Salina Regional SLN Airport

## Chapter Two

# FORECASTS

The definition of demand that may reasonably be expected to occur during the useful life of the airport's key components is an important factor in facility planning. In airport master planning, this involves projecting potential aviation activity for a 20-year timeframe. Aviation demand forecasting for the Salina Regional Airport (SLN) Master Plan will consider commer-cial passenger service projections, general aviation forecasts for based aircraft, and aircraft operational activity projections by aggregate annualized totals and by specific categories. Finally, military operations, unmanned aircraft system (UAS) operations, and peak period activity should be examined. All of these demand categories will serve as the basis for cur-rent and future facility planning.

The Federal Aviation Administration (FAA) has oversight responsibility to review and approve aviation forecasts de-veloped in conjunction with airport planning studies. The FAA reviews individual airport forecasts with the objective of comparing them to its Terminal Area Forecasts (TAF) and the National Plan of Integrated Airport Systems (NPIAS). In addition, aviation activity forecasts are an important input to the benefit-cost anal-yses associated with airport development, and FAA reviews these analyses when federal funding requests are submitted.

As stated in FAA Order 5090.3C, Field Formulation of the National Plan of Integrated Airport Systems (NPIAS), forecasts should:

- Be realistic
- Be based on the latest available data
- Be reflective of current conditions at the airport
- Be supported by information in the study
- Provide adequate justification for airport planning and development

Recognizing this, it is intended to develop an Airport Master Plan for Salina Regional Airport that will be demand-based rather than time-based. As a result, the reasonable levels of activity potential that are derived from this forecasting effort will be related to the planning horizon levels rather than dates in time. These planning levels will be established as levels of activity from which specific actions for the airport to consider will be presented.

The demand-based manner in which this Master Plan is being prepared is intended to accommodate variations in demand which can be caused by many factors, including changes in the aviation industry as well as the economy in general. Demand-based planning relates capital improvements to specific demand factors, such as based aircraft, instead of points in time. This allows the airport to address capital improvement needs according to actual demand occurring at the airport. Therefore, should growth in commercial passenger boardings, aircraft operations, or based aircraft slow or decline, it may not be necessary to implement some improvement projects. However, should the airport experience accelerated growth, the plan will be flexible to allow for expedited development opportunities.

In order to fully assess current and future aviation demand for the Salina Regional Airport, an examination of several influencing factors is needed. These include national and regional aviation trends, historical and forecast socioeconomic and demographic information of the area, and competing transportation modes and facilities. Consideration and analysis of these factors will ensure a comprehensive outlook for future aviation demand at Salina Regional Airport.

## *FAA NATIONAL FORECASTS*

Each year, the FAA updates and publishes a national aviation forecast. