



Chapter Four – SDL Long-Term Development Scenarios

INTRODUCTION

The goal of this Strategic Business Plan is to assist the City of Scottsdale in establishing a long-term “vision” or market focus for Scottsdale Airport (SDL) to aid in guiding future planning and development efforts associated with the upcoming Master Plan Update. The previous three chapters framed the study context and market development options by providing the following:

- A “snapshot in time” of the Airport as it currently exists as of late 2008-early 2009 through a detailed look at Scottsdale Airport in terms of its current operations, environs, and market area (Chapter One);
- A strategic-level overview of the breadth of market focus options available to SDL by presenting an abstract of the aviation industry and its primary segments, including a description of the operational relationships between each of those industry segments and their host airports (Chapter Two); and
- A mechanism by which the data presented in those previous chapters could be effectively distilled in order to isolate what is important and relevant for establishing that vision for Scottsdale Airport through identifying three reasonable market focus aviation activities for the Airport (Chapter Three).

Chapter Four represents the culmination of this strategic planning effort by presenting the range of practical implications associated with the three market focus options identified in Chapter Three. It should be noted that while some facility and policy implications were addressed in Chapter Three, those were based specifically on each of the three individual market focus options exclusive of each other. They did not necessarily consider how those options could carry over into a “real world” development scenario, such as how those market focus options could potentially interact and overlap with each other. For instance, establishing a primary general aviation focus for a given airport does not mean that some elements of commercial aviation and/or air cargo cannot still be accommodated by that airport. It simply means that this airport’s long-term market focus, or its “highest and best use,” is best placed on general aviation. However, if elements of those other market segments are also present (as is the case in many airports), there will likely be some interaction between those other market segments’ practical implications. These interactions are what are typically experienced in “real world” applications.

As such, this chapter presents some of those potential real world implications in the form of reasonable development scenarios that are based directly on each of the previously described market focus options. The purpose of this effort is to show how the implementation and integration of a particular industry segment focus could potentially affect the Scottsdale Airport in the long term from a practical perspective. It is anticipated that this additional level of analysis will provide the City of Scottsdale with an appropriate breadth of scope and level of detail for it to establish that long-term vision for the Airport.



DEVELOPMENT SCENARIOS PROCESS OVERVIEW

This section provides a brief description of the primary considerations examined in the chapter with respect to each of the potential development scenarios. It is important to note that there could be additional considerations that could impact any of these scenarios in a variety of manners in a real world application. However, for the purposes of this analysis, the range of primary considerations described below is deemed reasonable for providing a sufficient level of detail for establishing a long-term vision for Scottsdale Airport. (Additional levels of analysis would best be considered within the context of the actual Master Plan Update, which would be the appropriate forum for continued analysis.)

It should also be acknowledged that much of the information included in this analysis has been previously presented in greater detail in earlier chapters of this plan. As such, this analysis reflects the data at a fairly high or strategic level in order to provide focus on the principal issues and themes, avoiding redundancy. Additional levels of detail are provided where appropriate. Finally, since this analysis is based on potential considerations for a range of potential development scenarios, it should be noted that many of the results are fundamentally subjective in nature. Although specific, supporting data is included where necessary, the conclusions of this analysis are ultimately subject to the evolving circumstances of the aviation industry and the Scottsdale market area.

Airport Role Implications

Airports play a variety of different functional roles and contribute at varying levels in meeting the transportation and economic needs on national, state and local levels. Additionally, within the aviation industry itself, airports meet the demands of the primary industry segments (general aviation, commercial air service, and air cargo) to varying levels as well. Understanding the various roles that an airport currently plays or should play in meeting its targeted market demand is essential for it to be developed with facilities and services appropriate to fulfilling its long-term role.

For Scottsdale Airport, the development scenarios examined below all have the potential for fulfilling demand requirements from each of the primary aviation industry segments to varying degrees. However, the key consideration is determining the appropriate mix and identifying functional overlaps in that mix. Just as a commercial service focused airport will often also accommodate levels of general aviation and air cargo activities, a general aviation focused airport also has the potential to accommodate both commercial and air cargo activities. It is important to recognize that accommodating these activities is not necessarily mutually exclusive, but is more of a function of facility capabilities, market demands, operational requirements and administrative policies. Therefore, the analysis below describes the potential implications that each development scenario could have on the primary aviation industry segments with respect to Scottsdale Airport and how that could impact the Airport's ultimate long-term role.

Airport Facility Implications

The development of airport facilities is directly related to the industry segment, and the aircraft types and operational levels that an airport is seeking to accommodate. In terms of the Scottsdale Airport development scenarios, the airport facility implications associated with each scenario is driven by a variety of factors that include aircraft type, activity levels, fleet mix, and standard facility requirements associated with each industry segment. These implications are described in broad terms and on the basis of airport design requirements as well as industry standards with respect to the individual segments. These facility implications are an important consideration since they typically represent the primary component of an



airport capital improvement plan. (Note that greater facility details are provided in Chapter Three and will be generated as part of the future Master Plan Update.)

Additionally, for the purposes of this analysis, any cost implications associated with the development scenarios will be based solely on those facility requirements that are above and beyond that which is detailed in the first development scenario (Scenario 1 – Small to Mid-Sized Corporate Aircraft Market Focus). This is due to the fact that the first scenario largely reflects the Airport’s current operational role/patterns, and has been assumed to serve as the baseline for future development at the Airport. Therefore, only that additional development required under the other development scenarios that exceed the baseline will be addressed in the form of order-of-magnitude costs.

Airport Operational Implications

Operational implications at an airport can encompass an extensive and diverse number of elements ranging from aircraft operations to air traffic control to community relations. With respect to the Scottsdale Airport development scenarios, the primary operational implications examined include general airport operational implications, regulatory implications, generalized potential financial/revenue/economic implications, and generalized potential stakeholder implications. Again, much of this information is subjective in nature, but nevertheless important to review with respect to generating a long-term vision for Scottsdale Airport.

DEVELOPMENT SCENARIOS ANALYSIS

This section presents four development scenarios that reasonably represent how each of the three market focus options presented in the previous chapter could be realized at Scottsdale Airport from a practical perspective. Specifically, the four potential development scenarios for Scottsdale Airport are based directly on the three market focus options identified in Chapter Three.

