

Chapter 3: Land Use Plan

Introduction

The development of a Land Use Plan is being undertaken as a part of the first phase in the completion of a Master Plan for the St. Louis Downtown Airport (CPS). Airport land use planning deals with a limited range of land uses, primarily focused on aviation, ground transportation, and infrastructure related development to support those activities. The purpose of this chapter is to present the Land Use Plan for CPS in terms of concept and reasoning. This master plan chapter provides a description of the various factors and influences that will form the basis for the ultimate land use plan and program. The primary factors that direct the development of the airport in the future include the anticipated amount and type of aviation activity, facility enhancement and reconstruction requirements as well as other community needs. To assist in the formulation of the Land Use Plan several factors have been identified that influence how the airport will develop. These factors are listed below and illustrated in **Exhibit 3-1**:

- CPS is a regional general aviation airport serving the St. Louis metropolitan area and typically is ranked as the third busiest airport in Illinois. The airport's location makes it the most convenient airport to downtown St. Louis. It is a vital component of the regional and national system of airports. The October 2011 draft of the FAA's Airport System Strategic Evaluation Task (ASSET), estimated to be implemented during early 2012, would classify CPS as a Regional Service Airport.
- The Land Use Plan will be a guide for airport management in directing the future land use of the airport. The planning level guidelines that are adopted need to be flexible enough to allow for changing aviation demand.
- Aviation demand will be the primary determinate for airport development. As required by the Federal Aviation Administration (FAA) Grant Assurances CPS must be available for public use, on fair and reasonable terms, without discrimination among or between classes of aircraft. In addition, the Airport Sponsor (Metro) cannot attempt to regulate safety and operation of flight, which remain the exclusive responsibility of the Federal government and cannot create an undue burden on interstate air commerce.
- The limited quantity of airport land and the goals expressed in the airport's mission statement require that each parcel of airport property that could support aviation use should be programmed for that potential. In addition, the development justification for each individual parcel for aviation use must include a favorable financial analysis (costs must be recoverable through rates and charges) and the ability to mitigate potential negative effects on the surrounding communities.
- CPS has a limited amount of land and a significant portion of that land is currently committed to airfield use or is limited in some way in its ability to accommodate aircraft operations. In addition, a portion of the airport and surrounding property is encumbered by local, regional or national ecological and/or storm water regulations such as those areas identified as wetland, floodplain and those necessary for stormwater management. Therefore the land available for development will continue to be in high demand for aviation use facilities and the existing developed land will continue to be redeveloped in an attempt to provide best use. **Exhibit 3-2**

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- Available land adjacent to CPS is limited by transportation corridors to the east and west, established residential areas to the south and an industrial park to the north. The practical east boundary of the airport is defined by Interstate 255. To the west the Missouri Pacific Railroad provides a barrier that precludes aviation use of the approximately 24 acres of airport property west of this four-track corridor. The south boundary of the airport is defined by Jerome Lane and numerous residential areas within the city of Cahokia. The Sauget Industrial Park dominates the northern boundary of the airport. This partially developed site possesses the only remaining undeveloped land adjacent to the airport. **Exhibit 3-2**

Consideration of the factors listed above indicates that a *balanced approach* to development and redevelopment of airport property is the appropriate basis for the future layout of facilities. A *balanced approach* best achieves the airport's mission by supporting the broadest mix of aviation uses, allowing flexibility in response to changing needs among the diverse general aviation markets present in the St. Louis metropolitan area, and efficiently utilizing constrained airport property. This approach will: include the physical and the fiscal limitations; be consistent with FAA requirements; contribute to the local economy; and, provide safe and efficient aviation support facilities. The resulting Land Use Plan is based on some specific assumptions that have influenced the development process.

Assumption 1

The first assumption is that the airport's primary mission is to meet the existing and ultimate aviation demand under all but the most extreme weather conditions. To do so the airfield will, at a minimum, maintain the existing three runway configuration and will continue to offer at least one precision instrument approach.

The capacity of the existing runway configuration, as defined by the *FAA's Annual Service Volume*, is sufficient to accommodate even the most aggressive aircraft operations forecasts. In addition, it is assumed that the current runway lengths are sufficient to meet the operational needs of the forecast aircraft fleet. Although no new runway infrastructure is anticipated the airport's taxiway system will continue to evolve in order to safely and efficiently move aircraft to and from the runways and all designated aviation support facilities. **Exhibit 3-3**

All land use decisions will be based on the placement of structures and establishment of height limitations to ensure that the airfield, at a minimum, maintains its current capacity and instrument approach capabilities. In addition CPS will, through its lease agreements, retain the ability to adjust height limits in accordance with FAA obstruction criteria.

