GREATER KANSAS CITY
REGIONAL AVIATION SYSTEM PLAN

SHERMAN ARMY AIRFIELD
SYSTEM SUMMARY REPORT

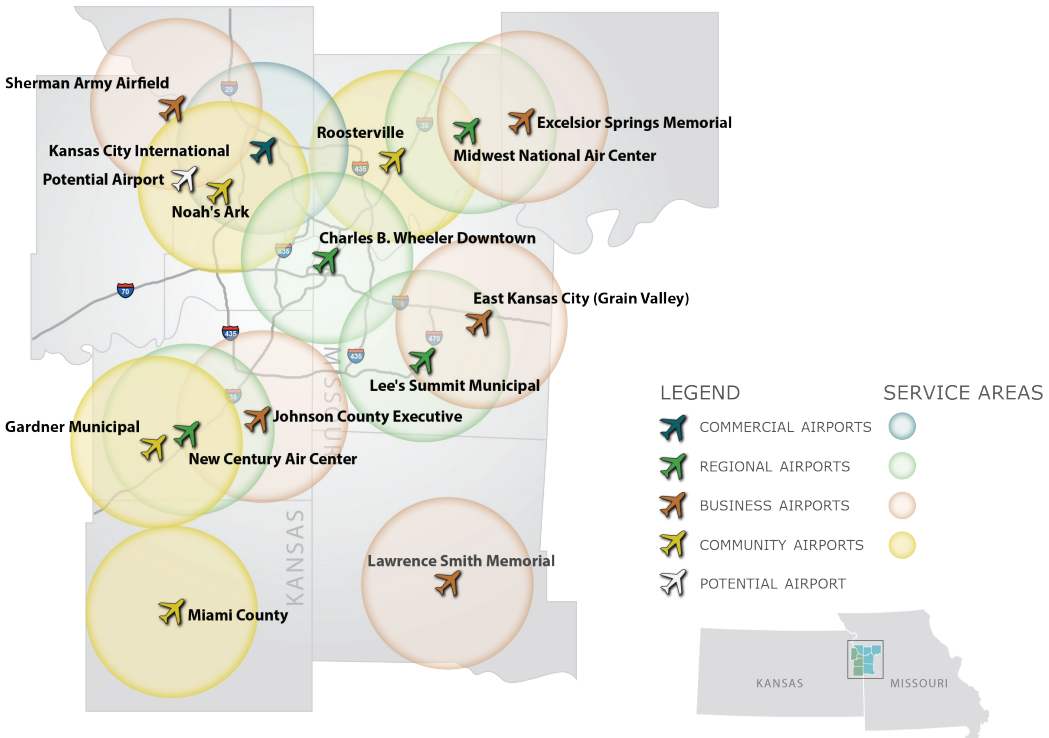
In 2015, the Mid-America Regional Council (MARC) completed a regional aviation system plan (RASP) for a nine-county study area focused on the Kansas City Region. The study area included counties in both Kansas and Missouri and considered 13 general aviation airports, including the Sherman Army Airfield. This report focuses on two important topics: individual finding and recommendations in the system plan for this facility; and various benefits the airport provides/supports in the study area.

Aviation system plans are top-down studies that must still be implemented from the bottom up by individual study airports. The ultimate success of the plan depends on each airport implementing recommendations from the study and following through on any identified improvement actions. Individual airport improvements will result in the enhancement of overall system performance.

As the map below shows, within the regional system, Sherman Army Airfield has been designated as a Business Airport. As part of the Kansas State Aviation System Plan, the airport is designated as a Regional Airport. Analysis conducted in the regional plan, however, indicated that a Business Role is more in line with this airport's capabilities. Within the regional system, a Business Airport is described as follows: Business Airports accommodate local business and other aviation users. Sherman Army Airfield is unique because all airfield facilities are owned by the U.S. Department of Defense; the city of Leavenworth leases land that houses the airport's landside facilities. The airport is not part of FAA's federal airport system, and it does not qualify for federal funding.

From a facilities standpoint, the Sherman Army Airfield meets many of the objectives for a Business Airport. The major facility that the airport lacks to meet its facility and service objectives is a full parallel taxiway. Additional hangar spaces are also needed for aircraft storage.