1. *Scenario 1 - Small to Mid-Sized Corporate Aircraft Market Focus*
2. *Scenario 2 - Small to Mid-Sized Corporate Aircraft Market Focus with Adjusted Administrative Weight Restriction*
3. *Scenario 3 - Small to Large-Sized Corporate Aircraft Market Focus*
4. *Scenario 4 - Commuter Air Service Market Focus*

(It should be noted that Scenario 2 is based on the same market focus option as that of Scenario 1, and is nearly identical except for a proposed change in the administrative weight restriction.)

Scenario 1

Small to Mid-Sized Corporate Aircraft Market Focus

Scenario 1 is directly based on *Market Focus Option 1 - Small to Mid-Sized Corporate Aircraft* and reflects the operational patterns currently experienced at Scottsdale Airport. Note that these are the same operational patterns that have clearly made Scottsdale Airport the dominant airport within this industry segment in the Phoenix metropolitan area, as well as a national leader in the industry. This focus is based on accommodating all general aviation aircraft ranging in size from small piston-engine aircraft to mid-sized corporate jets, with some large corporate aircraft activity.



However, there are potential concerns for Scottsdale Airport with respect to maintaining its dominance within this market segment due to the increasingly aggressive competition presented by other area airports that can accommodate heavier aircraft operating weights, and offer enhanced services, available development lands, and other incentives. The Gulfstream IV has been identified as being the design aircraft for this option/development scenario. The only potentially significant change proposed as part of this option is that of reducing the Airport's instrument approach minimums to $\frac{3}{4}$ -mile visibility, as opposed to the current 1-mile visibility minimum requirement. (Note that this visibility reduction has been consistently proposed by several other prior planning studies for the Airport to enhance its operational capabilities. The inclusion of this reduction is a continuation of that recommendation.)

Airport Role Implications

General Aviation

In this development scenario, corporate general aviation will continue to be the primary focus of the Airport, although its ability to meet the demands of the growing large general aviation aircraft fleet (i.e. Global Express, Gulfstream V, etc.) will continue to be limited due to the administrative weight restrictions established by the City of Scottsdale. With this general aviation market vulnerability, increased competition within the market area has the potential to create a long-term problem for Scottsdale Airport, particularly if the inability to service those larger general aviation aircraft were to become a real competitive disadvantage for the Airport. Specifically, this last point could be realized if these large corporate aircraft were to become a significant enough component of the industry (in terms of numbers, operations, or airport/FBO revenue potential) that they could lead a migration of corporate aircraft activity away from Scottsdale Airport due to the lack of accessibility for this market segment. Given that circumstance, a competing airport seeking to capture a percentage of the large corporate aircraft market in the Phoenix metro area could leverage this accessibility issue against Scottsdale Airport by providing appropriate facilities (i.e. runway length, no weight restrictions, etc.) and services (i.e. FBO, maintenance, storage, etc.) for the full range of corporate aircraft, including all large aircraft. Simply put, it could provide competing airports with an opportunity to gain market share at the expense of Scottsdale Airport.

Regardless, it should also be restated that Scottsdale Airport has benefited significantly from having been located within a tremendously attractive destination locale with "brand-name" recognition. In essence, Scottsdale Airport has been the primary point of access for corporate aircraft to this highly attractive destination within the Phoenix metropolitan area as much due to its location as its facilities and services. However, as demographics and economics continue to change and similar demographic and economic conditions are prevalent in other areas of the Valley including to the west and south, airports within those areas will eventually become more attractive to many users. While this should be anticipated as part of the natural development process within the Phoenix area, it should be a concern for Scottsdale Airport.

Finally, since this development scenario essentially reflects Scottsdale Airport's current role, it would remain consistent with the Airport's current operational patterns. Therefore, the types of general aviation aircraft and activities currently being experienced at the Airport would continue to evolve along its current development track, but with the potential for corporate aircraft operational numbers to stagnant or decline over the long term.



Practical Implications: Scenario 1 would maintain Scottsdale Airport's current general aviation role, focus and operational patterns as a GA reliever airport with a primary focus on corporate aviation.

Commercial Air Service

In Scenario 1, there will be no formally established scheduled air carrier operations at Scottsdale Airport. However, as noted in the previous chapter, the Airport could realize some form of commercial air service through enhanced air charter or air taxi service beyond that which is already offered at the Airport. This commercial air service could take the form of an air taxi type business model, similar to that currently being tried by several companies based on VJ aircraft. If that model ultimately proves to be viable for US markets (based on VJs or not), a company utilizing that model could potentially provide direct access to many of those markets considered to be viable for Scottsdale Airport. Additionally, this type of service (i.e. point-to-point with direct access to diverse destinations, including other high-end markets) would fit into the existing character and clientele of Scottsdale Airport.

Finally, it is also important to recognize that from airport facility and operational perspectives, nonscheduled operators with aircraft seating fewer than 30 seats (such as those currently operating at the Airport as well as any potential air taxi service) would not trigger Part 139 requirements. Triggering Part 139 would be a primary concern for the Airport in that it could impose significant facility, operational and financial requirements on Scottsdale Airport.

Practical Implications: Scenario 1 would maintain Scottsdale Airport's current form of commercial air service (air charter), with the potential for enhancing its service level through the establishment of a point-to-point air taxi service business model.

Air Cargo

In Scenario 1, as is the case with all of the scenarios, air cargo will continue to operate as it traditionally has at Scottsdale Airport - as part of the current general aviation fleet. If market conditions develop such that a dedicated cargo operator sought to enhance air cargo activities at the Airport, it would likely be in the form of a slightly larger aircraft (as described in the previous chapter), but would nevertheless still be capably handled within the Airport's current general aviation service and facility infrastructure.

Practical Implications: Scenario 1 would maintain Scottsdale Airport's current form and level of air cargo operations.

Airport Facility Implications

Since Scenario 1 is essentially based on the Airport's existing operational patterns, its facility implications will largely remain as they are today. Its design aircraft will remain the same (Gulfstream IV), resulting in the Airport maintaining its current FAA modification to standards with respect to airport design requirements. An exception to this could center on the proposed reduction of approach minimums (from 1-mile visibility to $\frac{3}{4}$ -mile visibility), which has been reflected in previous master planning efforts and would result in an increased Runway Protection Zone requirement and an FAR Part 77 primary surface that will double in width (from 500 feet to 1,000 feet), as described in Chapter Three. These design requirement changes have the potential to impact the Airport's existing facilities and would have to be examined in detail within the upcoming Master Plan Update to determine the cost/benefit of such an action, as well as potential alternatives to that action.



