Chapter Four

ALTERNATIVES

The previous chapter identified the airside and landside facilities needed to accommodate forecast growth at the airport. The next step in the planning process is to evaluate reasonable ways these facilities can be provided. There are countless combinations of options, but the alternatives presented are those with the 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 the best methodology available, it cannot be assumed that future events will not change these needs. Both the forecasts and the facility needs, identified in the previous two chapters, considered an unconstrained growth scenario for the airport. In this chapter, it is necessary to evaluate the alternatives with consideration given to the physical and environmental constraints of the airport.

Environmental issues such as noise and physical terrain constraints lead to limits on airport growth. Even with consideration of these constraints, it is feasible for the airport to grow modestly and accommodate increased operations within the 20-year scope of this plan.

The facility considerations for Johnson County Executive Airport (OJC) can be categorized into two functional areas: the airside (airfield) and landside (terminal, hangars, apron, and auto parking). Within each of these areas, specific facilities are required for safety and security. Other improvements are related to forecast demand at the airport. Although each functional area is treated separately, planning must integrate the individual requirements so they complement one another.
Alternatives considered are compared using environmental, economic, and aviation factors to determine which alternatives will best fulfill the local aviation needs. Particular attention is paid to meet safety and security needs.

**NON-DEVELOPMENT ALTERNATIVES**

When analyzing alternatives for development, consideration must first be given to options which do not assume accommodating growth of the airport. These possibilities include a “do nothing” or “no action” alternative in which the airport receives no improvements at all. Other non-development alternatives would include the possibility of transferring all aviation services to another airport and closing the existing facility. A final non-development alternative would include the construction of an entirely new airport in a new location.

When considering the non-development alternatives, the role and purpose of the airport, as defined by the FAA and the local sponsor, should be considered. In February 2000, the Johnson County Airport Commission updated and adopted a Vision Statement related to the airports under its jurisdiction. For Johnson County Executive Airport, the statement is as follows:

Executive Airport will continue to be a viable, full-service, general aviation airport serving the needs of business and recreational aviation in the Johnson County area, and will be self-sufficient in funding for operations and maintenance. In addition, one of the **Strategic Priorities** identified in the Vision Statement is to:

- Ensure the long-term viability and safety of Executive Airport by maintaining a high visibility, high quality airport and by being sensitive to the needs of the business traveler through the implementation of the airport master plan.

As discussed previously, the FAA classifies Johnson County Executive Airport as a reliever airport. Reliever airports provide vital services for general aviation aircraft that may otherwise be forced to utilize busy commercial service airports. Moreover, without the availability of the system’s reliever airports, Kansas City International Airport (MCI) could become constrained.

**“DO NOTHING” ALTERNATIVE**

The “do nothing” alternative essentially considers keeping the airport in its present condition and not providing for any type of improvement to the existing facilities. The primary result of this alternative would be the inability of the airport to satisfy the projected aviation demand of the airport service area. With no improvements, airport surfaces, such as the runway and taxiways, would deteriorate over time creating a potential safety hazard. Moreover, if additional landside facilities were not constructed, the airport’s aviation demand would be
forced to utilize less convenient, and possibly less suitable, airports.

Johnson County Executive Airport is a public use airport that has accepted federal grants in the past. As a condition of accepting these grant funds, the airport proprietor agrees to meet a number of regulations termed “grant assurances.” One of the grant assurances is a commitment by the airport proprietor to maintain any surfaces constructed with federal funds for the life of that surface, typically 20 years. The last grant accepted for improvements at OJC was in 1997.

If no action is taken to at least maintain those surfaces constructed with federal grants, the airport could be deemed in non-compliance of the grant assurances. Under these circumstances, the FAA could determine that the airport is ineligible for future grants and could take the further step of requiring a prorated return of the funds provided for the project.

The “do nothing” alternative also would result in a reduced or diminished economic impact on the community. Johnson County Executive Airport directly supports many individuals and families by providing jobs. The indirect impact on local business is also significant. By not maintaining the airport, airport business revenues generated by aircraft operations at the airport could decrease and jobs may be lost. Business travelers would be less likely to use the airport and could elect to relocate their business. In addition, this alternative will create an inability to attract certain businesses to the region that are seeking to locate in an area with adequate and convenient aviation facilities.

The long term consequences of the “do nothing” alternative extend beyond the immediate Johnson County area. Johnson County Executive Airport is part of a system of public airports that serve the aviation needs of the region. It is a reliever airport to Kansas City International and, as such, provides an alternative for smaller general aviation aircraft to avoid a busy commercial service airport with much larger aircraft. This is a significant safety consideration.

