In the previous chapter, airside and landside facilities required to satisfy the demand through the long range planning period were identified. The next step in the planning process is to evaluate reasonable ways these facilities can be provided. There can be numerous combinations of design alternatives, but the alternatives presented here are those with the perceived greatest potential for implementation.

Any development proposed for a Master Plan is evolved from an analysis of projected needs for a set period of time. Though the needs were determined by utilizing industry accepted statistical methodologies, unforeseen future events could impact the timing of the needs identified. The master planning process attempts to develop a viable concept for meeting the needs caused by projected demands for the next 20 years. However, no plan of action should be developed which may be inconsistent with the future goals and objectives of Gregg County, which has a vested interest in the development and operation of the Airport.

The development alternatives for East Texas Regional Airport can be categorized into two functional areas: the airside (runways, navigational aids, taxiways, etc.) and landside (hangars, apron, and terminal area). Within each of these areas, specific capabilities and facilities are required or desired. In addition, the utilization of airport property to provide revenue support for the airport and to benefit the economic development and well-being of the region must be considered.
Each functional area interrelates and affects the development potential of the others. Therefore, all areas are examined individually and then coordinated as a whole to ensure that the final plan is functional, efficient, and cost-effective. The total impact of all these factors on the existing Airport must be evaluated to determine if the investment in East Texas Regional Airport will meet the needs of the community, both during and beyond the 20-year planning period.

The alternatives considered are compared using environmental, economic, and aviation factors to determine which of the alternatives will best fulfill the local aviation needs. With this information, as well as input from various airport stakeholders, a final airport concept can evolve into a realistic development plan.

**AIRPORT DEVELOPMENT OBJECTIVES**

It is the goal of this effort to produce a balanced development plan to best serve forecast aviation demands. However, before defining and evaluating specific alternatives, airport development objectives should be considered. As owner and operator, Gregg County provides the overall guidance for the operation and development of the Airport. It is of primary concern that the Airport is marketed, developed, and operated for the betterment of the community and its users. With this in mind, the following development objectives have been defined for this planning effort:

- To determine the projected facility needs of airport users through the year 2037, by which to support airport development alternatives.
- To recommend improvements that will enhance the airport’s safety capabilities to the maximum extent possible.
- To recommend improvements that will enhance airport capacity to the maximum extent.
- To produce current and accurate airport base maps and Airport Layout Plans (ALP).
- To establish a schedule of development priorities and a program for the improvements proposed in the Master Plan.
- To prioritize the airport capital improvement program and develop a detailed financial plan.
- To develop a robust and productive public involvement throughout the planning process.

**REVIEW OF THE PREVIOUS AIRPORT MASTER PLAN**

The last Master Plan was adopted by Gregg County in June 2007, and included data gathered and analyzed during 2006. Table 4A is a summary of the major findings addressed in the 2007 Airport Master Plan.
<table>
<thead>
<tr>
<th>Facility/Program</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airfield Navigational Aids</td>
<td>Relocate navigational aids upon relocation of Runway 13 threshold. Install approach lighting for Runway 18 approach (if required).</td>
</tr>
<tr>
<td>Airfield Markings</td>
<td>Remark Runway 13-31 upon displacement of landing threshold.</td>
</tr>
<tr>
<td>Transient Aircraft Parking</td>
<td>Provide for expanded transient apron/rehabilitation as required.</td>
</tr>
<tr>
<td>Based Aircraft Apron/Tie-downs</td>
<td>Provide for expanded local apron as required.</td>
</tr>
<tr>
<td>Based Aircraft Hangars</td>
<td>Limited in-fill available on west side. Provide for east side expansion.</td>
</tr>
<tr>
<td>Aircraft Fueling</td>
<td>Reserve area for fuel farm expansion in current location.</td>
</tr>
<tr>
<td>Helicopter Facilities</td>
<td>Maintain existing parking positions on west side.</td>
</tr>
<tr>
<td>Maintenance Facilities</td>
<td>Reserve area for facility expansion near current facility.</td>
</tr>
<tr>
<td>ARFF Facilities</td>
<td>Program capital funds for replacement vehicles.</td>
</tr>
<tr>
<td>Airport Access</td>
<td>Access to be extended into new development areas.</td>
</tr>
<tr>
<td>Pavement Maintenance</td>
<td>Short Term – Rehabilitation of airport access roads and GA apron.</td>
</tr>
<tr>
<td>Land Acquisition/Easements</td>
<td>Land acquisition/easements identified for approach protection.</td>
</tr>
</tbody>
</table>

ARFF: Aircraft Rescue and Firefighting  
GA: General aviation  

### RUNWAYS

The 2007 Airport Master Plan concluded that Runway 13-31 met the requirements of aircraft in the current operational fleet, although the establishment of proper safety area on the northwest end of the runway required an 800-foot landing displacement on Runway 13 and the publication of declared distances (i.e., usable runway available for landing and takeoff) for this runway. This was accomplished following the completion of the planning effort. The project involved relocation of landing aids and lighting and remarking of the runway.
It was recommended that the approach to Runway 18 be upgraded with the installation of an instrument approach landing system that would require the installation of an approach lighting system to obtain runway visibility minimums below ¾-mile. Since then, an area navigation (RNAV) approach has been published to Runway 18 providing visibility minimums below one-mile without the need for the installation of an approach lighting system. However, this has created the need to establish a larger runway protection zone in the approach to Runway 18 and the need to enlarge the current aviation easement area north of F.M. 349. This area will need to be identified on updated ALP drawings included in the capital program after this planning effort.