From a facility development perspective, the Airport would continue to pursue maximizing the efficiency of its available lands and associated Airpark lands for the benefit of its general aviation base. Since the fundamental basis of this development scenario is supporting corporate aviation activities, development on and around the Airport should be focused on providing facilities to support and promote small to mid-sized corporate aircraft. Small general aviation would continue to be accommodated as it traditionally has at the Airport, as a valued stakeholder and supporter of development. Any air cargo operations currently experienced would likely continue in their current fashion and any potential increase in aircraft size would simply result in larger aircraft parking spots. No additional infrastructure would be required. Finally, since operational patterns at Scottsdale Airport would remain on the current track, it is not anticipated that community and stakeholder considerations would exceed current levels. In short, long term development at Scottsdale Airport would remain consistent with its historical and current development track. Therefore, no additional facility costs would be anticipated beyond that which would be expected as part of the current development track of the Airport.

With respect to the existing terminal building, this development scenario would likely provide for its potential aviation-related utilization only through a commercial air service operation, as described above. This could take the form of an air charter or an on-demand air taxi service if the demand for those services were to become significant enough. However, since air charter services are currently provided at the Airport through its existing FBO network, the air taxi service option would appear to be the most viable opportunity, particularly if that operation were to be based at the Airport. (In fact, transient air taxi aircraft could also simply utilize the Airport's existing FBO network and would likely not require use of the terminal building.) Also note that any based air taxi operation would also likely require additional facilities beyond the terminal building, such as office space and hangars. In lieu of an air taxi operation, use of the existing terminal building would likely be limited to area market demands (i.e. office space, etc.) that may or may not be aviation-related.

***Practical Implications:** Scenario 1 would maintain Scottsdale Airport's current track for facility development, which includes, among others, the following key considerations:*

- *Maintain the existing design aircraft and the existing FAA modification to standards with respect various airport design requirements.*
- *Improve instrument approach to airport by reducing minimums, resulting in potential facility and airport design implications (i.e. RPZs, Part 77, etc.)*
- *No additional facility costs would be anticipated beyond that which would be expected as part of the current development track of the Airport.*
- *Potentially utilize the existing terminal building and/or supporting facilities for use by an air charter or on-demand air taxi service if the demand for those services were to become significant enough.*

Airport Operational Implications

From an operational perspective, since Scenario 1 would maintain Scottsdale Airport's current operational procedures, with the exception of reducing its instrument approach visibility minimums, no significant operational changes would be anticipated. The reduction in visibility minimums would not change the aircraft fleet mix and representatives of the ATCT have already stated that they could accommodate any such changes. In effect, the Airport would maintain its current standard operating procedures.



One of those standard procedures that would remain unchanged is the operation of larger corporate aircraft under FAA operational restrictions or placards at the Airport. As discussed previously, Scottsdale Airport currently has a City of Scottsdale administrative restriction in place that precludes aircraft with FAA-certified maximum takeoff weights (MTOW) of more than 75,000 pounds from operating at the Airport. (It is understood that the current pavement strength could accommodate aircraft with MTOWs of greater than 75,000 pounds, particularly when considering the anticipated limited frequency of such operations). In response to this restriction, some operators/manufacturers of larger aircraft with a MTOW of greater than 75,000 pounds (i.e. Gulfstream V, Global Express, etc.) have successfully lobbied the FAA into permitting these aircraft to operate with a reduced certified MTOW under a specific placard, thereby allowing them to operate at the Airport. Since these placards are issued by the FAA, the Airport has no choice but to abide by them and allow those aircraft to operate at Scottsdale.

Practical Implications: Scenario 1 would maintain Scottsdale Airport's current operational procedures and patterns, including accommodating larger corporate aircraft with FAA operational restriction placards.

Airport Financial Implications

From a financial perspective, Scenario 1 would not result in significantly different operational levels; therefore, it is reasonable that the financial performance of the Airport would remain relatively consistent with historical trends. However, there are two additional considerations worth noting. First, the possible establishment of a based, on-demand air taxi service provider at Scottsdale Airport could provide some additional financial benefits for the Airport since it would be a new airport activity, would potentially add new revenue streams (i.e. commercial air service, fuel, rent, etc.) and could at least partially occupy the existing terminal building, as well as generate local economic benefits ancillary to the service itself. (It is also important to take care not to overstate any potential, since this particular business model remains unproven, does not currently exist at the Airport, and would likely have only a minimal impact on the Airport's financial condition.)

Second, there exists the potential that over time the Airport will realize a negative financial impact resulting from its competitive disadvantage with respect to large corporate aircraft that could erode its current market share. These aircraft could be lost to other airports that do not impose aircraft weight operating limitations, allowing unfettered access to their airports and possibly luring both based and transient aircraft operators away from Scottsdale Airport. Additionally, it should be noted that even with respect to those aircraft with approved operational placards that allow them to operate at the Airport, Scottsdale cannot maximize their potential financial benefit since those aircraft cannot take on full fuel loads due to the limitations of the operational placards.

Practical Implications: Scenario 1 would not significantly alter Scottsdale Airport's current financial position or track, although there could be concerns in the long term with respect to competitive disadvantages regarding larger corporate aircraft.



Scenario 2

Small to Mid-Sized Corporate Aircraft Market Focus with Adjusted Administrative Weight Restriction

Through discussions during this study process, Scenario 2 was developed as an alternative to Scenario 1, in that the two scenarios are identical with the exception that Scenario 2 integrates an adjustment to the aforementioned administrative aircraft weight restriction. As suggested previously, Scottsdale Airport could soon find itself at a competitive disadvantage in terms of accommodating larger corporate aircraft that have MTOWs of greater than 75,000 pounds because of that restriction. While the FAA's decision to issue operational restriction placards for specific aircraft models has somewhat offset this concern on a limited basis, it has not eliminated it. (It should also be noted that this procedure also requires the operator to search out this placard, placing additional burden on the operator to simply fly in to Scottsdale Airport.)