RASP RECOMMENDED AIRPORT SYSTEM



SERVICE AREA CHARACTERISTICS

The system plan uses a 10-mile radius around each airport to examine current and future population and employment characteristics. The table below shows this information for the Sherman Army Airfield. GIS analysis completed in the system plan shows that the Sherman Army Airfield has some of the lowest concentrations of both current population and employment. Further, between now and 2040, the rate of increase for both population and employment in the 10-mile radius around the airport is expected to be on the lower side, when compared to other system airports. This information factored into developing projections of future aviation demand for the airport.

Population and Employment						
Airport	Role	Ownership	Total Population within Service Area (2011)	Rate of Population Growth within Service Area (2011)	Total Employment within Service Area (2011)	Rate of Employment Growth within Service Area (2011)
Sherman Army Airfield	Business	Military	64,147	22%	18,819	20%

FUTURE AVIATION DEMAND

Projections of aviation demand were developed for all study airports. These projections considered service area characteristics, actual historic growth, and FAA projections for the general aviation industry (as contained in FAA's most current National Aerospace Forecast).

Forecasts were developed for both based aircraft and annual operations. Annual operations reflect takeoffs and landings performed by aircraft that are based or permanently stored at the airport and aircraft that are visiting or transient in nature.

Based aircraft at the airport are expected, according to system plan projections, to increase from 25 to 28, a 12 percent increase over the period. Aircraft based at the airport will continue to be smaller single-engine planes. Annual general aviation operations are expected to grow from 19,700 to 24,050 by 2035.

Projected Aviation Demand					
Sherman Army Airfield	2015	2020	2025	2035	2015-2035 CAGR
Forecast of Based Aircraft	25	25	26	28	12%
Forecast of Annual Operations	19,700	20,600	22,400	24,050	22%

** CAGR - Compound Average Annual Rate of Growth*

Based Aircraft Fleet Mix 2035					
Airport	Single Engine	Multi Engine	Jet	Rotor	Other
Sherman Army Airfield	28	0	0	0	0

RASP IDENTIFIED ACTIONS AND IMPROVEMENTS

As part of the system plan, facility and service objectives were developed for each of the three airport roles: Regional, Business, and Community. The table to the right shows the ability of current facilities and services at the Sherman Army Airfield to meet the objectives for a Business Airport. If the system plan analysis determined that actions were needed to improve the airport to make it fully compliant with its specific objectives, planning level cost estimates were developed for these projects. Costs by recommended improvement are shown in the table to the right.

As shown, the anticipated cost to improve the airport to meet all of its facility and service objectives and performance measure objectives is estimated at roughly $3.7 million. A significant portion of this cost is associated with providing the airport with a parallel taxiway system. The Sherman Army Airfield is eligible for local funding from the city's General Fund and for KDOT state funding. Since the taxiway recommendation is needed to support the airport's runway system, funds could potentially be sought from DOD.

In addition to facility and service needs, airports in the system plan were evaluated for their ability to meet financial, environmental, and social sustainability performance measures. Actions needed to make the Sherman Army Airfield fully compliant with all sustainability objectives from the system plan follow:

- Identify on-airport properties open for aviation related development.
- Identify on-airport properties open for non-aviation development (given this airport's unique ownership, it may not be realistic for the airport to meet this objective).
- Work with surrounding jurisdictions to attract aviation dependent employers to the airport environs.
- Work with surrounding municipalities to enact height zoning following Part 77.
- Work with surrounding municipalities to adopt land use controls to prevent airport encroachment.
- Develop a noise contour to identify areas surrounding to airport that lie within the contour.
- Develop a spill prevention and control plan.
- Improve public signage from area roadways.

- Establish a plan to promote the efficient use of water and a program to promote recycling.

Some of these actions have an associated cost, while others do not. Any associated costs to meet sustainability performance measures are included in the airport's report card.

Sherman Army Airfield Report Card					**FLV**
AIRPORT NAME: Sherman Army Airfield		**CITY:** Fort Leavenworth, KS			
AIRPORT CODE: FLV		**AIRPORT ROLE:** Business			
Actions Needed to Meet Facility and Service Objectives					
	Actual	**Minimum Objective**	**Compliant**	**Improvement Needed**	**Estimated Cost**
ARC	B-II	B-II	Yes		
Runway Length	5,318 Feet	4,000 Feet	Yes		
Runway Width	102 Feet	75 Feet	Yes		
Taxiway	None	Partial Parallel, Full Parallel if Justified	No	Construct parallel taxiway	$2,880,073
PCI	100	70 or Greater	Yes		
Navigational Aids					
Rotating Beacon	Rotating Beacon	Rotating Beacon	Yes		
Wind Sock	Lighted Wind Sock	Lighted Wind Sock/Segmented Circle	Yes		
REILs	REILs	REILs	Yes		
VGSI	P4L/P4L	VGSI (VASIs/PAPIs)	Yes		
Approach Type	LNAV	NPA, LPV Desired	Yes		
Lighting	HIRL	MIRL	Yes		
Weather	AWOS	ASOS or AWOS Desired	Yes		
Hangar Storage	23 spaces	100% of Based Aircraft	No	Add 5 additional hangar spaces	$563,605
Apron Tie-Downs	6 spaces	20% of Busy Day Transient Aircraft	Yes		
Terminal/Admin Building	1,200 sq. ft. with Restrooms, Conference Room, and Pilots' Lounge	1,500 square feet with Restrooms, Conference Room, and Pilots' Lounge	No	Add 300 square feet of terminal space	$107,640
Auto Parking	20 spaces	1.5 Spaces per Based Aircraft Departures on Average Day in Peak Month	No	Add 40 auto parking spaces	$111,100
Ground Communications	Public Phone, WiFi	Public Phone, WiFi and GCO/RCO or ATCT	No	Install GCO or RCO	$44,000
Services					
Fuel	AvGas and Jet A	AvGas and Jet A	Yes		
FBO	Full Service	Full Service	Yes		
Rental Cars	----	Available	No	Provide accessibility to rental cars	*

Additional Actions Needed to Meet System Performance Measure Objectives	
Project Description	Estimated Cost
Identify On-Airport Properties Open for Aviation Development	$10,000
Identify On-Airport Properties Open for Non-Aviation Development	$10,000
Develop Noise Contours	$10,000
Spill Prevention, Control, and Countermeasure Plans	$10,000
Work w/Surrounding Jurisdictions to Attract Aviation Dependent Employers to the Airport Environs	*
Work w/Surrounding Municipalities to Enact Height Zoning Following Part 77	*
Work w/Surrounding Municipalities to Adopt Land Use Controls to Prevent Airport Encroachment	*
Establish a Plan to Promote the Efficient Use of Water	*
Improve Public Signage from Area Roadways	*
Establish a Program to Promote Recycling	*
Estimated RASP Project Costs	**$3,746,418**

*Note: *No fixed cost needed*
Acronyms defined in Technical Report Glossary

AIRPORT BENEFITS

General aviation airports are often part of the infrastructure needed to attract and retain jobs and to support the vibrancy of the local and/or regional economy. General aviation airports, however, also can sometimes support other benefits.

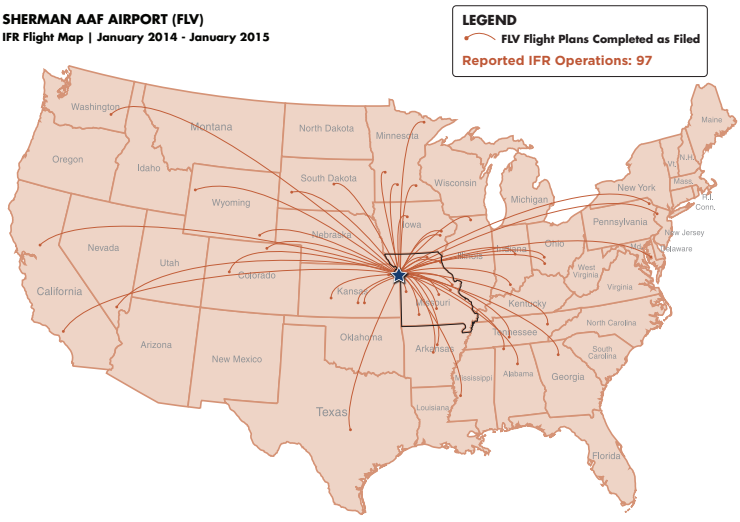
As part of a prior statewide study conducted KDOT (completed in 2009) the positive annual economic impacts of the Sherman Army Airfield were estimated. While the data that this estimate based on is not current, the results still help to show the airport's annual positive economic impact. It is worth noting that KDOT is currently updating the airport's economic impact estimate.

Total annual economic impacts for the airport are attributed to one or more of the following four economic activity centers: airport management, airport tenants, average annual capital investment, and spending by visitors who arrive on general aviation aircraft. Total impacts represent both direct and indirect impacts. Indirect impacts result from re-recirculating direct impacts, once the direct impacts enter the economy being studied. Indirect impacts were estimated using an input/output model. Since economic impacts are a "snapshot" in time of airport conditions that existed when the study was completed, it is possible that annual economic impacts for the airport have changed.

Estimated Annual Economic Impact			
Airport	Total Jobs	Total Payroll	Total Output
Sherman Army Airfield	30	$960,300	$2,701,000

The accompanying map shows how the Sherman Army Airfield supports non-stop flights on general aviation aircraft to destinations around the U.S. These instrument flight rule (IFR) flights were obtained from FAA data and represent only an estimated 3 percent of all of the airport's annual operations. This map shows how the airport ties the Kansas City area to other cities around the country.

SHERMAN ARMY AIRFIELD PROVIDES NON-STOP FLIGHTS TO ANYWHERE!



USER OUTREACH

As part of the system plan, outreach was completed through an online survey to collect additional information of how the study area relies on and benefits from general aviation airports. This survey, that was advertised through a press release sent to all media outlets in the study area, enabled airport users and employers to provide input on how they use the airports.

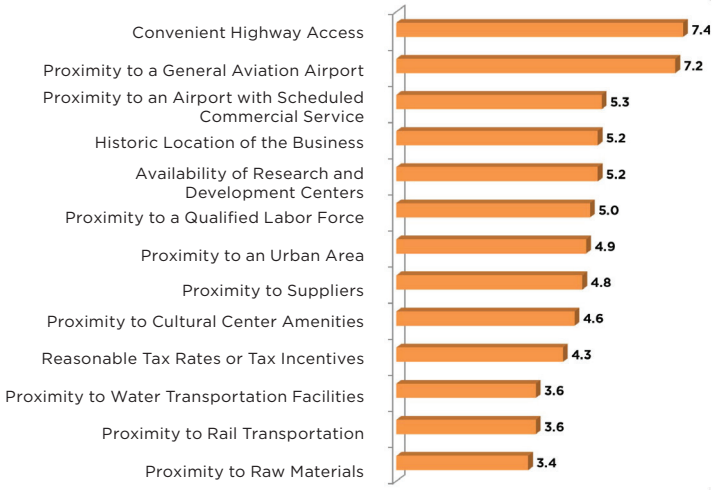
Survey responses from area employers show that the types of employers that most frequently rely on general aviation aircraft for travel and improved efficiency include:

- Government
- Professional Services
- Construction
- Retail Trade
- Health Care
- Real Estate
- Technical Support
- Finance and Insurance
- Social Services

Employer responses often indicated that more than 50 percent of their employees in the study area improve their job efficiency by using general aviation. Since this survey was geared to gather information from users/employers that benefit from general aviation, the high employee reliance is not surprising.

For businesses that rely on general aviation, the online survey also gathered information on how important the proximity of a general aviation airport is to their business location. Again, since general aviation-dependent businesses were targeted as the respondents for this survey, the high rating given to general aviation airport proximity is not unexpected. Nevertheless, for those employers in the study area that do rely on and benefit from one of the general aviation airports, only proximity to highway access is more important to the location of their business in the nine-county study area.

IMPORTANCE OF LOCATION FACTORS TO LOCAL BUSINESSES



By improving general aviation airports in the study area, such as the Sherman Army Airfield, the Kansas City metropolitan area will be able to continue to realize economic and other benefits.

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