It was noted in the last planning effort that a small number of aircraft may experience payload and/or stage length limitations when operating on Runway 18-36. Therefore, it was concluded that long range planning should consider a potential length of 7,300 feet on Runway 18-36. The extension was proposed on the south end of the runway and would require additional land acquisition and aviation easement purchases. The conclusion reached in the previous chapter of this planning update is that this extension is no longer justified with the transition to more efficient takeoff performance business aircraft that base on the west side and use this runway. All commercial airline aircraft (identified as the critical aircraft on the airfield in previous chapters) operate on Runway 13-31.

**TAXIWAYS**

Several recommendations were made regarding the taxiway system at the Airport. A partial parallel taxiway was planned at a runway separation distance of 400 feet on the east side of Runway 13-31. This taxiway was shown to provide access to additional hangar development that was proposed in the industrial airpark property. While additional hangars have not been developed in the industrial airpark as of this date (March 2018), the LeTourneau University aviation program contributes considerable training activity on the airfield, and the addition of runway exits and a partial parallel taxiway would benefit air traffic efficiencies on the airfield. However, an extension of this taxiway west of Taxiway N (as originally proposed) will conflict with the current location of the glide slope antenna which was relocated when the landing threshold on Runway 13 was displaced. Furthermore, a runway crossing at Taxiway D would create a “high energy” runway crossing in the middle third of the runway, and this should be avoided to reduce the potential for runway incursions. A crossing at Taxiway E would fall outside of the “high energy” area.

Other taxiways were considered during the planning effort but were not included in the final master plan concept. The only other new construction (other than the need for new hangar access taxiways) was recommended between the thresholds of Runways 13 and 18, and the realignment of Taxiways A and L, which were realigned to provide right-angled entrances onto the runway. Each of these projects have been completed. Taxiway H was also removed at the intersection of the two runways to avoid potential runway incursions.
AIRFIELD NAVIGATIONAL AIDS

With relocation of the landing threshold on Runway 13, it was necessary to relocate the approach lighting system and the glide slope antenna. While other improvements were recommended for the other runway approaches to provide instrument capability, the only upgrades have been achieved through the publication of new area navigation approaches (as noted earlier). Runway and taxiway lighting was rehabilitated on the airfield over the past decade.

LANDSIDE DEVELOPMENT

The 2007 Airport Master Plan considered some in-filling of conventional hangars on the west side, the development of a new hangar/apron area on the west side (south of the Martin hangar), small executive/T-hangar development on the east side of Runway 18-36, and hangar development in the industrial airpark area east of Runway 13-31. Most near-term development was assumed on the west side, and most long-term hangar development was tied to development of new areas on the east side of the airfield. In conjunction with this potential development on the east side, new access roads were proposed to access the new development areas.

New airport perimeter roads were constructed on the west and east sides of the airfield and drainage improvements were completed as recommended in the plan.

Terminal remodeling/expansion with a redesigned public parking lot was also undertaken over the past decade, consistent with the plan recommendations. The remodeled and expanded terminal is projected to meet the passenger needs throughout the planning period and meet the needs of airline equipment transitions over time.

PAVEMENT MAINTENANCE

Rehabilitation of runway and taxiway pavements have been on-going since completion of the last plan and will need to continue with completion of this planning update. The rehabilitation work on the runways was completed a decade ago, and both runways are expected to require rehabilitation within the next few years. Therefore, the Airport will need to pursue a pavement maintenance management program following completion of the master plan update to outline specific timing of improvements.

NO ACTION/RELOCATION ALTERNATIVES

Gregg County is charged with managing the Airport for the economic betterment of the community and region. Previous strategic planning undertaken for the Airport has identified several strengths of the region, including: availability of labor force, interstate access, utility supply (water and low-cost
electricity), and the quality of life in the Longview area. To pursue a “no action” alternative for the Airport effectively reduces the quality of services being provided to the general public and affects the region’s ability to support commercial and general aviation needs. Past studies have also documented that the Airport provides substantial economic benefit to the region through on-airport economic activity, capital projects, employment and earnings, and air visitors.

