCALE IN FEET

Baton Rouge Metropolitan Airport

Exhibit 6-2: Recommended Phasing Plan

6.4 AIRPORT LAYOUT PLAN (ALP)

The ALP has been updated to reflect the proposed projects identified by the Recommended Development Plan. The ALP can be found in the Appendix.

6.5 SUMMARY

The Recommended Development Plan is the result of coordination and input from the following entities:

- Airport staff;
- Technical Advisory Committee;
- Community Advisory Committee;
- Aviation Division of the Louisiana Department of Transportation and Development (DOTD);
- Federal Aviation Administration (FAA); and
- The general public.

Numerous meetings and discussions were conducted among these parties at varying stages of the planning process to allow for stakeholder and public input. Feedback was gathered on the background data, forecasts, airfield and landside development alternatives, and the Recommended Development and Phasing Plans prior to completion of this document.

BTR
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Baton Rouge Metropolitan Airport
Master Plan Update

Chapter Seven
Environmental Overview

Kutchins & Groh

CHAPTER SEVEN
Environmental Overview

One of the major products of this planning process is the Recommended Development Plan. All projects recommended for inclusion in this document will require some type of environmental clearance from the Federal Aviation Administration (FAA) prior to receiving funding approvals for implementation. In order to garner this approval, it is necessary to review the potential environmental effects of the improvements proposed by this plan in accordance with the impact categories identified by the FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementation Instructions for Airport Actions*. This chapter presents a preliminary overview of the potential effects of the Airport's proposed program and is an integral part of the Recommended Development Plan.

This chapter is not intended to be an Environmental Assessment (EA) nor an Environmental Impact Statement (EIS) for the Master Plan projects. However, it is intended to provide information on environmental concerns related to the Recommended Development Plan. The information from this chapter will serve as a factor when evaluating alternatives and identifying National Environmental Policy Act (NEPA) requirements for Master Plan projects. Further documentation and analysis (e.g., Documented Categorical Exclusions, Environmental Assessments, and/or Environmental Impact Statements) must be accomplished for all proposed projects prior to implementation.

7.1 AGENCY COORDINATION

At the beginning of this study, an initial review of available environmental documentation from previous studies was conducted in order to determine potential issues with respect to individual natural resources. This resulted in the development of a list of Federal and State agencies with potential concerns. A letter describing the purpose of the Master Plan was sent to solicit input on environmental concerns from each of the respective agencies. In some cases, online self-assessments were accomplished to identify some of the potential impacts in accordance with individual agency practices. Input was requested and received from each of the agencies contacted, which included:

- Corps of Engineers – New Orleans District;
- United States Fish and Wildlife Service;
- Louisiana Department of Culture, Recreation and Tourism, State Historic Preservation Officer;

- Louisiana Department of Environmental Quality; and
- Louisiana Department of Natural Resources, Coastal Management Division.

Copies of the relevant correspondence and the agency responses are included as an Appendix to this report.

7.2 AREAS OF INTEREST

7.2.1 NOISE AND COMPATIBLE LAND USE

One of the most common impact categories to consider with all Master Planning efforts is the combination of noise and compatible land use. This is the first issue that people living and working in and near an airport notice and speak about passionately.

For any recommended project which results in an increase of noise over a sensitive receptor, such as a residence, church, school, or similar place of public assembly, it will be necessary to prepare a noise analysis in accordance with FAA requirements to document potential impacts and identify required mitigation. Typical projects that could cause such an increase include new runways, runway extensions, runway upgrades, etc.

No separate noise analysis has been prepared with this Master Plan Update. The development projects identified in this planning effort are not expected to materially change the existing noise patterns in the Airport's environs, with the exception of the proposed recovery of the Runway 4L threshold. This project will require a noise analysis, which will be handled in a stand-alone Environmental Assessment.

As previously identified, all development proposed by this planning effort will result in a separate environmental clearance and approval process. These planning efforts will further document any potential noise impacts and set forth mitigation efforts requiring FAA approval prior to the development's implementation.

7.2.2 SOCIAL IMPACTS

Potential social impacts for the Master Plan development projects include:

- Relocation or disruption of communities;
- Alteration of surface transportation patterns;
- Disruption of established communities;

- Interference with orderly and planned development; and
- Creation of appreciable changes in employment.

All proposed projects in the development plan must be examined to determine if they impact any of the above-mentioned issues. Projects that require land acquisition must be carried out in accordance with the Federal requirements for Land Acquisition and Relocation (49 CFR Part 24). Furthermore, land acquisition must be thoroughly examined and vetted via a separate environmental analysis process (e.g., an environmental assessment or an environmental impact statement). All of the planned improvements documented by this plan are expected to occur within the existing Airport boundaries, with the exception of the relocation of a portion of Plank Road. All future land acquisition in association with the Plank Road relocation will be the subject of a separate environmental action.

7.2.3 HISTORIC, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

The Louisiana Department of Culture, Recreation and Tourism, State Historic Preservation Officer is the agency responsible for the oversight of Historical and Cultural resources within the State of Louisiana. Consequently, this planning effort consulted with and received comments from this agency, which responded that "no known historic properties will be affected by this undertaking."

As with any construction effort, emergency discovery procedures will apply to any project implemented at the Airport. If any archeological remains — such as concentrations of shell, ceramics, worked stone, or bone — were to be observed during construction, it would be necessary to immediately stop work and notify the State Historic Preservation Officer of the Louisiana Department of Culture, Recreation and Tourism, so that the archaeological remains could be documented and dealt with accordingly.

7.2.4 DEPARTMENT OF TRANSPORTATION ACT, § 4(f)

Section 4(f) of the Department of Transportation Act provides that the Secretary of Transportation shall not approve any program or project that requires the use of any publicly owned park or other protected resource, unless there is no feasible and prudent alternative to the use of such land, and that such a program or project include all possible planning to minimize any adverse effects resulting from the use of the land. Section 4(f) lands include public parks; recreation areas; wildlife and waterfowl refuges; and lands of national, state, or local significance as determined by the officials having jurisdiction. If there is no physical taking of such public land, but there is a possibility of adverse impacts, such as increased noise or air pollution, the FAA will

determine whether any increase in activity associated with the project is compatible with the normal activity associated with the land.

It is not expected that the Master Plan development projects will affect Section 4(f) land. But if in the future it is determined that any such land would be affected, the Airport would act in accordance with Section 4(f) to determine its proper course of action.

7.2.5 AIR QUALITY

The primary source of ozone in the region is surface transportation, rather than the Airport itself. According to the Louisiana Department of Environmental Quality (LDEQ), East Baton Rouge Parish has a "marginal" nonattainment designation for 8-hour Ozone. This means that the geographic area exceeded the 2008 federal standard of 75 parts per billion, averaged over three years, as defined by National Ambient Air Quality Standards.