As such, an option for addressing this concern lies in the potential for the City of Scottsdale to raise the weight restriction at the Airport just enough to accommodate the larger general aviation corporate aircraft, but not enough to permit operations by the large commercial air service-size aircraft. It has been identified that the Airport's existing runway pavement strength is capable of accommodating MTOWs of no more than 100,000 pounds, far below the weight requirements for large commercial service-size aircraft but still adequate to accommodate the newer large corporate jet aircraft. Therefore, the City's administrative weight restriction could reasonably be raised to reflect the assumed runway pavement strength of 100,000 pounds without concern that such a modification would undermine its original intent to preclude large commercial service aircraft activities at the Airport. (This maximum pavement strength figure is an assumption and would require verification through field testing.)

Finally, two things must be clearly stated with respect to this scenario. First, the aircraft that would be directly impacted by this weight restriction adjustment (i.e. Gulfstream V, Global Express, etc.) already operate at Scottsdale Airport through the aforementioned FAA-issued operational restriction placards; therefore, the fleet mix associated with this scenario would be consistent with current conditions. Second, due to progressive advancements in aircraft and engine technologies, it is a fact that these newer and larger types of corporate aircraft operate in far cleaner, quieter (Stage 4 aircraft), and more efficient capacities than older, smaller corporate jet aircraft. Allowing for these newer aircraft to operate at their full capacity at Scottsdale Airport will essentially promote cleaner and quieter aircraft operations.

Airport Role Implications

This scenario alternative completely reflects all elements of Development Scenario 1 other than the weight restriction adjustment; therefore, all airport role implications will be consistent with the previous scenario.

Practical Implications: Development Scenario 2 would raise the City of Scottsdale's weight restriction at the Airport just enough to accommodate larger general aviation corporate aircraft, but not enough to permit operations by large commercial air service aircraft. The airport role implications for Development Scenario 2 largely reflect that of the previous scenario.

- *Maintain Scottsdale Airport's current general aviation role, focus and operational patterns as a GA reliever airport with a primary focus on corporate aviation. This*



would also allow Scottsdale Airport to more effectively compete to maintain its market share with corporate aircraft, thereby maintaining its financial operation, as opposed to potentially reducing the financial success of the airport due to stagnant or declining levels of corporate activity.

- *Maintain Scottsdale Airport's current form of commercial air service (air charter), with the potential for enhancing its service level through the establishment of a point-to-point air taxi service business model.*
- *Maintain Scottsdale Airport's current form and level of air cargo operations.*

Airport Facility Implications

The airport facility implications of this development scenario will mirror those described for Scenario 1, including the fact that no additional facility costs would be anticipated beyond that which would be expected as part of the current development track of the Airport. However, it should be recognized that Development Scenario 2 could potentially impact the Airport's design standards and facility requirements. As detailed in earlier chapters, design aircraft determinations are based on the most demanding aircraft that has at least 500 annual operations at an airport. Since the Airport's current design aircraft (Gulfstream IV) is a Group II aircraft and is the basis for its current design standards and FAA modification to standards, any shift to a larger design aircraft (Group III or larger) could have dramatic impacts on the Airport's design and facility requirements. Therefore, the Airport must be cognizant of this possibility when considering this option.

It is also important to note that this consideration is not just exclusive to this option of adjusting the administrative weight restriction. Under current conditions, if a particular aircraft type with an operational restriction placard were to meet the 500 annual operations threshold, the FAA could require that it become the Airport's design aircraft, with all resulting design and facility implications. In the event that the 500 annual operations threshold was met by one of these larger aircraft and the FAA were to mandate a change in design aircraft, the airport design facility implications would likely directly reflect that of Development Scenario 3, described below.

Note that the possibility of a mandated changing of the design aircraft should be a very real and substantial concern for Scottsdale Airport. While not entirely applicable, recent events and interactions between Santa Monica Airport (near Los Angeles, CA) and the FAA highlight the potential operational concerns and facility implications that could result from such a change. Generally stated, Santa Monica Airport has pursued maintaining a smaller design aircraft as the basis of its operations in an attempt to restrict larger aircraft types from operating at the airport due to community considerations, while the FAA has countered that the airport is obligated under its grant assurances to not exclude any reasonable aircraft type. While this situation will likely find some resolution through legal means, the critical point for Scottsdale Airport is that the determination of its ultimate design aircraft (and its associated facility and design requirements) is not entirely at the discretion of the Airport itself. As such, the Airport must be diligent in maintaining its design aircraft status.

Practical Implications: Similar to the previous scenario, Development Scenario 2 would maintain Scottsdale Airport's current track for facility development, which includes, among others, the following key considerations:

- *Maintain the existing design aircraft and the existing FAA modification to standards with respect various airport design requirements.*



- *Reduce instrument approach minimums, resulting in potential facility and airport design implications.*
- *No additional facility costs would be anticipated beyond that which would be expected as part of the current development track of the Airport.*
- *Potentially utilize the existing terminal building and/or supporting facilities for use by an air charter or on-demand air taxi service if the demand for those services were to become significant enough.*
- *Operation of larger aircraft (either through raising the administrative weight restriction or through increased use of large aircraft with FAA operational restriction placards) could trigger a change of the Airport's design aircraft, which would ultimately result in increased airport design and facility standards, similar to those described in Development Scenario 3.*

Airport Operational Implications

There would be no significant impact on the Airport's current operational patterns, since this modification would not introduce a new class of aircraft to the Airport, but would only expand its current class of corporate aviation aircraft.

However, community considerations are always paramount around Scottsdale Airport and the raising of the administrative weight restriction has the potential to generate concern in neighboring residential communities that the Airport will be able to accommodate significantly larger and noisier aircraft. As such, it must be emphasized that the practical implication of this incremental raising of the restriction will only permit those aircraft whose MTOWs fit within the adjusted range, which is currently comprised of newer, larger, and quieter general aviation corporate aircraft. Large commercial service aircraft utilized by airlines will still not be able to operate at Scottsdale Airport since their MTOWs will still exceed the adjusted administrative weight restriction, as well as the maximum pavement strength of the existing runway.

It should also be noted that an environmental review of this administrative weight restriction adjustment would not typically be required. Generally, the exceptions to this would be if the proposal were deemed to be "highly controversial" by the FAA, if the proposal resulted in a significant change in aircraft fleet mix sizes, or if any runway pavement strengthening were to be required to accommodate those larger aircraft. None of these exceptions are currently anticipated with respect to this development scenario.