Johnson County Executive Airport has much to offer in terms of airfield and landside facilities. Without regular maintenance and additional improvements, existing and potential users and businesses could be lost. To propose no further development at the airport would adversely affect the long-term viability of the airport, resulting in negative economic impacts on the community. Therefore, the “do nothing” alternative is not considered prudent or feasible.

TRANSFER OF AVIATION SERVICES

It is not uncommon for those living near an airport, such as OJC, to support the transfer of aviation activity to other airports and then closing the airport. This has been an issue in the past and will likely be an issue in the future. Transferring aviation activity and closing an airport is a very expensive proposition.
Pursuing a course of action to close an airport would first require the airport to follow through with historically signed grant assurances. As previously mentioned, the airport’s runway was reconstructed in 1997. Thus, grant assurances for this project extend until at least 2017. If the airport were to be closed prior to this time, a portion of the funds used to reconstruct the runway would need to be repaid to the FAA.

It is also important to note that the airport has entered into a number of leases with airport tenants and businesses. Typically, these leases extend for 20 years or more. Closure of the airport would require the Johnson County Airport Commission to compensate and/or relocate these businesses as well. For those businesses where it is not practical to relocate, the County may have to purchase the business outright. Finally, violation of the leases by the Airport Commission could lead to significant legal action from airport businesses and other aviation groups which support airports across the country.

The airport supports employment for more than 100 people and their families. Closing the airport and relocating the services may lead to economic hardships for some of these people. Additional economic hardships could be felt by other area businesses that rely on the availability of Executive Airport.

An additional consideration is the capability of surrounding airports to absorb the over 200 based aircraft and the 90,000 annual operations that Johnson County Executive Airport currently supports. New Century AirCenter (IXD) would have the greatest potential to absorb some of this activity but years of planning and construction of facilities would have to precede any relocation of activity. The costs of either moving hangars from Executive Airport or building new hangars at IXD to serve those relocated would be extremely expensive, as IXD will have to also accommodate its own demands in the future. Attempts to distribute aircraft and activity to other regional airports such as Lawrence Municipal Airport, Charles B. Wheeler - Downtown Airport, and Miami County Airport would certainly reduce the convenience to aircraft operators.

Finally, the Vision Statement for Johnson County Executive Airport supports maintaining a safe and economically self-sufficient airport. For these reasons, a full transfer of aviation activity from Johnson County Executive Airport and the closure of the airport is considered to be economically deleterious to the County, its citizens, and the many people who benefit from the operation of the airport. Johnson County Executive Airport is fully capable of meeting its future demand while also being developed in a manner in which it can coexist with the surrounding community. As a result, this non-development alternative will no longer be considered.

**REPLACEMENT AIRPORT**

The alternative of developing an entirely new airport facility in the area to meet projected aviation demands was also considered. This alternative was
similarly found to be unacceptable primarily due to economic and environmental considerations. Land acquisition, site preparation, and the construction of a new airport in or near a suburban area such as Johnson County can be a very difficult and costly action.

All potential negative economic impacts discussed in the previous section would also apply to this alternative. In a situation where public funds are limited, the replacement of a functional airport facility would represent an unjustifiable loss of a significant public investment in a transportation facility.

From social, political, and environmental standpoints, the commitment of a large land area, presumably in southern Johnson County, must also be considered. The public sentiment toward new airports is generally negative, as a new airport typically requires the acquisition of several large parcels of privately-owned property. Even though the ideal location for a new airport may be undeveloped, the potential for impacts to wildlife habitat, wetlands, farmland, and cultural resources will typically be higher than at an existing airport site. A new site is likely to be more distant and less convenient to its users. Furthermore, the development of a new airport similar to Johnson County Executive Airport would likely take a minimum of seven years to become a reality.

One condition in which evaluating a new airport site would be feasible would be if the current site becomes incapable of accommodating aviation demand. The airport can continue to serve its demand, within its current configuration, through the foreseeable future.

Abandoning the existing Johnson County Executive Airport in favor of constructing a replacement airport is considered to be not feasible. The negative economic impact of moving businesses and aviation activity to a more distant and less convenient facility would be difficult to justify. Moreover, the immediate and costly outlay of precious County capital for closure of Executive Airport and construction of a replacement airport is likewise difficult to justify. For these reasons, a replacement airport in Johnson County will no longer be considered.