Though none of the projects identified in the Recommended Development Program are anticipated to have any air quality impacts, due to this designation, all projects will receive greater scrutiny in their respective environmental processing with regard to Air Quality. Greater review of the air quality impacts for the construction of any projects identified in the Recommended Development Program will also be required due to the marginal nonattainment designation or 8-hour Ozone for East Baton Rouge Parish.

7.2.6 WATER QUALITY

The Federal Water Pollution Control Act (the Clean Water Act) requires that airport operators establish water quality standards and control discharges into surface and sub-surface waters. Particular concerns include the preservation of existing drainage; the protection of aquifers from fuel spills, aircraft washing, and deicing runoff; and the control of sedimentation and erosion during construction.

Industrial plant operations, including airports, are required to obtain stormwater permits under the 1987 amendments to the Clean Water Act. A National Pollutant Discharge Elimination System (NPDES) permit requires (1) submission of information regarding existing programs to control pollutants, and (2) field monitoring of major outfalls to detect improper discharges. All stormwater runoff discharge must be identified and characterized, including those containing de-icing fluids, liquid fuels, and chemicals used for maintenance. Any discharge to waters of Louisiana may also require a Louisiana Pollutant Discharge Elimination System (LPDES) permit in addition to the NPDES permit.

Potential impacts to water quality and the water supply that could result from the development plan projects relate to runoff from new paved surfaces or structures. Pollutants that could possibly affect surface waters as a result of the development plan include oils and greases that build up on the Airport's roadways, parking surfaces, aircraft parking aprons, taxiways, and runways. The impact of the development plan on groundwater may include potential sedimentation and erosion during construction, as well as leakage or seepage of fuels and lubricants during airfield operations.

On-site drainage within the Airport boundary reflects the land use, cover and soil characteristics, consisting primarily of impervious pavements, structures, grassed open space and some wooded areas near the edges of the property. Overland slopes, pipe slopes and channel slopes are relatively flat (a typical characteristic of airports), and the existing storm sewer systems and ditches divide the Airport into discrete drainage basins that drain off-site at several locations.

All engineering performed for the Airport is completed in accordance with the Airport's standard operating procedures utilizing best management practices during design and construction. Any additional pavement/impervious surfaces will be accommodated by the Airport's drainage infrastructure with improvements implemented on a per project basis in order to comply with regulatory and environmental requirements.

7.2.7 WETLANDS

Wetlands are defined in Executive Order 11990, Protection of Wetlands, as "those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction." A combination of this Executive Order and DOT Order 5660.1A, Preservation of the Nation's Wetlands, implements wetlands protection for the nation. The Executive Order requires federal agencies to avoid, to the extent possible, the adverse effects associated with the destruction or modification of wetlands wherever there is a practical alternative.

If deposition or redistribution of dredged or fill material occurs in a wetland, then a permit under Section 404 of the Clean Water Act must be obtained from the Department of the Army Corps of Engineers.

In response to a solicitation of views letter, the New Orleans District Corps of Engineers indicated that they "do not anticipate any adverse impacts to any Corps of Engineers projects." As the projects identified in this plan are implemented, appropriate environmental clearance will be

accomplished including coordination with the Corps of Engineers in order to obtain any required permitting.

7.2.8 FLOODPLAINS

Executive Order 11988, Floodplain Management, defines floodplains as "the lowlands and relatively flat areas adjoining inland and coastal waters, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year." This is the equivalent of a 100-year flood standard. DOT Order 5650.2 contains DOT's policies in regard to floodplains. These two orders, taken together, establish a policy that activities taken in a 100-year floodplain should be avoided, wherever practicable.

Neither the Corps of Engineers nor the Louisiana Department of Natural Resources has identified any impacts to floodplains as a result of proposed Airport development.

7.2.9 COASTAL ZONE MANAGEMENT AND COASTAL ISLANDS

The Louisiana Department of Natural Resources, Coastal Management Division has jurisdiction over any encroachments in, on, or over the beds of the bays, ocean, rivers, streams, or creeks that are the property of the State of Louisiana. In its response to the Solicitation of Views, the Coastal Management Division responded that the property lies outside the Louisiana Coastal Zone, and, therefore, a Coastal Use Permit will not be required.

7.2.10 WILD AND SCENIC RIVERS

No rivers have been identified that are classified as wild and scenic within the vicinity of BTR, so these regulations are not applicable.

7.2.11 BIOTIC COMMUNITIES AND ENDANGERED AND THREATENED SPECIES OF FLORA AND FAUNA

Under federal law, impacts to wildlife habitat or endangered or threatened species must be coordinated with the proper authorities. Because the Master Plan projects would be in areas that have been in the Airport's use for many years, no adverse effects upon biotic communities are expected. Through the use of the U.S. Fish & Wildlife Service's online self-assessment tool, it was determined that there would be no effect on federally-listed threatened or endangered species, nor is there proposed or designated critical habitat within the Parish.

7.2.12 FARMLAND

Given its location in the City of Baton Rouge, there are limited open, undeveloped areas adjacent to the Airport. Development of these properties is not anticipated as a result of this planning effort. The Airport is bounded along the north by industrial and residential areas. Commercial and uses residential lie to the south. Along the eastern boundary industrial, commercial and residential areas are found, while residential and institutional areas lie to the west. The adjacent property does not currently present any compatibility issues with aircraft operations.

7.2.13 ENERGY SUPPLY AND NATURAL RESOURCES

The effects of airport development on energy and natural resources are generally related to the amount of energy required for aircraft while using ground power, ground support vehicles, airport lighting, and terminal and other facilities. While it is too early to definitively state that implementation of the recommended development plan will not materially increase demands on the energy supply of the region, at this time, no material increases are expected. Additionally, it is anticipated that the construction of any recommended projects would consume conventional building materials that are not scarce and therefore would not be problematic.

7.2.14 LIGHT EMISSIONS

In accordance with the Environmental Handbook, FAA Order 5050.4A, light emissions should be considered if they create an annoyance among people in the vicinity of the installation. Relocation of or establishment of new runway lighting could cause a change in lighting patterns. Though these potential changes are not be expected to create any significant impact on the surrounding community, they will be reviewed in the environmental processing associated with the relocation of Plank Road.

7.2.15 SOLID WASTE IMPACT

Solid waste impacts are monitored for projects that significantly increase solid waste production, such as significant terminal expansions, large manufacturing facilities, etc. Any proposed projects that create a significant amount of solid waste will need to be analyzed for impacts in this category; however, no significant impacts are anticipated at this time.

7.2.16 HAZARDOUS WASTE

Hazardous waste impacts at airport facilities can be found in numerous situations ranging from sanitary landfills to abandoned underground storage tanks (UST). USTs are probably the most

commonly found source of hazardous waste impacts at airports. No known issues associated with hazardous waste have been documented to date, and no significant impacts are expected at this time.

7.2.17 CONSTRUCTION IMPACTS

Implementation of the recommended development plan will potentially result in construction-related impacts, but they are not expected to be significant so long as all activities are carried out in accordance with best management practices. Construction impacts are not generally considered to be significant because they: (1) result solely from construction operations; and, (2) are limited to specific construction periods. Their impacts would primarily result from the associated noise, dust, and construction vehicle exhaust emissions.

7.3 AIRPORT RECYCLING PROGRAM

An airport has many opportunities to reduce its environmental footprint in the community that it serves, and among the easiest and least expensive is recycling. With increased terminal security, passengers spend more time in airports than ever before and with this extra time, they buy and consume more food and beverages. Passengers and airport personnel generate tons of materials and waste every day, much of which can be recycled.

In order to reduce waste disposal costs and conserve natural resources, all BTR staff, tenants, and on-site contractors are encouraged to dispose of recyclable materials, as directed by the guidelines of the Baton Rouge Recycling Office, in an appropriate manner. In addition to recycling, Airport staff, tenants, and on-site contractors are encouraged to reuse materials when possible to further reduce disposal costs, purchasing costs, and conserve natural resources

BTR
BATON ROUGE
METROPOLITAN AIRPORT

Baton Rouge Metropolitan Airport
Master Plan Update

Chapter Eight
Implementation & Financial Plan

Kutchins & Groh

CHAPTER EIGHT
Implementation and Financial Plan

This chapter defines a financial plan for the Recommended Development Plan. An analysis of available capacity of the airport to finance projects was accomplished as a component of this Airport Master Plan Update. This capacity information was utilized as a guide in determining the scope and level of proposed development projects for the Airport.

8.1 ASSUMPTIONS

The financial capacity analysis indicates that the majority of funding available for Capital Improvement Projects at Baton Rouge Metropolitan Airport comes from the Federal Airport Improvement Program (AIP) administered by the Federal Aviation Administration (FAA). While the use of Passenger Facility Charges (PFC) and Customer Facility Charges (CFC) supplement this funding, the amount of this contribution to the overall Capital Program is small by comparison. Both AIP funding and PFC collection levels are directly tied to the number of enplaned passengers. Consequently, all of the projections included in the analysis are based on the forecast of enplaned passengers updated in this Master Plan approved by the FAA.

The Airport is currently servicing debt acquired from the development of the new terminal. The debt is being financed through a number of revenue generation methods, including: a PFC, a CFC, and concession rates and charges.

8.2 HISTORICAL FUNDING

A review of historical funding receipts for the Airport indicates that a significant amount of the Airport's Capital funding is derived from AIP Grants. Over the past 10 years, the Airport has received approximately $98,450,000 in AIP grants. Also, in 2015, the Airport received approximately $1,540,000 in Passenger Facility Charges (PFC) and $2,054,000 in Customer Facility Charges (CFC).

Other funding sources include traditional revenue from General Aviation and corporate tenants, fuel sales, airside ground leases, and other non-aviation revenue producing activities, including business park development and governmental leases. These revenues are supplemented with State of Louisiana Department of Transportation and Development (LADOTD) grants and funding

from City government resources. All of these resources, coupled with FAA AIP funding, are available for capital improvements.

8.3 CAPITAL DEVELOPMENT SOURCES OF FUNDS

A review of all available funding sources indicates that the Airport should plan for an average of $11,000,000 per year from Federal and State grant sources to dedicate to its capital improvements without the initiation of debt-financing. This basis has been used in the development of a phased approach to the proposed development. Each of these sources is provided on an annual fiscal year cycle and has eligibility and timing requirements to be considered when applying for and using the funds. Consequently, the implementation of the projects recommended by this plan can and should be phased to match the funding available in any given year.

8.3.1 Airport Improvement Program Grants

The Airport Improvement Program (AIP) is the FAA's grant-in-aid program for civil airports included in the National Plan of Integrated Airport System (NPIAS) that represents a major source of funding for airport development and planning. Originally established in 1982 with the passage of the Airport and Airway Improvement Act, the Office of the Law Revision Counsel re-codified the AIP in 1994 as Chapter 471 of Title 49 of the United States Code (U.S.C.). Several amendments have occurred since this time to address annual authorizations and other program changes. AIP funds originate from the Airport and Airway Trust fund, which draws support from user fees, fuel taxes and other revenue sources.

The FAA refers to recipients of AIP grants as "Sponsors". A Sponsor's eligibility to receive funds under the AIP program varies per the type of airport and the type of proposed project. In general, a Sponsor may be a public agency, a private owner, or a State entity that is associated with a public-use airport. Sponsors must be legally, financially, and otherwise able to carry out the assurances and obligations contained in the project application and grant agreement.

The AIP provides annual grants to airports based on eligibility and national priority. The amount of funding available to an airport is based on the level of passenger traffic, project type and justification, and how it compares to other projects proposed across the nation. Funding for Airports is provided through both passenger/cargo entitlements and discretionary grants. Entitlement funding is formula-based, which provides specific dollar amounts on a per passenger basis.

Discretionary funding is awarded based on project justification and demand. This funding source requires individual project to compete nationally on a priority basis with the highest priority being placed on runway and safety projects. Generally, these funds can be used for airside, terminal, and related infrastructure development. This includes airfield pavement construction and rehabilitation; terminal construction; roadway and access projects; safety and security projects; land acquisition; planning, environmental, and noise mitigation programs. There are exceptions to these eligibility categories, but this list captures the majority of eligible items.

The analysis contained in this report assumes that the current funding methodology will remain in place.

8.3.2 Passenger Facility Charge (PFC)

The Passenger Facility Charge (PFC) is a fee assessed on each eligible passenger boarding a commercial flight at the Airport that is utilized for development projects. The eligibility criteria for PFC projects are virtually the same as those that are required for AIP projects.

Currently, the Airport collects the maximum allowable PFC of $4.50 per enplaned passenger. It is anticipated that this will continue as it provides a steady stream of funds for capital projects. This revenue stream is dedicated to debt service associated with several projects, such as terminal building renovations and expansions, as well as airfield modernization projects. Due to the current debt payment schedule, the PFC was not considered in the funding of the proposed capital plan identified with the Master Plan.

This maximum PFC level is established with the same regulations that govern the Airport Improvement Program. Each time the United States Congress considers reauthorization of the AIP, the subject of increasing the maximum allowable PFC is a significant part of that discussion. As of the writing of this document, deliberations among industry professionals, legislators, and related stakeholders considering an increase of the maximum allowable charge. Should Congress authorize an increase in the maximum allowable PFC, the Airport should consider increasing its charge level to take advantage of the additional capacity which would provide important supplementary funding for its development program.

8.3.3 Customer Facility Charge (CFC)

The Customer Facility Charge (CFC) is a fee assessed on each rental car transaction at an airport. There is no limit on the dollar amount of CFC, and imposition of this charge is not regulated by

the FAA. This is a popular method that airports use to fund the construction of public-use facilities.
The Airport is utilizing revenue from the CFC, currently assessed at $6.15 per day per rental, to service the debt for several projects including: the parking garage, the airport annex building, the Multiplex building, and a project to upgrade signage and drainage around the airport.