The Airport also serves as a vital link in the overall national airport system, which is important for both economic development and national security. The “no action” alternative is also inconsistent with the long term goals of the Federal Aviation Administration (FAA) and the Texas Department of Transportation (TxDOT), which are to enhance local and interstate commerce. Therefore, an overall “no action” alternative is not considered further in this planning effort.

Likewise, this study will not consider the “relocation of services” to another airport or development of a “new airport site” as viable alternatives. The development of a new commercial service airport is a very complex and expensive option. A new site will require greater land area, duplication of investment in airport facilities, installation of supporting infrastructure that is already available at the existing site, and greater potential for negative impacts to natural, biological, and cultural resources.

AIRSIDE PLANNING ALTERNATIVES

Generally, airside issues relate to those elements that contribute to the safe and efficient transition of aircraft and passengers from air transportation to the landside facilities at the Airport. This includes the established design standard for the Airport and runways, the instrument approach capability, the capacity of the airfield, the length and strength of the runways, and the layout of the taxiways. Each of these elements was introduced in the previous chapters and is summarized as follows:

- The Airport’s current critical design aircraft fall within the Airport Approach Category/Airplane Design Group (AAC/ADG) C-II category, represented by the commercial aircraft and business jets currently using the Airport. Future planning should not preclude the future capability of the Airport to accommodate ARC C-III. However, as presented in Chapter Two, the approach and departure reference codes (APRC and DPRC) describe the operational capabilities of the runways and adjacent taxiways where no special operating procedures are necessary. Therefore, the APRC and DPRC represent the most restrictive Runway Design Code (RDC) which can be implemented based upon instrument approach visibility minimums and runway-taxiway separations. The APRC is D-IV-2400 for Runway 13-31 and D-IV-4000 for Runway 18-36. The DPRC is D-IV for both runways.
- The 13-31/18-36 runway orientation provides 99.03 percent wind coverage in all-weather conditions and 98.59 percent coverage in IFR conditions. The annual operations on the airfield currently represent 50 percent of annual service volume (capacity), and safety would be enhanced with the addition of properly positioned runway exits at several locations.
Every effort should be made to preserve the instrument landing system (and current visibility minimums) to Runway 13 while maintaining the improved area navigation (RNAV) approaches to other runways—without the need to install additional on-field navigational aids or approach lighting systems.

All taxiway geometry should be improved whenever feasible, consistent with FAA Advisory Circular 150/5300-13A, Airport Design, September 28, 2012, as amended. Many of the taxiway design considerations (presented in Chapter Three) will enhance safety by providing taxiway geometry that reduces the potential for runway incursions.

Table 4B presents a summary of the primary airside and landside planning issues to be considered. Not all airside or landside elements will require a detailed alternatives analysis. The alternatives analysis is reserved for presenting viable solutions to specific problems. For those airside or landside elements where only one solution is reasonable or where no alternative is necessary, an explanatory narrative will be provided.

<table>
<thead>
<tr>
<th>TABLE 4B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airside and Landside Planning Considerations</td>
</tr>
<tr>
<td>• Placement of properly spaced exits on Runway 13-31 for aircraft exiting either side of the runway.</td>
</tr>
<tr>
<td>• Avoidance of crossing intersections in “high energy” sections of the runways.</td>
</tr>
<tr>
<td>• Protection of navigational aids and critical areas (e.g., ILS glide slope, remote transmitter and weather equipment) on the east side of Runway 13-31.</td>
</tr>
<tr>
<td>• Designation of west ramp as a non-movement area with the relocation of Taxiway G from the south end of Runway 18-36 to Taxiway B.</td>
</tr>
<tr>
<td>• Correct taxiway geometry consistent with FAA Advisory Circular 150/5300-13A, Airport Design, September 28, 2012, as amended (e.g., intersections, crossings, and apron access) to avoid potential for runway incursions.</td>
</tr>
<tr>
<td>• Align hangar access taxiways to allow potential aviation development based upon future hangar/tenant requirements maintaining cost efficiency and flexibility.</td>
</tr>
<tr>
<td>• Maintain control tower line-of-sight to all movement areas and primary airfield development areas.</td>
</tr>
<tr>
<td>• Identify all areas available for non-aviation related revenue support.</td>
</tr>
<tr>
<td>• Preserve areas for airport maintenance, fueling, terminal parking and ARFF.</td>
</tr>
</tbody>
</table>

**RUNWAY 13-31 CONSIDERATIONS**

Runway 13-31 meets the needs of all commercial and business aircraft currently using the Airport and projected to use the facility through the planning period. Runway exits are evenly spaced along the west side but are limited on the east side to Taxiways N, M, and A. When aircraft land on Runway 31 they must roll out 6,600 feet before exiting at Taxiway N when needing to access the LeTourneau University.
ramp, or exit (as traffic landing on Runway 31 must also do) along the west side at Taxiways E, D, or C and cross over to the east side on Taxiway N. The east side has been planned for additional hangar development in the past and will continue to be shown for development in this planning effort (discussion provided in subsequent section of this chapter). Therefore, additional exits and a partial parallel taxiway would benefit traffic on Runway 13-31 which must access the east side.