Practical Implications: Operational implications for Development Scenario 2 would include the following:

- *Scenario would largely maintain Scottsdale Airport's current operational procedures and patterns (as does Development Scenario 1), only expanding its current market focus to include larger corporate aircraft.*
- *Large commercial air service aircraft would still be precluded from operating at the Airport due to the adjusted administrative weight restriction, as well as by the inherent structural weight limitation of the existing runway pavement. (Any proposed change to the pavement strength that could result in a fleet mix or operational change that would likely be subject to environmental review.)*
- *Community perception of this proposal would be a consideration, although the practical implications of this would be limited to larger and quieter corporate aircraft and would not extend to large commercial service aircraft.*



Airport Financial Implications

In terms of the financial implications for the Airport, raising the maximum permitted aircraft weight would certainly provide direct financial benefits in the form of increased revenues that are inherent to larger aircraft. Additionally, from a strategic perspective, this action would help Scottsdale Airport combat the increasing degree of competition from other area airports that could support this type of activity, thereby helping to preserve its current area market dominance.

Practical Implications: Development Scenario 2 would result in positive financial impacts since larger aircraft generally result in larger profit margins in terms of sales and services. Additionally, this option could effectively reduce or eliminate any potential competitive disadvantage for the Airport in terms of servicing the full spectrum of corporate aviation.

Scenario 3

Small to Large-Sized Corporate Aircraft Market Focus

Scenario 3 is directly based on *Market Focus Option 2 - Small to Large-Sized Corporate Aircraft* and is best described as an expansion of the operational patterns currently experienced at Scottsdale Airport in that it accommodates all general aviation aircraft, including the emerging niche of large corporate aircraft, with the exception of commercial aircraft used for corporate aviation purposes (i.e. Boeing Business Jet). Potential concerns with respect to this option center on the aircraft operational weight restriction of 75,000 pounds previously established by the City of Scottsdale to ostensibly preclude the operation of large commercial air service aircraft at the Airport. (For reference purposes, current Boeing 737 variants have MTOWs of greater than 133,000 pounds.)

Other than adjusting the runway weight restriction, the principle change proposed for this development scenario is upgrading the Airport's design aircraft to that of the Gulfstream 650, a Group III aircraft. While similar in nature to the current design aircraft, it is a fundamentally larger corporate aircraft (MTOW of 99,600 pounds) that will trigger additional facility and service requirements, discussed in greater detail below. This scenario also includes the reduction of the Airport's instrument approach minimums to $\frac{3}{4}$ -mile visibility, as opposed to the current 1-mile visibility minimum requirement, as carried forth from Scenarios 1 and 2.

Airport Role Implications

General Aviation

In this development scenario, the Airport's continued primary focus on corporate general aviation will be enhanced by its ability to meet the demands of all general aviation aircraft, with the exception of the largest, commercial-sized aircraft (i.e. Boeing Business Jets). This focus will enable Scottsdale Airport to continue to meet the challenges of increased area competition for corporate jet activity by eliminating its potential competitive disadvantage with respect to other area airports that can serve the full range of general aviation aircraft and weight categories. This option assumes that the level of operations for these large general aviation aircraft will be such that they will exceed the FAA's 500 annual operational threshold for a design aircraft.



Practical Implications: Scenario 3 would maintain and enhance Scottsdale Airport's current general aviation role, focus and operational patterns as a GA reliever airport with a focus on the full spectrum of corporate aviation.

Commercial Air Service

This development scenario does not differ in any appreciable way from Scenarios 1 and 2. Therefore, the commercial air service implications defined above are applicable for this scenario as well.

Practical Implications: Development Scenario 3 would maintain Scottsdale Airport's current form of commercial air service (air charter), with the potential for enhancing its service level through the establishment of a point-to-point air taxi service business model.

Air Cargo

This development scenario does not differ in any appreciable way from Development Scenarios 1 and 2. Therefore, the air cargo implications defined above are applicable for this scenario as well.

Practical Implications: Development Scenario 3 would maintain Scottsdale Airport's current form and level of air cargo operations.

Airport Facility Implications

The primary differences between Scenarios 1 and 2 and Scenario 3 lie within the airport facility implications that are driven by their design aircraft (a Gulfstream IV and a Gulfstream 650, respectively). First, as suggested above, increasing the maximum aircraft operating weight restriction at any airport typically would imply the potential for requiring runway pavement strengthening. However, based on the understanding that the current runway pavement could adequately meet an adjusted weight restriction up to an estimated 100,000 pounds, a runway pavement strengthening project for Scottsdale Airport is not anticipated to be required. (It is also worth noting that even if such a project were to be required, at a minimum it would be subject to an FAA environmental assessment.)

Second, by updating the design aircraft to that of a Group III, a wide variety of airport design standard increases are introduced to the Airport, the most significant of which is related to runway/taxiway separation requirements. Currently, Scottsdale Airport does not meet this particular standard based on its Group II design aircraft with respect to its primary parallel taxiways, but it has successfully obtained a modification to standard from the FAA to account for this deficiency. Given the fact that the Airport currently does not meet the standard and an upgrade to Group III would only increase that deficiency, it should be anticipated that the FAA would likely abandon that modification and require the Airport to meet the full standard if its design aircraft were to be changed. As shown in the Chapter Three (Figure 3-3), this would have a dramatic impact on the Airport in that several existing facilities and businesses lie within either the footprint of the relocated parallel taxiways or their associated object free areas. Additionally, changing to a larger design aircraft could result in the FAA reconsidering its standing waivers issued to the Airport regarding noncompliance with the runway object free area standards.