8.3.4 Louisiana Department of Transportation and Development (LADOTD) Aviation Trust Fund

The Louisiana Department of Transportation and Development (DOTD) administers a trust fund for airports in the State. It is financed through aviation fuel sales tax revenues. Grants from this fund are issued by the DOTD based on eligibility criteria set out by the department. Additionally, the trust fund provides the local match for AIP grants for all airports in the State requesting this assistance. Baton Rouge Metro typically requests and receives this funding support. Current State Law allows commercial service airports like Baton Rouge Metro to request and receive up to $3 million per year, and this planning amount has been utilized in the overall capital plan.

8.3.5 Other Sources

There are many other funding sources that airports utilize in funding capital improvements and development. Among these are: Airport Revenue Bonds, Tax Increment Financing, Public Parking Revenues, Capital Outlay, third party investments, and other financing methods.

The following **Table 8-1** considers each of these funding sources and depicts the anticipated financial capacity of approximately $349 million in Airport revenue and grants over a 20-year planning horizon. It is anticipated that additional resources from third party developers and tenants will be made available to support other development outlined in the CIP as demand presents itself.

Table 8-1
Projected Financial Capacity
Baton Rouge Metropolitan Airport

Federal Fiscal Year	FAA Airport Improvement Program		State	State	Other	Third	
	Entitlement	Discretionary	Aviation Trust Fund	Capital Outlay	Airport Funding	Party Funding	Total
2017	$ 2,800,000	$ 5,537,600	$ 4,001,400	$ 1,000,000	$ -	$ 200,000	**$ 13,539,000**
2018	$ 2,800,000	$ 5,527,700	$ 3,925,300	$ 1,022,000	$ -	$ -	**$ 13,275,000**
2019	$ 2,800,000	$ 5,503,400	$ 3,922,600	$ 1,044,000	$ 1,037,000	$ -	**$ 14,307,000**
2020	$ 2,800,000	$ 5,536,700	$ 3,926,300	$ 1,066,000	$ -	$ 17,131,000	**$ 30,460,000**
2021	$ 2,800,000	$ 4,030,100	$ 3,625,900	$ 1,089,000	$ -	$ 15,754,000	**$ 27,299,000**
Short-Term	**$ 14,000,000**	**$ 26,135,500**	**$ 19,401,500**	**$ 5,221,000**	**$ 1,037,000**	**$ 33,085,000**	**$ 98,880,000**
2022	$ 2,800,000	$ 3,968,900	$ 3,752,100	$ -	$ -	$ 5,426,000	**$ 15,947,000**
2023	$ 2,800,000	$ 3,851,900	$ 3,695,100	$ -	$ -	$ -	**$ 10,347,000**
2024	$ 2,800,000	$ 4,648,400	$ 3,847,600	$ -	$ -	$ 5,808,000	**$ 17,104,000**
2025	$ 2,800,000	$ 5,812,100	$ 3,923,900	$ 1,934,000	$ 500,000	$ 3,500,000	**$ 18,470,000**
2026	$ 2,800,000	$ 4,922,900	$ 3,889,100	$ -	$ 1,227,000	$ 6,062,000	**$ 18,901,000**
Mid-Term	**$ 14,000,000**	**$ 23,204,200**	**$ 19,107,800**	**$ 1,934,000**	**$ 1,727,000**	**$ 20,796,000**	**$ 80,769,000**
2027	$ 2,800,000	$ 3,000,000	$ 3,724,000	$ 1,858,000	$ -	$ 2,348,000	**$ 13,730,000**
2028	$ 2,800,000	$ 4,255,100	$ 3,947,900	$ 1,898,000	$ -	$ -	**$ 12,901,000**
2029	$ 2,800,000	$ 4,012,100	$ 3,756,900	$ 1,939,000	$ -	$ 3,464,000	**$ 15,972,000**
2030	$ 2,800,000	$ 4,000,500	$ 3,755,611	$ 1,981,000	$ -	$ 4,852,889	**$ 17,390,000**
2031	$ 2,800,000	$ 3,929,100	$ 3,495,900	$ 1,679,000	$ 500,000	$ 15,295,000	**$ 27,699,000**
2032	$ 2,800,000	$ 4,754,600	$ 3,839,400	$ -	$ -	$ 9,407,000	**$ 20,801,000**
2033	$ 2,800,000	$ 3,769,100	$ 3,729,900	$ -	$ -	$ 4,042,000	**$ 14,341,000**
2034	$ 2,800,000	$ 3,885,300	$ 3,742,811	$ -	$ -	$ 4,679,889	**$ 15,108,000**
2035	$ 2,800,000	$ 3,968,100	$ 3,752,011	$ -	$ -	$ 4,913,889	**$ 15,434,000**
2036	$ 2,800,000	$ 4,054,500	$ 3,761,611	$ -	$ -	$ 5,151,889	**$ 15,768,000**
Long-Term	**$ 28,000,000**	**$ 39,628,400**	**$ 37,506,045**	**$ 9,355,000**	**$ 500,000**	**$ 54,154,556**	**$ 169,144,001**
Total CIP	**$ 56,000,000**	**$ 88,968,100**	**$ 76,015,345**	**$ 16,510,000**	**$ 3,264,000**	**$ 108,035,556**	**$ 348,793,001**

Source: Kutchins & Groh, LLC Analysis

8.4 SUMMARY OF CAPITAL IMPROVEMENT PROGRAM

The financing capacity described earlier in this chapter serves as the guide for the Recommended Development Plan. By utilizing this information, the Airport can phase projects so that available financial resources are coupled with the appropriate projects, resulting in an achievable capital development program. Cost estimates for the proposed projects were prepared by GOTECH, INC.

The following tables summarize the proposed Capital Improvement Program for the Airport over the 20-year planning horizon. **Table 8-2** shows the short-term horizon projects planned for 2017 through 2021; **Table 8-3** shows the mid-term projects planned for 2022 through 2026; and **Table 8-4** shows the long-term planning horizon projects planned for 2027 through 2036. This planning level correlates with the approved forecast of passenger enplanement levels and shows that the program is financially feasible.