Since the FAA recommends that “high energy” intersections be avoided in the middle third of the runway, direct crossings should be avoided at Taxiways C and D. Taxiways N and E fall outside of the “high energy” section; therefore, a crossing can be created at Taxiway E with an intermediate exit midway between Taxiways E and N.

However, development along the east side of Runway 13-31 will be limited until infrastructure is extended into the area. The 2007 Airport Master Plan concept reflected aviation-related development along the east side of the runway throughout the airport industrial airpark, with nearly full build-out of the parcel. A portion of this area is currently used for navigational aids and weather equipment. Clear zones surrounding some of the navigational aids preclude co-locating aviation-related facilities in the same area. The most efficient areas for aviation-related development (using existing taxiways) will be adjacent to Taxiway K and east of Taxiway N, with roadway access from F.M. 349 or Jerry Lucy Road. Remaining areas within the airport industrial airpark can be assigned to activities not requiring taxiway access.

The layout presented in Exhibit 4A reflects the current/planned runway protection zones (RPZs) for Runway 13-31, glide slope critical areas associated with the current instrument approach on Runway 13 and building setback requirements (based upon a 35-foot tall structure). The RPZ is defined by the FAA to provide an area clear of obstructions and incompatible land uses to enhance the protection of people and property on the ground. The RPZs differ for approach and departure operations and for the landing displacement on Runway 13. The approach RPZ is further defined by the published visibility minimums to the runway (reference Table 1G for current approach data). It should be noted that while most of the RPZ areas fall within existing airport property, a few areas on each end of Runway 13-31 are located outside of existing property and should be protected with an avigation easement (as noted on Exhibit 4A). While the FAA recommends that all land within the RPZ be under airport ownership, avigation easements (in lieu of fee simple title) are considered sufficient to ensure control of designated airspace within the RPZ.

Also noted on Exhibit 4A is the runway visibility zone (RVZ) which is defined by the two intersecting runways. Any point five feet above runway centerline and in the RVZ must be mutually visible with any other point five feet above the centerline (and inside the RVZ) of the crossing runway. The shape of the RVZ is defined by the FAA in Advisory Circular 150/5300-13A, Airport Design, September 28, 2012, as amended. The only object noted inside the RVZ is the Maxwell Aviation Services hangar, which is below runway centerline elevation. However, if it is found that any portion of the building obstructs the line-of-sight based upon the preceding criteria, it will be noted on the Airport Layout Plan drawings (a final product of this study).
Line-of-sight from the control tower to Taxiway B (towards the southeast end of the runway) has frequently been obscured in the past by trees (outside of the existing airport property) due to the limited elevation of the tower and the tower’s distance from the centerline of the runway. Tree topping will remain a high priority to the southeast end of the runway, and building heights along Taxiway M may be limited to maintain line-of-sight.

**RUNWAY 18-36 CONSIDERATIONS**

Runway 18-36 meets the needs of all business aircraft based at the Airport and itinerant aircraft doing business in the area. As noted in the previous chapter, any further extension of this runway will need to be justified by critical aircraft stage length requirements and with the approval of the FAA. Therefore, it has been assumed in the alternatives analysis that, through the planning period, the runway will remain at its existing length.

However, since the runway now has published instrument approaches (which it did not have when the 2007 Airport Master Plan was undertaken), consideration needs to be given to the impact of lowering the visibility minimums on aircraft approaches even further. Current FAA rules require a primary surface width of 500 feet when visibility minimums are greater than or equal to ¾-mile (the lowest minimums on Runway 18 are currently ¾-mile). If visibility minimums are reduced below ¾-mile, then the primary surface width increases to 1,000 feet. This in turn affects the set-back requirements of taxiways and aircraft parking areas.

During the inventory of existing conditions (Chapter One), it was noted that a portion of Taxiway G (from the south end of the runway to where it intersects with Taxiway N) was a movement area (marked as such and controlled from the tower), with the remainder becoming an apron edge taxiway or non-movement area. The set-back from the movement area portion of the taxiway creates severe restrictions on aircraft movements and parking areas on the ramp. Since the existing separation of the taxiway/taxilane from the runway is 500 feet, it is possible to consider a relocation of the parallel taxiway to a point only 300-400 feet from the runway centerline. The two options have been reflected on Exhibit 4B.

The first option considers a continuation of current instrument conditions and published minimums (as low as ¾-mile). The RPZs at each end reflect both approach and departure conditions. On the south end, the approach and departure RPZs are the same size. However, on the north end, the approach RPZ is larger than the departure RPZ. The entirety of the RPZ on the south end is protected by current airport property or easement. On the north end, while the entire departure RPZ is protected, only a portion of the approach RPZ is fully protected with current airport property or easement. Furthermore, if Taxiway G is relocated from the ramp edge, FAA design standards specify it can be relocated to as close as 300 feet from runway centerline (as shown on Exhibit 4B).