Assumption 2

St. Louis Downtown Airport will continue to maintain a portion of its property to accommodate the floodplain management commitments identified in FAA's *Finding Of No Significant Impact* (FONSI) dated June 20, 2007 and recent permit conditions identified by the U.S. Army Corps of Engineers. In addition, any impacts to the existing wetlands will be first avoided but if unavoidable, minimized to all practicable extents. If however, there remain areas that include unavoidable/minimized impacts to wetlands, there are existing wetland mitigation credits based on permits obtained for improvements listed in the previously referenced FONSI. **Exhibit 3-4**

*Existing Conditions Report****Assumption 3***

The relocation of the Ameren Utility Line (identified on **Exhibit 3-3**) would provide access to additional land along the northeast boundary of CPS. Support towers associated with this utility currently comprise the controlling object for Runway End 23 Approaches. In addition, the current alignment of the electrical line corridor precludes aircraft ground access to property to the north and is therefore defining the current northern boundary of the airport.

Assumption 4

The airport will be developed in a manner that complements and enhances on-airport and off-airport regional economic development activities. Development on airport property will proceed in a manner consistent with urban standards and infrastructure.

Assumption 5

The airport will strive to ensure that on-airport development will be complementary to, and compatible with, off-airport development and land uses. This will be integrated, to the extent possible, into the location of on-airport facilities and into the minimum standards of those facilities.

Landside Development Recommendations

The Land Use Plan is a foundation for future growth and development of CPS property during the next 20 years and beyond. The purpose of the Land Use Plan is to ensure that rational and consistent development is achieved through designation of an appropriate mix and distribution of aviation support and, in a few cases, non-aviation commercial and industrial uses.

The objective of the Land Use Plan is to allocate development sites for various uses consistent with the overall mission of CPS, the demand forecast as well as runway safety standards and obstruction criteria. In addition, the Land Use Plan will consider compatibility with the surrounding community land uses.

As stated previously, aviation demand will be primary for determining the actual use of all the airport property. The airport will continue to support the diverse general aviation use categories that it does today. Such uses include: aircraft completion and maintenance, specialty cargo, executive corporate, business and recreational flying, flight training and rotary operations. The proposed development plan reflects the need to accommodate this mixed-use aviation demand and recognizes that future development should be sensitive to specific requirements of each group. Because of the airport's limited land resources a "balanced growth" development plan should be implemented that not only provides for additional facilities to meet aviation demand but that also allows for upgrade and relocation of existing facilities to areas that serve specific aviation needs. This element of the plan will identify and recommend locations where these various components of the aviation market can be accommodated.

East Side Development

This airport quadrant is defined by the parallel runways (30 Left and Right) and Goose Creek to the west, Sauget Industrial Park property to the north, Mousette and Carol Drives to the east and south. The property is dominated by the Runway Protection Zones associated with both runway ends, the navigation

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aids and height restrictions required for precision and non-precision approaches, floodplain sites recorded in permanent easement and by Interstate 255 which bisects the property.

Development of this property is limited by FAA land use compatibility restrictions within the Runway Protection Zone, by height limitations defined by the runway approaches and by existing and future permanent floodplain easements. Therefore, the preferred land use recommendation for the East Side is for continued use as the primary and secondary all-weather approaches to the parallel runways and for an expanded role in floodplain management that may be necessitated by development within other airport quadrants. **Exhibit 3-5**

South Side Development

The property making up the south side airport quadrant is defined by the Missouri Pacific Railroad tracks to the west, Runway 12R-30L to the north and I-255 to the east. The property's southern boundary is adjacent to established residential neighborhoods within the City of Cahokia. Aviation support facilities currently within this quadrant are limited to the existing and the abandoned Air Traffic Control Towers (ATCT) and the Glide Slope Critical Area for the Runway End 30L approach. The remainder of the property is used for agricultural production. **Exhibits 3-5 and 3-6.**

- *Southeast Development Area.* This approximately 38 acre area beginning east of St. Patrick Blvd and extending further east to the glide slope critical area is defined by the Building Restriction Line and the airport property line. At the present time development of this area is hindered by the lack of airfield infrastructure such as taxiway access, apron and supporting utilities. Ground access to the site is poor due to the need to traverse established residential neighborhoods to reach the airport property. However the area does offer parcels of land suitable for development of airfield support facilities that are in close proximity to the primary runway. The location and route of ground access and the relative isolation of this area from the established aviation support facilities in the west and north quadrants make it a poor location for a fixed base operator, or similar function, that relies on itinerant and local traffic for its business. The area is however suitable for development by a specialized aviation business operation catering to a specific element of general aviation. **Exhibit 3-5**
- *Agricultural.* At the present time a significant portion of the south quadrant is used for agricultural production. This activity provides revenue for the airport and on a seasonal basis the crops provide a buffer between the airfield and the adjoining residential properties. It is recommended that the agricultural production continue until the property is needed for aviation support facilities.
- *Federal Aviation Administration (FAA).* The FAA will continue to utilize the existing ATCT facility located in the western end of this quadrant. Constructed in 2008, this facility will serve the airport throughout the planning period. The Glide Slope Critical Area, approximately 19.7 acres, will also remain. Future uses for the abandoned ATCT facility are currently being discussed. **Exhibit 3-6**
- *Southwest Development Area.* The infrastructure currently in the southwest development area, defined as the area both east and west of the Runway 5 centerline, is currently limited to serving small general aviation aircraft. The taxiway separation will serve only aircraft in the Design Group I category. It is recommended that development for aviation purposes within this quadrant be limited to serve small general aviation users. Small general aviation aircraft are typically accommodated in T-hangars or small box hangars with less than 20 foot door heights. In addition,