Table 8-2
Short-Term Capital Improvement Program (2017 - 2021)
Baton Rouge Metropolitan Airport

Federal Fiscal Year	Project Identification	Project Description		Funding Requirement	FAA Airport Improvement Program		State Aviation Trust Fund		State	Other	Third
					Entitlement	Discretionary	AIP Match	100% State	Capital Outlay	Airport Funding	Party Funding
2017	1	Perimeter Road (Phase I - Northwest Section)		$ 1,342,000	$ 1,207,800	$ -	$ 134,200	$ -	$ -	$ -	$ -
	4	Antenna Farm Relocation		$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 200,000
	6	Future General Aviation Development (Utility/Infrastructure)		$ 1,000,000	$ -	$ -	$ -	$ -	$ 1,000,000	$ -	$ -
	13	Future Plan Plank Road Relocation EA/BCA		$ 1,300,000	$ 1,170,000	$ -	$ 130,000	$ -	$ -	$ -	$ -
	20	Future South Ramp Connector Taxiway		$ 922,000	$ -	$ 829,800	$ 92,200	$ -	$ -	$ -	$ -
	F	South Ramp Pavement Rehabilitation		$ 2,250,000	$ -	$ -	$ -	$ 2,250,000	$ -	$ -	$ -
	G	Runway 4L/22R Rehabilitation (Joint Seal/Mudball Repair)		$ 75,000	$ -	$ -	$ -	$ 75,000	$ -	$ -	$ -
	13	Future Plank Road Relocation - Phase I		$ 5,700,000	$ 422,200	$ 4,707,800	$ 570,000	$ -	$ -	$ -	$ -
	K	Taxilane MARC Lighting		$ 750,000	$ -	$ -	$ -	$ 750,000	$ -	$ -	$ -
			Subtotal	**$ 13,539,000**	**$ 2,800,000**	**$ 5,537,600**	**$ 926,400**	**$ 3,075,000**	**$ 1,000,000**	**$ -**	**$ 200,000**
2018	1	Perimeter Road (Phase II - Northeast Section)		$ 1,832,000	$ 1,648,800	$ -	$ 183,200	$ -	$ -	$ -	$ -
	6	Future General Aviation Development (Phase II - Utility Infrastructure)		$ 1,022,000	$ -	$ -	$ -	$ -	$ 1,022,000	$ -	$ -
	13	Future Plan Plank Road Relocation (Phase II - Design)		$ 9,399,000	$ 231,400	$ 5,527,700	$ 639,900	$ 3,000,000	$ -	$ -	$ -
	I	Runways 13/31 - 4/22 Intersection Repairs		$ 1,022,000	$ 919,800	$ -	$ 102,200	$ -	$ -	$ -	$ -
			Subtotal	**$ 13,275,000**	**$ 2,800,000**	**$ 5,527,700**	**$ 925,300**	**$ 3,000,000**	**$ 1,022,000**	**$ -**	**$ -**
2019	1	Perimeter Road (Phase III - Plank Road Section)		$ 1,684,000	$ 1,515,600	$ -	$ 168,400	$ -	$ -	$ -	$ -
	6	Future General Aviation Development (Utility/Infrastructure)		$ 1,044,000	$ -	$ -	$ -	$ -	$ 1,044,000	$ -	$ -
	13	Future Plank Road Relocation - Phase III		$ 9,498,000	$ 344,800	$ 5,503,400	$ 649,800	$ 3,000,000	$ -	$ -	$ -
	23	Future Cell Phone Lot		$ 1,037,000	$ -	$ -	$ -	$ -	$ -	$ 1,037,000	$ -
	6	Future General Aviation Development (Area I - Apron Construction)		$ 1,044,000	$ 939,600	$ -	$ 104,400	$ -	$ -	$ -	$ -
			Subtotal	**$ 14,307,000**	**$ 2,800,000**	**$ 5,503,400**	**$ 922,600**	**$ 3,000,000**	**$ 1,044,000**	**$ 1,037,000**	**$ -**
2020	6	Future General Aviation Development (Utility/Infrastructure)		$ 1,066,000	$ -	$ -	$ -	$ -	$ 1,066,000	$ -	$ -
	13	Future Plank Road Relocation (Phase IV - Construction)		$ 12,263,000	$ 2,800,000	$ 5,536,700	$ 926,300	$ 3,000,000	$ -	$ -	$ -
	5	Removal of Old ASR Equipment		$ 131,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 131,000
	17	Future Hotel Development		$ 17,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 17,000,000
			Subtotal	**$ 30,460,000**	**$ 2,800,000**	**$ 5,536,700**	**$ 926,300**	**$ 3,000,000**	**$ 1,066,000**	**$ -**	**$ 17,131,000**
2021	6	Future General Aviation Development (Utility/Infrastructure)		$ 1,089,000	$ -	$ -	$ -	$ -	$ 1,089,000	$ -	$ -
	19	FAA Air Traffic Control Tower (ATCT) Redevelopment		$ 15,754,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,754,000
	14	Future Runway 31 Threshold Relocation/Recovery (Phase V - Plank Road		$ 7,589,000	$ 2,800,000	$ 4,030,100	$ 758,900	$ -	$ -	$ -	$ -
	18	Future Taxiway Intersection Re-Alignment		$ 1,233,000	$ -	$ -	$ -	$ 1,233,000	$ -	$ -	$ -
	6	Future General Aviation Development (Area I - Apron Construction)		$ 1,634,000	$ -	$ -	$ -	$ 1,634,000	$ -	$ -	$ -
			Subtotal	**$ 27,299,000**	**$ 2,800,000**	**$ 4,030,100**	**$ 758,900**	**$ 2,867,000**	**$ 1,089,000**	**$ -**	**$ 15,754,000**
			Total	**$ 98,880,000**	**$ 14,000,000**	**$ 26,135,500**	**$ 4,459,500**	**$ 14,942,000**	**$ 5,221,000**	**$ 1,037,000**	**$ 33,085,000**

Table 8-3
Mid-Term Capital Improvement Program (2022 - 2026)
Baton Rouge Metropolitan Airport