The second option considers a potential lowering of the published minimums on Runway 18 to below ¾-mile. This enlarges the RPZ for approaches on Runway 18 and requires a minimum separation of the
parallel Taxiway G to 400 feet. This would provide 100 feet of separation from the parallel taxilane, which is five feet less than the current design standard for ADG II and may necessitate the remarking of the taxilane centerline. The recommended distance from the taxilane centerline to a fixed object is 57.5 feet. This in turn would net an additional 30-35 feet of usable ramp and allow for the entire ramp to become a non-movement area. Since the RPZ on the Runway 18 approach is bisected by a public road (F.M. 349), a more detailed FAA evaluation would be required to consider alternatives for removing a non-compatible situation if the visibility minimums were to be lowered below ¾-mile.

**Taxiway Considerations**

In addition to the parallel taxiways discussed previously, there remain several other taxiway considerations based upon current FAA design recommendations. These include limiting runway crossings in the middle third or “high energy” sections of the runways, limiting access directly from an apron onto a runway, and avoidance of confusing taxiway intersections near runways. Several hotspots were identified in the *2007 Airport Master Plan* and subsequently corrected. However, changes in FAA design standards in the past decade have recommended that additional consideration be given to a number of these situations, which can increase the chances of runway incursions on the airfield. The following have been noted:

- Taxiway B provides direct access from Runway 18-36 onto the commercial ramp and crosses Runway 18-36 in the “high energy” section of the runway. While relocation of Taxiway B to totally avoid a “high energy” crossing is not possible, its entrance onto the commercial ramp can be minimized if Taxiway B is realigned with Taxiway A at a separation from the Runway 13-31 centerline of 500 feet. This will require the realignment of a 3,000-foot section of the taxiway (from Taxiway L to Taxiway C). This alternative was initially examined in the *2007 Airport Master Plan* but was not retained in the final concept. It was introduced as an improvement that would alleviate potentially confusing intersections at Taxiway M with Taxiway B and the confluence of Taxiways B, N, and M. It has not been retained in this evaluation, since it does not remove the taxiway from the “high energy” section of Runway 18-36 or eliminate the connection between the commercial ramp and the runway.

- Taxiway N provides direct access from Runway 18-36 onto the west ramp and crosses Runway 18-36 in the “high energy” section of the runway. To avoid the potential for a runway incursion, direct runway access from the ramp can be avoided with the construction of Taxiway G in an alignment that is segregated from the ramp. Entrances to the ramp from the parallel taxiway can be placed to avoid direct access to the runway as noted on Exhibit 4B.

- Taxiways B, N and M intersect near midfield and were identified in the *2007 Airport Master Plan* as a confusing intersection. While relocation of Taxiway B (as discussed previously) provides an option, it is also possible to abandon a segment of Taxiway N between Taxiway B and Runway 18-36. This will eliminate the “high energy” crossing of Runway 18-36. However, it will also
≥ 3/4 Mile Visibility Minimums (Existing)

- 500’ x 1,700’ x 1,010’ Departure Runway Protection Zone

< 3/4 Mile Visibility Minimums

- 500’ x 1,700’ x 1,010’ Departure Runway Protection Zone
- 500’ x 1,700’ x 1,010’ Approach/Departure Runway Protection Zone
- 1,000’ x 3,500’ x 1,750’ Approach Runway Protection Zone
- 1,000’ x 1,700’ x 1,510’ Approach Runway Protection Zone
- 500’ x 1,700’ x 1,010’ Approach Departure Runway Protection Zone

LEGEND
- Airport Property Line
- Existing Easement
- Easement Required (Short Term - >3/4 mile)
- Easement Required (Long Term - <3/4 mile)
- Taxiway Pavement
- High Energy Section
- Pavement to be Removed
extend taxi times for aircraft attempting to access the west ramp from Taxiway B. A potential option is to provide a runway crossing farther south on Runway 18-36, outside of the “high energy” section, as noted on Exhibit 4B.

**Instrument Navigational Aids**

As identified in the previous chapter, the ILS approach on Runway 13 and the MALSR approach lighting system will need to be retained for all-weather capabilities when visibility minimums are below ¾-mile. Improvements in the global positioning system (GPS) approaches to each of the other runways followed the 2007 Airport Master Plan, with the Runway 18 and 31 RNP/LPV approaches receiving lower than 1-mile visibility minimums. These instrument landing improvements did not require approach lighting or added equipment on the airfield. The potential lowering of minimums below ¾-mile on Runway 18 was presented as an alternative on Exhibit 4B. The impact is two-fold: 1) the size of the RPZ increases from 49 to 79 acres, and 2) glide slope, localizer, and a MALSR lighting system (similar to the existing system on Runway 13) is required.