Assuming that the FAA would not continue to extend the existing modification to standard with respect to the runway/taxiway separation if the design aircraft were changed to that of a Group III, the Airport would have to make provisions for relocating Taxiways A and B, as



shown in the previous chapter. It is important to note that this would be a major undertaking for the Airport not just in terms of financial expenditure, but in land acquisition, community/stakeholder relations, and environmental efforts. Based on the “Runway Safety Area Standards Evaluation for Scottsdale Airport” study published in 2001, the following conclusions can be gleaned:

- The relocation of the two parallel taxiways would require the acquisition of a minimum of 20.5 acres of developed and undeveloped lands abutting the Airport. Note that the acquisition of these properties would likely be challenging at best considering that much of this acreage is already developed with aviation-related facilities and businesses.
- In order to integrate these acquired lands into the Airport property boundary, environmental assessments would have to be conducted, with any subsequent environmental remediation addressed.
- An additional environmental assessment would likely be required at a minimum by the FAA to quantify any potential impacts associated with the relocated taxiways.
- The estimated cost for just the property acquisition and construction of the relocated taxiways in 2001 was over \$46 million. Adjusting for inflation (CPI) and increased construction costs, adding for environmental analysis (no remediation), and applying a conservative correction factor to compensate for increases in property values and subsequent land development, the order-of-magnitude estimated cost for the taxiway relocations would easily exceed \$80 million.
- If relevant properties were to be acquired and taxiways relocated, there could be a significant loss in aviation-related facilities and businesses if those interests elected not to relocate or were unable to relocate due to lack of available development lands on Scottsdale Airport or within the Scottsdale Airpark.

Beyond these notable differences, Scenario 3 mirrors that of Scenarios 1 and 2 in terms of facility implications. One additional point related to the existing terminal building that should be recognized is that even if that facility were not utilized by some on-demand air taxi service, it is still extremely valuable land for the Airport in that it is centrally located with immediate airside access. The current facility does provide some value to the Airport not only accommodating a restaurant, the rental car operations, accessible public space and the airport administration, but also serving the function of effectively “land banking” that property for potential redevelopment for a highest and best use function at some future time.

Practical Implications: Scenario 3 would require a change of Scottsdale Airport’s current design aircraft from that of a Group II to a Group III. This shift could result in the following at a minimum:

- *Revocation of existing modification to standards by FAA with respect Group II runway/taxiway separation requirements.*
- *Property acquisition program and associated environmental effort to accommodate parallel taxiway relocations required by new design aircraft. Combined with additional project environmental assessment and taxiway relocation/construction, total project cost would be expected to well exceed \$80 million.*



Airport Operational Implications

From an operational perspective, Scenario 3 would not require any significant changes to the Airport's current standard operating procedures since the fleet mix would generally not change, other than the assumed increase in larger corporate aircraft activity. In fact, given the amount of impact to existing aviation facilities and business required by the anticipated taxiway relocations, combined with the general lack of potential replacement properties for those facilities/businesses, Scottsdale Airport could actually experience a decline in operational levels. In essence, already limited landside capacity would likely be further reduced in terms of hangars, aircraft parking and business services, any combination of which could drive down aircraft operational levels due to lack of facilities.

Practical Implications: Scenario 3 would generally maintain and enhance Scottsdale Airport's current operational procedures and patterns by modifying the airport design aircraft to reflect larger corporate aircraft. There is potential for operations to actually decline as facility requirements associated with the new design aircraft could further reduce already limited Airport landside capacity.

Airport Financial Implications

From a financial perspective, Scenario 3 should be very similar to that of Development Scenario 2 in that it is reasonable to assume that servicing larger aircraft should yield increased direct financial benefits in the form of higher revenues that are inherent to larger aircraft. Similarly, from a strategic perspective, meeting the demands of those larger general aviation aircraft would help combat the increasing degree of competition from other area airports that can and will utilize any deficiency at Scottsdale Airport to their competitive advantage.

However, it should again be noted that if existing aviation-related facilities and business that would have to be relocated to accommodate the realigned taxiways could not be appropriately re-established, the Airport could suffer a reduction of operations and services. If this were to be the case, Scottsdale Airport should reasonably be expected to experience a decrease in revenues because of the reduction in aircraft operations from existing users.

Practical Implications: Scenario 3 should result in positive financial impacts since larger aircraft generally result in larger profit margins in terms of sales and services. Additionally, this option could effectively reduce or eliminate any potential competitive disadvantage for the Airport in terms of servicing the full spectrum of corporate aviation. However, consideration should be given to a possible reduction in aircraft operational levels at the Airport due to taxiway realignment projects that could ultimately result in reduced revenues due to existing businesses/facilities that would have to be relocated, likely not at Scottsdale Airport.

Scenario 4

Commuter Air Service Market Focus

Scenario 4 is directly based on *Market Focus Option 3 - Commuter Air Service Market Focus* which reflects the formal establishment of passenger airline operations at Scottsdale Airport. This would likely take the form of scheduled airline service on aircraft ranging in size from small turboprop aircraft to regional jet aircraft. As such, this scenario entails a fundamental shift in the focus of activities at the Airport to include all commercial air service development options up to the level of a scheduled commuter airline, including the type of commuter air



service previously accommodated at Scottsdale Airport. It also includes all “niche” scheduled airline service types, as well as on-demand, air taxi/charter services, all of which can reasonably be expected to coexist with the Airport’s traditional general aviation activity basis.

A hybrid design aircraft comprised of a cross between the Canadair CRJ and the Dash-8 has been identified as being the design aircraft for this option. (While a Fairchild Dornier 328Jet-based operation has been previously proposed at Scottsdale Airport, this aircraft is atypical of nearly all commuter airline operations.) It is important to note within this scenario that while the initiation of such airline service will be a significant one for Scottsdale Airport, the character and the primary aircraft operational types will remain largely unchanged.

General Aviation Implications

For this development scenario, as with the previous scenarios, general aviation will continue to be the primary focus of the Scottsdale Airport. In fact, given that this option would require a change in design aircraft to that of Group III (the same as that described above in Scenario 3), the general aviation implications will be very similar, if not identical to that of the previous development scenario.

Practical Implications: Scenario 4 would maintain and enhance Scottsdale Airport’s current general aviation role, focus and operational patterns as a GA reliever airport with a focus on the full spectrum of corporate aviation.

Commercial Air Service Implications

This development scenario is obviously based on commercial air service implications for the Airport. As detailed in Chapter Three, commercial air service at Scottsdale Airport would likely take the form of scheduled commuter airline operations that could feed hub airports in Las Vegas and Los Angeles, as well as other potential destination airports like San Diego. This scheduled passenger service could also include seasonal operations to other resort destinations such as Aspen or Eagle Vail. Beyond the scheduled commuter air service, this development scenario mirrors that of the other scenarios in terms of the possibility of accommodating on-demand air taxi/charter operations, discussed above.

Practical Implications: Scenario 4 would reestablish scheduled commuter commercial air service at Scottsdale Airport to regional destinations such as Los Angeles, Las Vegas, San Diego, and other seasonal destination airports. This scenario would also maintain the Airport’s current form of commercial air service (air charter), with the potential for enhancing its service level through the establishment of a point-to-point air taxi service business model.