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taxiway and apron standards are less imposing due to size and weight of the aircraft. This user category is also compatible with the residential neighborhoods contiguous to the property. A decision to provide facilities that could accommodate service to aircraft larger than Design Group I would require relocation of the parallel taxiway to a centerline separation of not less than 240 feet.

- *Large General Aviation/Corporate Aviation.* This category of general aviation serves corporate aviation functions that require large medium-height buildings and additional investment in apron and taxiway infrastructure to accommodate the heavier aircraft weights. As stated previously, the western portion of the south development area is not suitable for serving large corporate tenants due to the ground movement constraints associated with the Runway 12R-30L localizer, the location of the Runway 12R threshold and the ground access to that quadrant of the airport. Further basis for this recommendation is the anticipation that the current congestion in the west side development area will be relieved with the implementation of other recommendations for large aircraft in this Land Use Plan.

West Side – Aviation Development

The description of the Land Use Plan for the airport's west side is separated into two distinct and independent parts. The first area to be considered is that portion of the property that has access to the airfield. This area is defined to the west by the Missouri Pacific Railroad Tracks, to the north by Curtis Steinberg Road and the airport property line, east by the airfield surfaces associated with Runway 5-23 and to the south by the Runway 12R-30L RPZ. This property is occupied by a mixture of hangars constructed over seven decades to meet a current demand and located by necessity rather than by the implementation of an overall layout plan. Due to the proximity to Runway 5-23 as well as the existing and anticipated demand for all types of general aviation services the Land Use Plan is based on maximizing the aviation use and on improving ground movement efficiency on the west side of the airport. **Exhibit 3-7**

The east side of this development area is limited by numerous airfield surfaces associated with Runway 5-23. At the present time the location of the Runway 23 threshold is limited by the location and elevation of the Ameren overhead electrical utility line. The ultimate length of this 2,799 foot runway is limited by Jerome Lane to the south and development along Sauget Industrial Parkway to the north. These physical barriers limit the ultimate length to 3,200 feet. With this ultimate length and the facility infrastructure in place on the west side, Runway 5-23 will continue to serve only the small general aviation aircraft within Approach Categories A and B. Exhibit 3-7 illustrates the relocation of both thresholds, without adding runway length. The relocation of the Runway 5 threshold would be to remove the Runway Protection Zone from the south side of Jerome Lane. The illustrated runway remains 2,800 feet in length.

- *Small General Aviation.* The west development serves primarily *small general aviation* activity covering a wide range of services including a full service FBO, aircraft maintenance specialists, private corporate and recreational operators, specialty cargo carriers, helicopter operators, a university flight training facility, and the Greater St. Louis Air and Space Museum. With the current facilities and congestion this area cannot meet the demand defined by the primary tenants during stakeholder coordination. Small pockets of land do exist that will allow for infill development of additional small box hangars and extensions of T-hangars. The existing building layout and interior taxiway clearances will not accommodate construction of additional large box hangars (more than 6,500 square feet).

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- *Large General Aviation/Corporate Aviation.* The limited space available in the west side development area will not accommodate facilities required to serve the larger corporate general aviation user. Although large aircraft within Design Group II and higher can access this area a few of these aircraft would quickly fill the available space.
- *Helicopter Support Facilities.* The vacant property south of Curtiss Steinberg Road and east of Vector Drive is available for development and could accommodate rotor or fixed wing aircraft. Access to this site by fixed wing aircraft is limited by the Runway End 23 RPZ and would require establishment of a taxilane through an existing leasehold apron. Best use for this approximately 90,000 square foot site would be for a helicopter operator or for facility expansion by the adjoining tenant. An example of a compatible facility is shown on **Exhibit 3-7**
- *Consolidated Fuel Storage Facility.* If the airport desires to engage in fuel storage and distribution to airport tenants (approved aircraft fuelers) the west side development would accommodate a facility of this type. An example of a facility with capacity to store up to 210,000 gallons of fuel is illustrated in.