**All-Weather Perimeter Service Roads**

Vehicle service roads are significant at 14 CFR Part 139 commercial service airports. As noted in Chapter One (Table 1B), the Airport constructed perimeter service roads within the past five years to provide improved access on the airfield. However, based upon the final development concept in this planning effort, new roads (or realigned perimeter roads) may be required. Such roads provide access to critical operational areas for airport staff, security, and aircraft rescue and firefighting teams. Vehicle service roads also provide a means for unimpeded access to potential accident areas on the airfield, while reducing the possibility of a runway incursion. On a daily basis, airport staff is required to perform inspections of the Airport, and service roads provide the necessary access to accomplish this task.

There are several FAA documents providing guidelines defining the function and location of perimeter service roads.

FAA AC 150/5210-20, *Ground Vehicle Operations on Airports*, defines vehicle service roads as “a designated roadway for vehicles in a non-movement area.” Paragraph 7 of the AC states: “Airport operators should keep vehicular and pedestrian activity on the airside of the airport to a minimum...Vehicles should use service roads or public roads in lieu of crossing movement areas whenever possible.”

FAA AC 150/5300-13A, *Airport Design*, states in Paragraph 318(a), “It is recommended that the entire [Runway Safety Area] RSA and RPZ be accessible to rescue and firefighting vehicles such that no part of the RSA or RPZ is more than 330 feet (100 m) from either an all-weather road or a paved operational surface.”
FAA Order 5190.6B, FAA Airport Compliance Manual, states in Appendix R, Paragraph VII (I) (1) that an airport should “Look for opportunities to enhance safety, such as reducing runway crossings (ex., adding perimeter service roads, etc.)”

FAA Order 5280.5C, Airport Certification Program Handbook, Paragraph 421, Section 139.329(a)(1) states that a Part 139 certificate holder is responsible for “Limiting access to movement areas and safety areas to only those pedestrian and ground vehicles necessary for airport operations. Unless required to support a specific operational requirement on the airport, vehicles and equipment should use perimeter access [service] roads whenever possible” (FAA 2006).

FAA Order 5100.38D, Airport Improvement Handbook, Table P-3 provides several functions for airport service roads, including (FAA 2014):

- ARFF access to a runway or RSA;
- Airport operations and maintenance;
- Separation of ground vehicles and aircraft;
- Airport security;
- Incidental access to FAA-owned facilities; and
- Temporary construction access.

FAA Order 6940.1, Access Roads to FAA Facilities, Paragraph 3, states, in part, that, “At no time shall an access road be constructed parallel to a runway closer than 200-feet edge to edge and 100-feet edge to edge when parallel to a taxiway....”

The specific location of all-weather perimeter service roads parallel to the runway system will be dependent upon the final recommended concept. The perimeter service roads should be planned to meet the FAA specifications to the greatest degree feasible.

The “No Action” Option

To “no action” option keeps the Airport in its existing condition, without improvement to existing airside facilities, at a time when operations and the number of active aircraft based at the airport are continuing to increase. The forecasting effort in Chapter Two verified that the airport’s level of based aircraft has increased by 25 percent in the past decade, with the number of turbine-powered aircraft doubling. This indicates a desire by operators to base at this facility. It is also creating the demand for additional hangar construction, which is reflected in the 100,000 square feet of new conventional hangars constructed over the past decade. The “no action” option fails to meet the needs of commercial and general aviation operators on the airfield. Since the 2007 Airport Master Plan was completed and adopted by Gregg County, the Airport has received over $38 million in grants to expand and improve terminal facilities, rehabilitate the runways, improve airfield drainage, construct perimeter roads, acquire a new ARFF vehicle, rehabilitate taxiways and lighting, and enhance airport security. A “no action” option would ignore
the needs of existing and future aircraft operators and would not meet federally mandated standards for operations and maintenance.

**LANDSIDE PLANNING ALTERNATIVES**

**Hangar Expansion - West**

The first area identified for additional hangar development is on the west side, immediately west of the existing KRS hangars and north of Corporate Road. A taxiway from the main ramp will provide access into the area, which can handle a mix of small, medium, and large corporate hangars. Dovel Road will need to be crossed; therefore, gated access will be required for through traffic. However, it is possible to design a layout which will allow vehicular access to all hangars without the need to cross the access taxiway. A series of alternatives have been developed for this area.

The first alternative has been presented in **Exhibit 4C**. The area has been designed to ADG II design standards, which specify the taxilane widths (35 feet) and object free areas (115 feet in width) shown on the exhibit. The largest hangar (22,500 square feet) has been identified by the Airport for possible short-term occupancy by KRS. This hangar has the potential to be built with greater depth, but the width of the hangar will be limited by the current location of the KRS hangars and Dovel Road. Other hangars have been located on the exhibit for layout and evaluation purposes. It should be noted that the object free area (OFA) as shown prohibits aircraft from parking in front of the hangar—once out of the hangar, the aircraft would need to proceed onto the taxilane.