Air Cargo Implications

This development scenario does not differ in any significant way from the previous scenario in terms of air cargo other than the possible limited development of scheduled commercial aircraft belly cargo capacity. Therefore, implications defined above are applicable for this scenario as well.

Practical Implications: Scenario 4 would maintain Scottsdale Airport’s current form and level of air cargo operations, with some possible enhancement through utilization of commercial aircraft belly cargo capacity. For commuter size aircraft, the belly cargo capacity is fairly limited and would not allow for any type of significant cargo activity.



Airport Facility Implications

The airport facility implications for this scenario are largely the same as that of Scenario 3 since both require a change in design aircraft to that of Group III; however, there are three primary differences. First, this scenario requires a precision instrument approach for airline operations, which could pose a significant challenge in terms of equipment (i.e. approach lighting) and airspace clearance. While more appropriately examined within the context of the Master Plan Update, the location and proximity of surface roads on either end of the Airport's runway as well as the presence of taller structures in the vicinity could be prohibitive to establishing a precision approach with unrestricted approach minimums.

Second, as a commercial air service airport with scheduled service provided by aircraft with nine or more seats, Scottsdale Airport would have to meet the full requirements of FAR Part 139. (Generally, the FAA tends to be much more conservative in issuing airport design standard modifications for Part 139 airports.) As detailed in Chapter Three, this would have a variety of potentially significant operational and facility implications for the Airport, not the least of which is that the Airport should anticipate having to meet all applicable airport design standards.

It is worth noting that Scottsdale Airport has previously approached the FAA on the possibility of issuing a "modified" Part 139 certificate that would reduce the potentially onerous impacts that the full certificate could have on the Airport. Specifically, the Airport has centered its requests on a previously proposed scheduled commercial air service operation based on a Group II aircraft (the Fairchild Dornier 328Jet), which happens to be Airport's current design aircraft group. The purpose for this request would be to have the FAA issue a Part 139 certificate based on this limited aircraft group, and therefore not require the significant facility improvement costs associated with upgrading to a larger Group III design aircraft, as detailed above. However, although the FAA has issued such certificates in the past, this former practice is no longer acceptable to the FAA, and the Scottsdale requests have been denied. Beyond the fact that this is no longer a standard practice, the denial of these requests is also largely based on the issues being confronted at Santa Monica Airport: that the FAA will not permit the exclusion of specific aircraft types.

Third, scheduled commercial air service operations have specific facility requirements that are very different from that of general aviation in terms of access, security, passenger processing, baggage handling, etc. For example, under this development scenario, the existing terminal building would have to be upgraded to meet current passenger and baggage screening requirements at a minimum. Additionally, improvements to Airport access and auto parking would likely also be needed to accommodate increased passenger traffic. Some of these improvements could require additional landside space on or near the Airport. Given the points made above regarding the realignment of the taxiways and the challenges to be met in relocating those existing aviation-related facilities and businesses within the existing land envelope, identifying and acquiring additional properties to support the scheduled commercial service operations could be extremely difficult and expensive.

In terms of estimated order-of-magnitude costs, it would not be unreasonable to assume that the total cost associated with the facility requirements for this development scenario could approximate \$100 million when factoring in the taxiway relocations (discussed above), terminal/TSA improvements, Part 139 upgrade requirements, possible additional property acquisition, environmental studies, and public coordination efforts.



Practical Implications: Scenario 4 would require a change of Scottsdale Airport's current design aircraft from that of a Group II to a Group III. This shift could result in the following at a minimum:

- *Revocation of existing modification to standards by FAA with respect Group II runway/taxiway separation requirements.*
- *Property acquisition program and associated environmental effort to accommodate parallel taxiway relocations required by new design aircraft. Combined with additional project environmental assessment and taxiway relocation/construction, project cost would be expected to well exceed \$80 million.*
- *Scheduled commercial air service-driven facility improvements (including terminal improvements, accommodating TSA requirements, Part 139 airport upgrades, access and auto parking upgrades, possible additional property acquisition, environmental studies, and public coordination efforts) could easily approach an estimated \$15 million. This would result in the total development scenario cost approximating an estimated \$100 million.*

Airport Operational Implications

From an operational perspective, Scenario 4 will require that Scottsdale Airport meet the operational requirements of FAR Part 139, as well as all TSA passenger/baggage processing requirements. All other operations will be similar to that of the Scenario 3 in terms of larger aircraft operations and a possible reduction of overall operations due to reduced aviation-related facilities and services. Scottsdale ATCT representatives have stated that the reintroduction of scheduled commercial air service at the Airport would not create any airfield operational processing concerns.

However, it is important to acknowledge that since this scenario reintroduces scheduled commercial air service to Scottsdale Airport, and given the Airport's experience in prior interactions with the local community, it should be anticipated that community reaction will range from mixed to negative. In terms of what value scheduled commercial air service would provide to the local area, it could be reasoned that those benefits would outweigh any potential negative reaction. But what must also be considered is that this negative reaction to scheduled commercial air service would have the potential to spill over into a general negative perception of Scottsdale Airport itself. Unresolved, this negative perception could impact the Airport's primary functionality as a general aviation airport over the long term. Therefore, it is critical for Scottsdale Airport's long term success as a general aviation provider and as a valued member of the community that these potential concerns be acknowledged and that all responses be measured and appropriate.

Practical Implications: Scenario 4 would enhance Scottsdale Airport's current operational procedures and patterns by both modifying the airport design aircraft to reflect a larger design aircraft, and by reintroducing scheduled commercial air service to the Airport. Additionally, scheduled commercial air service operational requirements (TSA, Part 139, etc) would have other operational implications for the Airport. From a community standpoint, the reintroduction of scheduled commercial air service at the Airport will pose a significant public relations challenge in that reaction will likely range from mixed to negative.

Airport Financial Implications



From a financial perspective, the general aviation-related revenues associated with Scenario 4 would likely be very similar to that of the previous scenario. While scheduled commercial air service has the potential to generate new revenue streams for the Airport, it must be understood that for Scottsdale Airport to entice an operator to initiate operations at the Airport, it will have to make the situation as financially favorable for that operator as possible, particularly when considering the current volatile nature of the commercial air service industry. As such, it is likely that the Airport would have to waive many fees, or at least reduce them significantly below that of current market rates until such time as the service is well established and profitable.