Federal Fiscal Year	Project Identification	Project Description	Funding Requirement	FAA Airport Improvement Program		State Aviation Trust Fund		State	Other	Third
				Entitlement	Discretionary	AIP Match	100% State	Capital Outlay	Airport Funding	Party Funding
2022	6	Future General Aviation Development (Area I - Hangar Construction)	$ 5,426,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,426,000
	10	Decommissioning/Removal of Taxiway 'E' and Runway 4R/22L	$ 819,000	$ 737,100	$ -	$ 81,900	$ -	$ -	$ -	$ -
	9	Future Runway 4L/22R Parallel Taxiway - Phase I	$ 5,008,000	$ 2,062,900	$ 2,444,300	$ 500,800	$ -	$ -	$ -	$ -
	1	Perimeter Road (Phase IV - Southwest Section)	$ 1,694,000	$ -	$ 1,524,600	$ 169,400	$ -	$ -	$ -	$ -
	6	Future General Aviation Development (Area I/II - Apron Construction)	$ 3,000,000	$ -	$ -	$ -	$ 3,000,000	$ -	$ -	$ -
		Subtotal	**$ 15,947,000**	**$ 2,800,000**	**$ 3,968,900**	**$ 752,100**	**$ 3,000,000**	**$ -**	**$ -**	**$ 5,426,000**
2023	9	Future Runway 4L/22R Parallel Taxiway - Phase II	$ 7,391,000	$ 2,800,000	$ 3,851,900	$ 739,100	$ -	$ -	$ -	$ -
	6	Future General Aviation Development (Area II - Apron Construction)	$ 2,956,000	$ -	$ -	$ -	$ 2,956,000	$ -	$ -	$ -
		Subtotal	**$ 10,347,000**	**$ 2,800,000**	**$ 3,851,900**	**$ 739,100**	**$ 2,956,000**	**$ -**	**$ -**	**$ -**
2024	9	Future Runway 4L/22R Parallel Taxiway - Phase III	$ 8,276,000	$ 2,800,000	$ 4,648,400	$ 827,600	$ -	$ -	$ -	$ -
	6	Future General Aviation Development (Area II - Hangar Construction)	$ 5,808,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,808,000
	6	Future General Aviation Development (Area II - Taxiway Infrastructure)	$ 3,020,000	$ -	$ -	$ -	$ 3,020,000	$ -	$ -	$ -
		Subtotal	**$ 17,104,000**	**$ 2,800,000**	**$ 4,648,400**	**$ 827,600**	**$ 3,020,000**	**$ -**	**$ -**	**$ 5,808,000**
2025	E	Airfield Lighting Rehabilitation	$ 5,415,000	$ 2,800,000	$ 2,073,500	$ 541,500	$ -	$ -	$ -	$ -
	16	Future Warehouse/Industrial Development - Phase I	$ 5,934,000	$ -	$ -	$ -	$ -	$ 1,934,000	$ 500,000	$ 3,500,000
	6	Future General Aviation Development (Area II - Apron Construction)	$ 2,967,000	$ -	$ -	$ -	$ 2,967,000	$ -	$ -	$ -
	I	Airfield Drainage Improvements - Phase I	$ 4,154,000	$ -	$ 3,738,600	$ 415,400	$ -	$ -	$ -	$ -
		Subtotal	**$ 18,470,000**	**$ 2,800,000**	**$ 5,812,100**	**$ 956,900**	**$ 2,967,000**	**$ 1,934,000**	**$ 500,000**	**$ 3,500,000**
2026	15	Airport Maintenance Relocation	$ 1,227,000	$ -	$ -	$ -	$ -	$ -	$ 1,227,000	$ -
	6	Future General Aviation Development (Area II - Hangar Construction)	$ 6,062,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,062,000
	B	Runway 13/31 Rehabilitation	$ 4,338,000	$ 2,800,000	$ 1,104,200	$ 433,800	$ -	$ -	$ -	$ -
	6	Future General Aviation Development (Area II - Taxiway Infrastructure)	$ 3,031,000	$ -	$ -	$ -	$ 3,031,000	$ -	$ -	$ -
	I	Airfield Drainage Improvements - Phase II	$ 4,243,000	$ -	$ 3,818,700	$ 424,300	$ -	$ -	$ -	$ -
		Subtotal	**$ 18,901,000**	**$ 2,800,000**	**$ 4,922,900**	**$ 858,100**	**$ 3,031,000**	**$ -**	**$ 1,227,000**	**$ 6,062,000**
		Total	**$ 80,769,000**	**$ 14,000,000**	**$ 23,204,200**	**$ 4,133,800**	**$ 14,974,000**	**$ 1,934,000**	**$ 1,727,000**	**$ 20,796,000**

Table 8-4
Long-Term Capital Improvement Program (2027 - 2036)
Baton Rouge Metropolitan Airport

Federal Fiscal Year	Project Identification	Project Description		Funding Requirement	FAA Airport Improvement Program		State Aviation Trust Fund		State	Other	Third
					Entitlement	Discretionary	AIP Match	100% State	Capital Outlay	Airport Funding	Party Funding
2027	21	Future Fuel Farm and Support Facilities		$ 2,348,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,348,000.00
	6	Future General Aviation Development		$ 1,858,000	$ -	$ -	$ -	$ -	$ 1,858,000.00	$ -	$ -
	11a	Future East General Aviation Development (Apron Expansion)		$ 8,285,000	$ 2,800,000	$ 3,000,000	$ 644,444.44	$ 1,840,556.00	$ -	$ -	$ -
	A	Runway 4L/22R Rehabilitation - Design		$ 1,239,000	$ -	$ -	$ -	$ 1,239,000.00	$ -	$ -	$ -
			Subtotal	**$ 13,730,000**	**$ 2,800,000**	**$ 3,000,000**	**$ 644,444**	**$ 3,079,556**	**$ 1,858,000**	**$ -**	**$ 2,348,000**
2028	A	Runway 4L/22R Rehabilitation - Construction		$ 7,839,000	$ 2,800,000	$ 4,255,100	$ 783,900	$ -	$ -	$ -	$ -
	6	Future General Aviation Development		$ 1,898,000	$ -	$ -	$ -	$ -	$ 1,898,000	$ -	$ -
	J	Air Carrier Ramp Rehabilitation		$ 3,164,000	$ -	$ -	$ -	$ 3,164,000	$ -	$ -	$ -
			Subtotal	**$ 12,901,000**	**$ 2,800,000**	**$ 4,255,100**	**$ 783,900**	**$ 3,164,000**	**$ 1,898,000**	**$ -**	**$ -**
2029	C	Taxiway 'A' Rehabilitation		$ 4,361,000	$ 2,800,000	$ 1,124,900	$ 436,100	$ -	$ -	$ -	$ -
	6	Future General Aviation Development		$ 11,611,000	$ -	$ 2,887,200	$ 320,800	$ 3,000,000	$ 1,939,000	$ -	$ 3,464,000
			Subtotal	**$ 15,972,000**	**$ 2,800,000**	**$ 4,012,100**	**$ 756,900**	**$ 3,000,000**	**$ 1,939,000**	**$ -**	**$ 3,464,000**
2030	11b	Future East General Aviation Development - Phase I		$ 10,964,000	$ 2,800,000	$ -	$ 311,111	$ 3,000,000	$ -	$ -	$ 4,852,889
	6	Future General Aviation Development		$ 6,426,000	$ -	$ 4,000,500	$ 444,500	$ -	$ 1,981,000	$ -	$ -
			Subtotal	**$ 17,390,000**	**$ 2,800,000**	**$ 4,000,500**	**$ 755,611**	**$ 3,000,000**	**$ 1,981,000**	**$ -**	**$ 4,852,889**
2031	12	Future General Aviation Apron Expansion (Phase II)		$ 7,526,000	$ 2,800,000	$ 1,500,000	$ 477,778	$ 2,748,222	$ -	$ -	$ -
	16	Future Warehouse/Industrial Development - Phase II		$ 6,679,000	$ -	$ -	$ -	$ -	$ 1,679,000	$ 500,000	$ 4,500,000
	11b	Future East General Aviation Development - Phase II		$ 10,795,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,795,000
	6	Future General Aviation Development		$ 2,699,000	$ -	$ 2,429,100	$ 269,900	$ -	$ -	$ -	$ -
			Subtotal	**$ 27,699,000**	**$ 2,800,000**	**$ 3,929,100**	**$ 747,678**	**$ 2,748,222**	**$ 1,679,000**	**$ 500,000**	**$ 15,295,000**
2032	22	Future East Apron Expansion (Phase III)		$ 4,948,000	$ 2,800,000	$ 1,653,200	$ 494,800	$ -	$ -	$ -	$ -
	6	Future General Aviation Development		$ 10,339,000	$ -	$ 3,101,400	$ 344,600	$ 3,000,000	$ -	$ -	$ 3,893,000
	11b	Future East General Aviation Development - Phase III		$ 5,514,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,514,000
			Subtotal	**$ 20,801,000**	**$ 2,800,000**	**$ 4,754,600**	**$ 839,400**	**$ 3,000,000**	**$ -**	**$ -**	**$ 9,407,000**
2033	D	Taxiway 'B' Rehabilitation		$ 3,778,000	$ 2,800,000	$ 600,200	$ 377,800	$ -	$ -	$ -	$ -
	6	Future General Aviation Development		$ 10,563,000	$ -	$ 3,168,900	$ 352,100	$ 3,000,000	$ -	$ -	$ 4,042,000
			Subtotal	**$ 14,341,000**	**$ 2,800,000**	**$ 3,769,100**	**$ 729,900**	**$ 3,000,000**	**$ -**	**$ -**	**$ 4,042,000**
2034	6	Future General Aviation Development		$ 15,108,000	$ 2,800,000	$ 3,885,300	$ 742,811	$ 3,000,000	$ -	$ -	$ 4,679,889
			Subtotal	**$ 15,108,000**	**$ 2,800,000**	**$ 3,885,300**	**$ 742,811**	**$ 3,000,000**	**$ -**	**$ -**	**$ 4,679,889**
2035	6	Future General Aviation Development		$ 15,434,000	$ 2,800,000	$ 3,968,100	$ 752,011	$ 3,000,000	$ -	$ -	$ 4,913,889
			Subtotal	**$ 15,434,000**	**$ 2,800,000**	**$ 3,968,100**	**$ 752,011**	**$ 3,000,000**	**$ -**	**$ -**	**$ 4,913,889**
2036	6	Future General Aviation Development		$ 15,768,000	$ 2,800,000	$ 4,054,500	$ 761,611	$ 3,000,000	$ -	$ -	$ 5,151,889
			Subtotal	**$ 15,768,000**	**$ 2,800,000**	**$ 4,054,500**	**$ 761,611**	**$ 3,000,000**	**$ -**	**$ -**	**$ 5,151,889**
			Total	**$ 169,144,000**	**$ 28,000,000**	**$ 39,628,400**	**$ 7,514,267**	**$ 29,991,778**	**$ 9,355,000**	**$ 500,000**	**$ 54,154,556**