Except for the 22,500-square foot hangar, the remaining hangars are 5,600-7,500 square feet in size, with minimal building separation to maximize the available size of the parcel. A limited amount of vehicular parking space is provided with each hangar. An access road is provided parallel to Gardiner Mitchell Parkway, and connecting Corporate Road with Skyway Road. This road will serve all hangars on the very west side of the parcel, while Dovel Road will serve the interior parcels. A larger hangar/office structure is shown at the corner of Dovel Road and Corporate Road, with added vehicular parking. Total hangar space in this alternative is 106,500-127,500 square feet.

The second alternative is presented in **Exhibit 4D** and depicts a series of 15,000-square foot hangars (in addition to the 22,500-square foot hangar closest to KRS). Each of the hangars are spaced 100-feet apart and provide vehicular parking between the hangars. All of the 15,000-square foot hangars will have vehicular access from the public road connecting Skyway Road with Corporate Road. One hangar at the south end will have access from Corporate Road. Only the 22,500-square foot hangar will have vehicular access from Dovel Road. The total hangar space in this alternative is 97,500 square feet. All hangars will have the added capability of parking aircraft on the ramp in front of each hangar without penetrating the taxilane object free area (TOFA).
The third alternative has been presented in **Exhibit 4E**. While this alternative depicts a series of 15,000-square foot hangars, it includes an area on the south end of the parcel for an aviation-related development (without taxiway access) at the corner of Corporate Road and Dovel Road. The total hangar space in the alternative is the same as the second alternative, but the spacing between hangars has been reduced to 75 feet, limiting the amount of vehicular parking between hangars. As with the other two alternatives, an access road has been provided between Skyway Road and Corporate Road to serve the hangars that back up to Gardiner Mitchell Parkway.

**Hangar Expansion – East**

The existing hangar development on the east side of the airfield is accessed from Taxiway M and located immediately west of the control tower. Since the tower must maintain line-of-sight to the airfield movement areas along Taxiway M, the height of hangars in this area has been limited (but a clear line-of-sight from the control has been maintained). The building line that has been established for hangars in this area has been set at 750 feet from the centerline of Runway 18-36, which would be necessary to clear a transitional surface on a 7:1 slope if the building height was 35 feet above the elevation of the runway and the instrument approach to either end of the runway had visibility minimums below ¾-mile. If the instrument approach is as low as ¾-mile (but not below), then the critical clearance surfaces move 250 feet closer to the runway. The primary surface edges, building restrictions, and apron/tie-down opportunities have been noted on **Exhibit 4F**. Additional area is available north of the existing hangar structures but will be limited by dropping terrain in the area. It is noted that additional hangars may also be in-filled around existing structures. Approximately 200 feet is potentially available for parking apron and tie-downs in front of the current building line.

**Hangar Expansion – Northeast (Industrial Airpark Area)**

Several areas on the northeast side provide excellent opportunities for additional hangar development, as noted on **Exhibit 4G**. The first area is fronted by Taxiway K, with the existing service road providing access from F.M. 349. The potential hangar development area provides a linear arrangement with hangar depth of 100 feet, with variable door widths depending on hangar size. Auto parking can be provided between the hangars. Since the Annual Great Texas Balloon Race stages activities along Taxiway K each year, it would be preferable to stage hangar development from the west end, proceeding easterly. The area provides the capacity for an estimated 100,000 square feet of hangar space, with supporting vehicular parking areas.

The second area is immediately south of LeTourneau University and can support a fixed base operation (FBO) or other large hangar development. It is anticipated that this development area should be fronted by a large apron to support locally based and itinerant aircraft. Since a significant airfield drainage/detention basin is located closer to the intersection of Taxiway N and Runway 13-31, the development should remain closer to the LeTourneau University complex with access potential from Jerry Lucy Road.
LEGEND
- Airport Property Line
- Taxiway Object Free Area
- Potential Taxiway/Apron
- Potential Road/Parking
- Potential Hangar
- Pavement to be Removed
This page intentionally left blank
This page intentionally left blank
The hangars should be set back 350-400 feet from the TOFA to allow for drainage, entrance taxiways, and apron area. A portion of existing wooded area will need to be cleared to provide adequate area for hangar and vehicular parking areas. While new roadway construction will be necessary, an existing road can be upgraded to provide access from Jerry Lucy Road or be used to complete a loop road (as noted on Exhibit 4G).

A third area is noted along the proposed partial parallel taxiway, parallel to Runway 13-31. This potential hangar development area could also be developed for large hangars, although the building heights will need to remain under the transitional surfaces extending from the edge of the runway’s primary surface (500 feet from runway centerline). The building restriction line on Exhibit 4G provides for a 35-foot building height (750 feet from the runway centerline). If the maximum hangar height were to be as high as 45 feet, the required setback from the runway centerline would need to be 815 feet. Several of the larger hangars on the west ramp exceed 40 feet in height.