**REVIEW OF 1988 MASTER PLAN CONCEPT**

The 1988 Master Plan was developed based upon the premise of serving reasonable growth in aviation demand in the Johnson County area. The study recognized the basic limitations of Johnson County Executive Airport and examined means by which it could continue to operate as a safe, efficient facility that served a reasonable share of area aviation demand. The previous plan was also demand-based and was designed to allow the airport to respond to aviation demand as it presented itself. **Exhibit 4A** is a drawing depicting the primary recommendations of the draft plan.
The previous master plan indicated a potential need for a runway length of 5,500 feet to accommodate business jet aircraft. At the time, the availability of longer runways at both New Century AirCenter and Richards-Gebaur Airport provided the impetus for the final recommended plan calling for an extension of the runway to 4,500 feet. The proposed 401-foot extension was designed to accommodate the smaller business jets, leaving larger business jets the option of utilizing other area airports.

The previous plan also called for widening the runway to 100 feet from its current 75 feet. This recommendation was designed to meet FAA standards for both larger aircraft and improved instrument approaches. Since the runway extension was never completed, there was no need to widen the runway. Other features of the previous master plan included landside development with more T-hangars, conventional hangars, and apron tie-down space.

**KEY PLANNING ISSUES**

The commitment to continue developing the airport in a manner which meets aviation demand of the region will require continued maintenance of existing facilities and the addition of some new facilities. As outlined in the previous chapters, this plan will consider constrained development. Extension of the runway and taxiway system is not considered for this master plan. It is believed to be in the best interest of the County and its citizens to keep the airport in its current configuration. As a result, planning will consider those elements that can maintain safety and present the airport as the best B-II airport it can be. No additional runway extensions will be pursued, however, Federal Aviation Administration (FAA) criteria for other airfield elements may need to be addressed.

Johnson County Executive Airport does not meet FAA design standards for runway/taxiway separation. The east side parallel taxiway, Taxiway B, is separated from the runway by 212 feet. The FAA standard for an airport in airport reference code (ARC) B-II, such as the case at OJC, calls for the separation to be at least 240 feet. At the time of construction of parallel Taxiway B, the 212-foot separation was considered adequate.

Under current standards, airports that do not provide adequate runway/taxiway separation may not be eligible for improved instrument approaches. In fact, the instrument approach to Runway 36, with visibility minimums of three-quarters-mile, would likely not be approved today by the FAA because of the separation issue. Alternative analysis will consider improving the runway/taxiway separation to meet FAA standards.

Development of landside facilities to accommodate forecast growth in both based and transient aircraft activity should provide for the separation of activity levels. High activity areas including FBO hangars and aprons should be centrally located. Medium
Exhibit 4A

PREVIOUS MASTER PLAN CONCEPT

LEGEND

- Existing Airport Property Line
- Ultimate Airfield Pavement
- Ultimate Building
- Ultimate Road/Parking
- Pavement to be Removed
- Runway Protection Zone (RPZ)

Runway 18-36  4,098' x 75'
Ultimate Runway 18-36  4,500' x 100'

Taxiway A
Taxiway B

151st Street
Pflumm Road
activity areas such as smaller executive hangars should be grouped together as well. Low-activity areas such as tie-down aprons and T-hangar complexes should be set back the farthest from other activity centers.

With Johnson County Executive Airport being a suburban airport with residential housing on all sides, consideration will be given to developing neighborhood-friendly facilities. For example, creating a barrier with trees and berms in order to separate airport facilities from residential housing would be recommended, especially for facilities closest to the property line.

There are a number of local planning requirements that have been taken into consideration when developing the landside alternatives. The current fire code requires that hangars be separated by at least 50 feet. In addition, the doors, whether folding or sliding, to the hangars are required to face a direction other than public streets.

Improved visual navigational aids are also considered for all the alternatives. Runway 18 is proposed for the installation of Runway End Identification Lighting (REIL). Since there is no approach lighting to the Runway 18 threshold, REILs would be a cost-effective way to provide rapid identification of the runway end to pilots at night. The REIL system consists of two synchronized flashing lights laterally located to each side of the runway threshold. The lights are angled up for pilots to see.

All alternatives also consider the upgrade of the two-box Visual Approach Slope Indicator (VASI) to the more sophisticated Precision Approach Path Indicator (PAPI). Runway 36 is currently served by a medium intensity approach lighting system with runway alignment indicator lights (MALSR). With this system, upgrade of the VASI serving Runway 36 is not considered. Key planning considerations are highlighted on Exhibit 4B.