West Side Non-Aviation Development

This approximately 54-acre property is bordered by Curtiss Steinberg Road to the north, the Missouri Railroad to the east and Godin Avenue to the south. The western boundary of this property is generally defined by Upper Cahokia Road although the airport does own a small parcel west of this road. The property is not accessible by aircraft and is therefore not available for development of aviation support facilities. A small portion of this property is within the RPZ for Runway End 12R and is therefore restricted by those standards. **Exhibit 3-7**

- *Wetland Protection.* Approximately 8 acres is designated wetland and therefore not available for development. Due to current FAA requirements for management of open bodies of water near runways it is not feasible to designate additional acres to wetland mitigation.
- *Agricultural Production.* Approximately 28 acres of this property is in active annual agricultural production providing a positive revenue flow to the airport. This crop production provides a buffer to the residential areas west of the airport on a seasonal basis.
- *Solar Farm.* A number of airports have developed, or are exploring the option of developing, solar farms for generation of electrical power to meet the day-to-day energy requirements of the facility and, in some cases, to be able to sell back surplus electrical power to the supplier. The west side development area is an ideal location for such a facility. An existing FAA program, the Voluntary Airport Low Emissions Program (VALE) is intended to reduce airport ground emissions and to encourage energy conservation. A number of airports are currently developing solar farms using money from this program. At this time however the legislation limits participation to commercial service airports (airports with scheduled airline service) and is therefore not currently available to CPS. It is recommended that Metro monitor this program and to seek eligibility. Additional information on solar farms at airports and the VALE program is presented in **Appendix C**.

*Existing Conditions Report****North Side Development***

The area referred to in this report as the north side development area is bordered on the west and south by the Runway 5-23 and the Runway 12L-30R approach/safety surfaces respectively and on the east by Goose Creek. This property is primarily occupied by General Dynamics, the airport administration and Aircraft Rescue and Fire Fighting (ARFF) facility and a maintenance building for airport equipment.

Exhibit 3-8

- *Industrial Aviation.* It is anticipated that General Dynamics will continue to utilize the majority of its extensive north side leasehold for industrial aviation and executive corporate aviation support facilities serving both large and small general aviation aircraft. It is further anticipated, for long-term planning purposes, that this facility will ‘infill’ to the western and northern limits of the existing *north development* area and airport property line.
- *North Side Undeveloped Property.* East of the General Dynamics lease hold is an area of airport property currently undeveloped. This approximately 30 acre site, defined by the airport boundary to the north and Goose Creek to the east provides easy access to the parallel runways but currently offers no land side access. Ground access is limited by the airport stormwater drainage system and currently leased properties. This remaining site is insufficient to accommodate the long term planning needs of the airport.
- *Ameren Utility Line.* Historically aviation support development to the north, and therefore the north property line, has been defined by the presence of a utility corridor owned and operated by Ameren. Two of the support towers for this electrical transmission line currently define the controlling elevation surfaces associated with the Runway End 23 approach. Recent discussions with Ameren engineering staff indicate that the utility company would cooperate in the relocation of a portion of this line to accommodate airport development to the north. The relocation of up to nine of the support towers associated with this power line would allow aircraft access to currently undeveloped land along the airport’s northern boundary and would allow the airport to accommodate anticipated demand.
- *Large General Aviation/Corporate Aviation.* Preferred use areas to serve large corporate aviation functions typically include considerations for entrance roads and auto parking, terminal/office building, fueling facilities and aircraft hangars and parking aprons. At the present time the airport does not have sufficient land resources that meet airfield and ground access requirements to meet the long-term planning requirements for large general aviation users. These needs can best be accommodated by acquisition and development of land north of the existing airport boundary. Acquisition and development of this property would provide the airport the opportunity to offer corporate tenants the space and ground access to needed to develop these facilities. In addition, traversing this property with an access road would provide vehicle access to the remainder of the airport’s north side property previously described.

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Recommended Airport Land Use Plan

A summary of recommended development options is depicted in a series of exhibits and drawings as part of this narrative. The plan illustrates the possible location of facilities to serve all aspects and functions of the general aviation community utilizing CPS.

- *Airport Property Acquisition.* The relocation of the Ameren electrical utility corridor would open to airfield access a large currently undeveloped tract of land north of the airport boundary. This property consists of approximately 124 acres currently zoned for commercial/industrial development. It is generally level land, draining through the existing ditch system to Goose Creek, which is contiguous to the airport on its west and south boundaries. Current Village of Sauget zoning, coupled with Sauget Business Park covenants restrict the property to light manufacturing, industrial, warehousing, distribution or service industries. The site is served by all public utilities. It is recommended that the airport acquire this property to serve the long-term facility requirements for the large general aviation segment of the airport. **Exhibit 3-8**