A large portion of the industrial airpark parcel remains available for non-aviation related revenue support—both along Jerry Lucy Road and F.M. 349. The following section will address the potential tenants that might want to locate in the industrial airpark area.

**DEVELOPMENT OF NON-AVIATION PROPERTIES**

Gregg County has remained very active with the marketing of the industrial airpark and foreign trade zone (FTZ) since its inception in the late 1990s. The airpark has excellent access from F.M. 349 and is designated as a foreign trade zone.

The Airport provides the region with several functions: scheduled commercial air service; air freight; storage, maintenance, and fueling support for general aviation aircraft; medical and law enforcement air support; and development sites for the commercial/industrial sector. While proximity or access to airport services may be desirable for some commercial/industrial firms, many of the potential tenants of the airpark may not have an aviation connection. However, the FTZ designation enhances its attractiveness to the potential tenant market.

The County can support a wide variety of discretionary uses on the Airport, including: airport-related commercial service businesses, aviation-oriented businesses, aviation/aerospace manufacturers, and non-aviation commercial/industrial uses.

**AIRPORT-RELATED COMMERCIAL SERVICE BUSINESSES**

The Airport can offer locational advantages for commercial businesses that neither support the airport operations nor provide services to users of the Airport, such as motels, restaurants, car rental agencies, service stations, and small executive offices that provide services and facilities for business travelers. In
many locations, these businesses are accommodated in off-Airport locations, especially where air transportation plays a relatively minor role in the overall commercial activity of the area. The location of the Airport within several miles of Interstate 20 makes it suitable for many of these uses.

**AVIATION-ORIENTED BUSINESSES**

East Texas Regional Airport has played a key role in providing a location for this type of business. These firms generally require direct access to the airfield, although some firms (such as parts suppliers and avionics repair shops) often operate from locations not directly accessible to the airfield. However, through-the-fence operations should not normally be allowed, or the County should enact an ordinance to regulate such proposals.

There is also a wide variety of companies that prefer to locate on airports because they are related to aviation through their products, markets, or operations. These include many firms that operate their own aircraft in addition to using commercial air services.

**AVIATION/AEROSPACE MANUFACTURERS**

Consolidation of the industry in recent years has created fewer options for aviation/aerospace manufacturers. With the recent resurgence of general aviation aircraft manufacturing, several of these companies have opened new manufacturing plants, although these facilities are frequently located in areas with an aviation-oriented labor base. Many manufacturers of specialized parts or components do not require sites on an airport, but their aviation orientation makes it a preferred location.

**NON-AVIATION COMMERCIAL/INDUSTRIAL USES**

Current County efforts to attract non-aviation industrial and commercial uses in the Airport Industrial Airpark reflect a continuing effort to create strong business and employment opportunities near the Airport and a favorable climate for other aviation-related businesses.

**LAND ACQUISITION CONSIDERATIONS**

As part of the alternatives analysis, consideration was given to ultimate property needs for the Airport, while considering natural boundaries. In the *2007 Airport Master Plan* additional property had been recommended on the south end of Runway 18-36 to support a runway extension and larger RPZ. This is not supported with the current planning effort. Additional property acquisition was also recommended in the approach to Runway 31. This is also not supported by current planning efforts, although a small
portion of the approach RPZ (not owned by the County or covered by avigation easement) should be protected with an avigation easement.

Likewise, with the change in the visibility minimums on the approach to Runway 18 and the displacement of the landing threshold on Runway 13, a portion of the existing RPZs north of F.M. 349 and west of Gardiner Mitchell Parkway are not currently covered by avigation easements. All other areas proposed for future development are owned by Gregg County.

In formulating future airport land use development alternatives, it will be necessary to consider the impact of FAA regulations on land acquired with FAA grants, the conditions under which Gregg County accepts federal grants, and the best use of available property in terms of location, facilities available, functional capabilities, and revenue potential.

Unlike development grants, assurances remain in effect permanently for land acquired with the Federal Aid to Airports Program (FAAP), Airport Development Aid Program (ADAP), or Airport Improvement Program (AIP), which are federal airport aid programs which have been used to acquire property for East Texas Regional Airport. It will be necessary to designate in this planning effort all property for aviation-related and non-aviation related development, to ensure that non-aviation related parcels do not reduce the Airport’s ability to meet aeronautical need.

**SUMMARY**

The purpose of the alternatives discussion is to present a variety of solutions to specific issues on the airside and landside which have emerged during the master planning process. The alternatives should be considered by the Planning Advisory Committee and the Gregg County representatives at the next scheduled meeting. Then, based upon feedback received by the consultant, a master plan concept will be developed which combines a composite of the airside and landside alternatives that have been considered. Following the presentation of a master plan concept, detailed cost estimates and phasing schedules will be developed, and updated ALP drawings will be prepared for subsequent FAA reviews utilizing the recently developed mapping.