AIRPORT ALTERNATIVES

The following section describes three development alternatives. Each alternative is developed to address the forecast need for facilities to accommodate projected growth in aviation in the area and to maintain the airport at ARC B-II standards.

AIRPORT ALTERNATIVE 1

The airfield alternative, presented on Exhibit 4C, is designed to address deficiencies to FAA standards. As previously mentioned, airports with a critical aircraft in ARC B-II should maintain a runway to parallel taxiway separation of at least 240 feet. The east side partial parallel taxiway, Taxiway B, is situated only 212 feet from the runway. In order to bring this separation up to current standards, the taxiway should be relocated to a distance of 240 feet as depicted.

The east side partial parallel taxiway is also extended to the Runway 36
threshold. Extending the taxiway will provide two significant airfield improvements. First, it will increase airfield efficiency and, second, it will remove the need for aircraft on the east side to cross the runway in order to proceed to the Runway 36 threshold for a northerly take-off. This improvement is designed to improve efficiency and safety of aircraft departing from or arriving to the east side terminal area.

This alternative was discussed in the previous master plan but ultimately was not recommended, primarily due to the expense of implementation. To relocate and complete the east side parallel taxiway would require a significant amount of fill as the terrain drops as much as 15 feet from the taxiway. The segmented circle would also have to be relocated approximately 30 feet to the east.

It is not likely that the FAA would approve a project to simply extend the existing taxiway at the current separation. It is more likely that a taxiway extension would only be considered in conjunction with relocating the entirety of Taxiway B. This type of project would be eligible for grant funding from the FAA at a 95 percent basis, with the County providing their five percent share. The only other airfield improvement considered is the widening of Taxiway E from 25 feet, at its narrowest, to 35 feet. This would bring Taxiway E up to FAA design standard for ARC B-II aircraft.

Landside alternatives presented on Exhibit 4C include hangar development in the east and west terminal areas. Six T-hangar structures, each with a capacity of 14 bays, are proposed in the eastern T-hangar area. It should be noted that the terrain in this area drops significantly from the existing T-hangars, necessitating significant fill to ready the area for hangar development. This area also supports an existing drainage route for airport water run-off. The exhibit depicts a possible relocation of this drainage channel.

The only other east side landside development considered is the construction of an executive type hangar immediately south of the Life Net hangar. This location is ideal since utilities are very close and the adjoining apron is already available.

West side development is considered for both larger FBO-type conventional hangars and smaller executive hangars. The conventional hangars are nearest to the runway system as they would be high activity areas. The executive hangars are set back to the west of the Kansas City Aviation Center.

The executive hangars are proposed to be 60 feet by 60 feet. These types of hangars are popular with owners of a single larger aircraft or two smaller aircraft. These hangars would be considered for private development as would the larger conventional hangars.

AIRPORT ALTERNATIVE 2

Airport Alternative 2, as depicted on Exhibit 4D, attempts to limit the volume of earthworks necessary and still accommodate forecast demand for hangar space. The airside development
KEY PLANNING ISSUES

- Consider FAA standards for runway/taxiway design
- Provide for separation of activity levels
- Consider "good neighbor" strategies in conjunction with facility development
- Maximize available property
- Develop conventional, executive and T-hangars
- Analyze navigational aid needs
- Address drainage issues created by proposed facility development
AIRPORT ALTERNATIVE 1

RUNWAY 18-36 (4,098' x 75')

LEGEND
- Existing Airport Property Line
- Ultimate Airfield Pavement
- Ultimate Building
- Ultimate Road/Parking
- Pavement to be Removed

Conventional Hangars
Executive Hangars
T-Hangars
Departure Surface
Threshold Siting Surface
Drainage Route

SCALE IN FEET

151st Street
Pflumm Road

NORTH

0 300 600

Existing Airport Property Line
Ultimate Airfield Pavement
Ultimate Building
Ultimate Road/Parking
Pavement to be Removed

Johnson County Airport Commission
Exhibit 4C
AIRPORT ALTERNATIVE 1
AIRPORT ALTERNATIVE 2

RUNWAY 18-36 (4,098' x 75')

LEGEND

- Existing Airport Property Line
- Ultimate Airfield Pavement
- Ultimate Building
- Ultimate Road/Parking
- Pavement to be Removed

151st Street

Pflumm Road

SCALE IN FEET

Existing Airport Property Line
Ultimate Airfield Pavement
Ultimate Building
Ultimate Road/Parking
Pavement to be Removed

Conventional Hangars
Executive Hangars
T-Hangars

Threshold Sitting Surface
Departure Surface
is the same as in the previous alternative where the east side partial parallel taxiway is relocated to 240 feet from the runway and is extended south to the Runway 36 threshold.