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8.5 SUMMARY

As the Airport's traffic and operations continue to grow, it is logical to assume that available resources will increase. The addition of general aviation hangars and infrastructure, with the potential for additional industrial and commercial uses, brings the possibility of additional revenue from tenant leases, as well as fuel flowage and ground leases. This, coupled with other revenue-generating opportunities, positions the Airport to continue its success. Based on these factors, it appears that sufficient cash-flow exists throughout the planning period to fund the proposed capital program.

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Baton Rouge Metropolitan Airport
Master Plan Update

Chapter Nine
Airport Layout Plan

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CHAPTER NINE
Airport Layout Plan Package

The Airport Layout Plan (ALP) package is a series of drawings that reflects existing conditions as well as the preferred future development for a given airport. Using plan and profile views of the facility, the ALP provides a graphic portrayal of the written content found in an airport Master Plan.

The ALP package of drawings for BTR was created in accordance with the criteria set forth in the Federal Aviation Administration (FAA) Advisory Circulars (ACs) 150/5300-13 Airport Design and 150/5300-18 General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards. The content of individual sheets was determined using the guidelines found in AC 150/5070-6b, Airport Master Plans, Appendix G, Airport Layout Plan Drawing Set, and requirements contained in the FAA's ALP checklist.

As a part of this planning process, the Future Airport Layout Drawing (ALD) of the package is reviewed by the FAA from a regulatory and safety perspective. Following the receipt of FAA-approval, the Future ALD serves as the initial step in securing access to federal funding through the FAA for existing and future airport studies and construction projects.

The ALP package for BTR consists of the following drawings and can be found as Appendix G. The sections following the list of drawings describe each individual sheet in more detail:

- Cover Sheet;
- Data Sheet;
- Existing Airport Layout Drawing;
- Future Airport Layout Drawing;
- Airport Airspace Drawing;
- Outer Approach Plans;
- Runway Departure Surfaces;
- Inner Portion of Approach Surfaces;
- Future Inner Portion of Approach Surfaces;
- Terminal Area Plan;
- Land Use Drawing; and,
- Airport Property Map.

9.1 COVER SHEET

The cover sheet contains approval blocks, airport location maps and other pertinent information as required by local FAA District Offices and State aviation agencies.

9.2 DATA SHEET

The data sheet contains basic airport and runway data tables and includes:

- Wind Rose Information – Wind roses and corresponding wind data are provided for all weather conditions, Visual Flight Rules (VFR) conditions, and Instrument Flight Rules (IFR) conditions for each runway.
- Runway Protection Zone (RPZ) Data – The FAA defines this zone as an area off the runway end to enhance the protection of people and property on the ground. The data table outlines RPZ dimensions for existing and future runways.
- Airport Data Table – Geographical, operational, meteorological, and classification data are shown in this table for both existing and future airfield layouts.
- Runway Data Table – Physical, geometrical, and operational data for each runway are listed in this table. Data includes runway dimensions, runway classifications, wind coverage for each runway, maximum runway elevation, pavement types and loading strengths, runway gradients, approach and obstruction clearance slopes, runway approach categories, runway safety area dimensions, runway lighting and marking data, navigational aids data, approach visibility minima, and declared distances information.
- Runway End Data – Provides a detailed listing of existing and future runway end coordinates and runway Touchdown Zone Elevations (TDZ). The runway TDZ is defined as the highest point within the first 3,000 feet of a given runway end.
- Other Data – Notes that apply to the entire ALP package (e.g., North Arrow or other pertinent data such as FAA Airspace Approval Cases).

9.3 EXISTING AIRPORT LAYOUT DRAWING

The Existing Airport Layout Drawing (ALD) provides a general layout of the environment in and surrounding a given airport. It depicts existing facilities as well as nearby surroundings and is shown with a scale 1:500 feet. This drawing shows required facility identifications, labels, imaginary surfaces, RPZs, and Runway Safety Areas (RSAs).

Elements of the Existing ALD include airfield infrastructure such as runways, taxiways, aprons, and holding areas. The Existing ALD also includes passenger terminals, concourses, and access to these facilities, as well as existing General Aviation areas and aviation-related items.

Other features illustrated on the Existing ALD are: airfield navigational aids; maintenance facilities; and support infrastructure, such as buildings, roads, and fencing. The Existing ALD also includes the Airport property boundary, which depicts the geographical limits of the property owned by the Airport.