Additionally, it must be noted that other airports across the country pursuing scheduled commercial air service often “guarantee” a specific load factor or revenue amount for an airline over a period of time in hopes of establishing a given market’s viability. This “guarantee” is typically in the form of the airport sponsor buying any empty seats up to a designated load factor. In terms of direct revenues, the relatively low number of scheduled commercial aviation operations that will be generated will produce a positive, if limited, financial benefit to the Airport. The impact of the service would likely be realized more in terms of generating economic activity for the City of Scottsdale.

Practical Implications: Similar to the previous scenario, Scenario 4 should result in positive financial impacts since larger general aviation aircraft generally result in larger profit margins in terms of sales and services. Additionally, this option could effectively reduce or eliminate any potential competitive disadvantage for the Airport in terms of servicing the full spectrum of corporate aviation. However, consideration should be given to a possible reduction in aircraft operational levels at the Airport due to taxiway realignment projects that would likely result in reduced revenues. In terms of scheduled commercial air service, limited direct financial benefits should be anticipated by the Airport until such time that the profitability of the service is established and the Airport can realize additional income at market rates. More importantly, the City of Scottsdale will immediately derive some benefit from the initiation of scheduled commercial air service both in terms of direct economic generation and ancillary regional transportation access enhancements.

Analysis Results and Conclusions

The previous sections have sought to condense and distill the significant amounts of data presented in the previous chapters into four “real world” development scenarios. For further clarification, **Table 4-1** below provides a subjective assessment of whether each development scenario offers positive, negative or neutral implications for Scottsdale Airport with respect to various analysis implications. The assessment is measured against the Airport’s current “baseline,” which is generally interpreted as being the operational and development track currently being experienced at Scottsdale Airport. Based on the analysis included in this chapter and reflected in the following table, Scenario 2 appears to offer the most efficient and effective opportunities for long term growth at Scottsdale Airport.

Table 4-1: Scottsdale Airport Development Scenarios Summary

	Scenario 1 Small to Mid-Sized Corporate Aircraft Market Focus	Scenario 2 Small to Mid-Sized Corporate Aircraft Market Focus with Adjusted Administrative Weight Restriction	Scenario 3 Small to Large-Sized Corporate Aircraft Market Focus	Scenario 4 Commuter Air Service Market Focus
Analysis Implications				
General Aviation	<ul style="list-style-type: none"> - maintain current baseline 	<ul style="list-style-type: none"> - enhance current baseline 	<ul style="list-style-type: none"> - enhance current baseline - potential for some negative impact 	<ul style="list-style-type: none"> - enhance current baseline - potential for some negative impact
Commercial Air Service	<ul style="list-style-type: none"> - maintain current baseline - potential for some enhancement of baseline 	<ul style="list-style-type: none"> - maintain current baseline - potential for some enhancement of baseline 	<ul style="list-style-type: none"> - maintain current baseline - potential for some enhancement of baseline 	<ul style="list-style-type: none"> - initiate new commercial air service activities - potential for some enhancement of baseline
Air Cargo	<ul style="list-style-type: none"> - maintain current baseline 	<ul style="list-style-type: none"> - maintain current baseline 	<ul style="list-style-type: none"> - maintain current baseline 	<ul style="list-style-type: none"> - potential for some enhancement of baseline
Airport Facilities	<ul style="list-style-type: none"> - maintain current baseline - potential for some negative impact 	<ul style="list-style-type: none"> - maintain current baseline - potential for some negative impact 	<ul style="list-style-type: none"> - significant facility impacts & costs 	<ul style="list-style-type: none"> - significant facility impacts & costs
Airport Operations	<ul style="list-style-type: none"> - maintain current baseline 	<ul style="list-style-type: none"> - enhance current baseline 	<ul style="list-style-type: none"> - enhance current baseline - potential for negative impact on operational levels 	<ul style="list-style-type: none"> - enhance current baseline - potential for negative impact on operational levels - potential for negative community perception
Airport Financials	<ul style="list-style-type: none"> - maintain current baseline - maintain long term competitive disadvantage 	<ul style="list-style-type: none"> - enhance current baseline - neutralize competitive disadvantage 	<ul style="list-style-type: none"> - enhance current baseline - neutralize competitive disadvantage - potential for negative impact due to operational levels 	<ul style="list-style-type: none"> - enhance current baseline - neutralize competitive disadvantage - potential for negative impact due to operational levels - introduce new revenue streams

● = Positive Implications

○ = Neutral Implications

○ = Negative Implications

Source: Wilbur Smith Associates.



SUMMARY

This chapter represents the culmination of this strategic planning effort for Scottsdale Airport. For the City of Scottsdale to establish a long-term “vision” for the Airport to guide future planning and development efforts associated with the upcoming Master Plan Update, the three market focus options identified in Chapter Three were distilled into “real world” development scenarios that reflected how those market focus options could potentially interact and overlap with each other in a practical or “real world” application, as well as what some of the relevant implications might be.

As such, this chapter presented some of those potential real world implications in the form of reasonable development scenarios that were based directly on the market focus options previously identified and analyzed. The purpose of this effort was to show how the implementation and integration of a particular industry segment focus could potentially affect the Scottsdale Airport in the long term, and to provide the City of Scottsdale with an appropriate breadth of scope and level of detail for it to establish that long-term vision for the Airport.

Through the analyses included in this chapter, *Scenario 2 - Small to Mid-Sized Corporate Aircraft Market Focus with an Adjusted Administrative Weight Restriction*, appears to offer the most efficient and effective opportunities for long term growth at Scottsdale Airport. In short, this development scenario would allow the Airport to more effectively compete to maintain its market share with corporate aircraft, thereby maintaining its financial operation and promote self-sufficiency, as opposed to potentially reducing the financial success of the airport due to stagnant or declining levels of corporate activity. This scenario endorses Scottsdale Airport continuing to pursue development that is consistent with what has made the Airport an industry and national leader in corporate aviation, while also continuing to pursue opportunities to initiate or enhance aviation services that fit within its market focus of corporate aviation. Additionally, in recognition of the various environs within which Scottsdale Airport operates, this scenario would promote reasonable, responsible, sustainable and appropriate facility development for the Airport over the long term.