The only hangar considered for construction on the east side is immediately adjacent the Life Net air ambulance operation, similar to the previous alternative. All other proposed hangar development in this alternative is in the west terminal area.

The west side development proposes three separate activity areas. The northernmost area is the development of an executive hangar complex. Each of these hangars is 80 feet by 80 feet. The adjoining apron is 100 feet wide in order to accommodate efficient aircraft taxiing for the wing span of the largest Group II aircraft (49 feet to 79 feet wingspans).

The executive hangar development is situated outside the FAA departure surface. The departure surface is actually a combination of the Obstacle Clearance Surface and the Standard Climb Gradient as described in FAA Order 8260.3B, TERPS - Departure Procedure Construction. The departure surface is 1,000 feet wide, centered on the runway beginning at the end of the usable pavement. It angles up at a 40:1 slope to a width of 7,512 feet at a distance of 12,152 feet. The FAA indicates that penetrations to this surface may require special operating departure procedures.

The area to the west of the Kansas City Aviation Center is considered for a low activity development of T-hangars. Five T-hangar structures are depicted on the exhibit, with each capable of having 10 aircraft bays. This number of T-hangars will meet the long term forecast need for 48 T-hangar positions. Considering the limited space available for hangar development without significant site preparation, this is an ideal location since it is set back and away from high activity areas.

The high activity area considered for development on the west side is to the immediate south of the Kansas City Aviation Center tie-down apron. This site is currently the location of the airport’s Automated Surface Observing System (ASOS). This critical weather information system would need to be relocated. Consideration for relocating the ASOS can be given to the south end of the airfield on the west side.

AIRPORT ALTERNATIVE 3

Airport Alternative 3 does not propose increasing the runway/taxiway separation to current FAA standards, as was the choice in the previous master plan. Current standards for runway/taxiway separation for runways with instrument approach procedures with visibility minimums not lower than three-quarters-mile require at least 240 feet. The airport currently has a number of three-quarter-mile approaches to the Runway 36 end that have been grandfathered in since the separation standard was last updated.

This alternative does not consider extending the east side partial parallel to the Runway 36 threshold. Without extending Taxiway B to the south, east
side users may experience occasional delays when attempting to cross the runway for a northerly departure. Runway crossing movements are inefficient and can cause operational delays.

Landside development associated with Airport Alternative 3 is depicted on Exhibit 4E. East side hangar development includes the addition of two 14-unit T-hangar structures. Both T-hangar structures would require some site preparation to bring the area up to grade. The existing drainage route would also need to be altered similar to that depicted on the exhibit.

In an attempt to maximize space available to the north of Air Associates, two large conventional hangars and an expanded apron is proposed to the north of the tie-down apron. This area is approximately 10 feet below grade and would require substantial site preparation. A taxiway would also be needed to access the runway. This taxiway would require the removal of the existing northern row of tie-down spaces. As a result, more apron is considered on the west side for tie-down purposes.

West side development includes a mix of low activity T-hangars set back and away from higher activity executive and conventional hangars. All development is again outside the departure surfaces.

**SUMMARY**

The alternatives presented in this chapter will provide for additional airport facilities under a constrained development plan. The runway is not planned to be extended as in the previous master plan to accommodate larger aircraft even though the justification likely exists to do so. This plan, however, is aimed at positioning Executive Airport to be the best ARC B-II airport it can be.

In order to accomplish this, the airport would likely need to continue to develop landside facilities and allow private aviation-related hangar development. Three alternatives have been presented, each of which will allow the airport to meet projected demand over the next 20 years.

The chapters to follow will refine these alternatives and present the selected airport alternative. The selected alternative may be a combination of elements from these alternatives. As previously discussed, these alternatives are not the only possible development patterns. They are development alternatives that meet FAA design criteria and accepted industry standards.
AIRPORT ALTERNATIVE 3

RUNWAY 18-36 (4,098' x 75')

LEGEND
- Existing Airport Property Line
- Ultimate Airfield Pavement
- Ultimate Building
- Ultimate Road/Parking

Departure Surface
Threshold Sitting Surface
Conventional Hangars
T-Hangars
Executive Hangars
Drainage Route

SCALE IN FEET

0 300 600

Existing Airport Property Line
Ultimate Airfield Pavement
Ultimate Building
Ultimate Road/Parking