9.4 FUTURE AIRPORT LAYOUT DRAWING

The Future ALD illustrates the proposed airport configuration and recommended development of Airport facilities. It graphically depicts all of the elements of the Existing ALD and also includes proposed future development.

The Future ALD depicts proposed infrastructure requirements such as airfield pavement, safety surfaces, and critical areas. Other future elements shown on the drawing include terminal development, support facilities, building identification, access facilities, easements, and property boundary lines.

9.5 AIRPORT AIRSPACE DRAWINGS

The airport airspace drawings provide a depiction of the relationship between objects and navigable airspace. These drawings are developed for each runway on the airport, and they are divided into four separate elements – the Airport Airspace Drawing, the Outer Approach Plans, the Inner Approach Plans, and the Departure Surface Plans. Each element focuses on a different part of navigable airspace with the intent of capturing and assessing all pertinent areas surrounding an airport runway configuration to help evaluate and ultimately enhance safety from an airspace utilization standpoint.

An aerial photo was taken in October, 2015, to document the Airport and its surrounding environment. This aerial photo serves as a background source of information for the Inner Approach Sheets.

The electronic data was analyzed from a navigable airspace regulatory perspective, namely the FAA's 14 CFR Part 77 – Objects Affecting Navigable Airspace. Any object that constituted a penetration to a navigable airspace surface has been identified and described in the airspace drawings with an ultimate plan of action for the object.

9.5.1 AIRPORT AIRSPACE DRAWINGS

This drawing depicts obstacle identification surfaces for the full extent of the proposed Airport development. It depicts airspace obstructions that are not shown in the Outer Approach Plans, Inner Approach Plans or Departure Surface Plans. The Airport Airspace Drawing is shown at a scale of 1:2000 in plan view and depicts, through line work, the imaginary FAA Part 77 surfaces that are a part of the Airport Environs – Primary, Approach, Transition, Horizontal, and Conical Surfaces. These drawn surfaces are based on the existing runways as well as planned extensions thereto.

9.5.2 INNER APPROACH PLANS

These drawings contain the plan and profile views of the inner portion of the approach surface to the runway along with a tabular listing of pertinent objects (e.g., penetrations). The drawing also depicts the Threshold Siting Surface (TSS), which is located at the beginning of the full strength runway pavement or runway surface. The primary purpose of the TSS is to set criteria for determining the location and siting of a proposed runway or runway extension. That is, given an existing set of obstacles (terrain, vegetation, and man-made objects), the criteria may be used to determine the allowable location of a runway end. Currently, there are no obstructions to the TSS at BTR.

The extent of the approach surface and the number of airspace obstructions shown have, in some cases, restricted sheets to only one runway end or approach. Typically, the Inner Approach is limited to the Runway Protection Zone area. FAA guidelines require the labeling of the distance of a given approach slope until it reaches 100 feet above the threshold elevation. Depending on the approach slope applied, (e.g., 20:1, 34:1, 50:1 etc.), this application leads to a plan and profile distance ranging from approximately 2,000 feet to 5,000 feet from the runway threshold. Although not required, any objects outside of the approach slope that are within the adjacent 7:1 transitional slope stemming from the approach slope have also been identified.

For the profile views, a 1:200 foot horizontal scale and a 1:20 foot vertical scale is utilized pursuant to FAA requirements. Inner Approach Plans also depict the ground contours on centerline plus any significant natural or non-natural objects on its extended centerline and provide a top elevation for these objects. This plan set depicts such objects as buildings, roads, ditches, and natural features such as trees, lakes, and water bodies.

9.5.3 OUTER APPROACH PLANS

Generally, outer approach plans are profile views of approaches to runway ends that cover areas beyond the inner approach plans and terminate at the outermost distance of the approach. This outermost distance may range anywhere from 5,000 feet to 10,000 feet and ultimately up to 50,000 feet when considering a precision approach.

Similar to Inner Approach Plans, the approach surface is shown to lead all the way to the runway threshold or to a 200 foot offset from the runway threshold in a profile view. A tabular listing of pertinent objects and penetrations is presented. Objects that are near the approach slope but do not penetrate may also be listed. There is no plan view available for Outer Approach Plans.

Outer Approach Plans also depict the ground contour along the extended runway centerline plus any significant natural or non-natural objects located along the extended centerline and provide a top elevation for these objects. Objects illustrated on the BTR Outer Approach Plans include buildings, roads, ditches, and natural features such as trees, lakes, and bodies of water.

9.5.4 DEPARTURE SURFACE PLANS

These drawings contain the plan and profile views of the 40:1 departure surface portion of the runway along with a tabular listing of all pertinent objects/penetrations. The extent of the departure surface and the number of airspace obstructions have, in some cases, restricted sheets to only one runway end or approach.

For the profile views, a 1:1000 foot horizontal scale and a 1:100 foot vertical scale is used pursuant to FAA requirements. Departure Surface Plans also depict the ground contour along the extended runway centerline plus any significant natural or non-natural objects located along the extended runway centerline and provide a top elevation for these objects. Commonly shown objects include buildings, roads, railroads, ditches, and natural features such as mountains, trees, lakes, and rivers.

9.6 TERMINAL AREA PLAN

This plan is represented by a large-scale depiction of areas with significant terminal facility development. This drawing is an enlarged area of the passenger terminal area portion of the Future ALD. The scale for this drawing is 1:100 feet. A keyed legend identifies the prominent development in the terminal area and known building heights.

9.7 LAND USE PLANS

The Land Use Drawing depicts land uses within the property boundary and land uses and zoning in the area around an airport.

9.8 AIRPORT PROPERTY MAP

This drawing depicts the Airport property boundary, tracts of land acquired by the Airport, and the method of acquisition. It is utilized by the Airport and the FAA in planning development on the Airport and protecting the property for Airport use.

9.9 RECOMMENDED DEVELOPMENT PLAN

The culmination of the Airport Master Planning process is the Recommended Development Plan, which depicts the most favorable development option for the Airport. It is not included in the official Airport Layout Plan, but the projects shown on the Recommended Development Plan are depicted on the Future Airport Layout Drawing as stated in Section 9.4. The Recommended Development Plan includes improvements to the runway and taxiway system, expansion of other airside facilities, and preservation of the existing infrastructure. The proposed improvements, including the addition of General Aviation/Industrial Aviation hangars and apron, as well as, recovery/relocation of the Runway 31 threshold in conjunction with the relocation of Plank Road will allow the Airport to meet future demand requirements, while complying with current FAA design standards. Preferred support/ancillary facilities will assist with the operational efficiency of the Airport.

Proposed improvements in terms of roadways and vehicle parking areas will enhance Airport accessibility and will increase the level of service at the Airport. In an effort to provide for future expansion of the non-aviation revenue, the Airport has reserved space for future commercial development to the north of the airfield and south of the Airport Terminal. It is prudent to plan for additional compatible revenue sources on property that cannot be used for Airport operations.

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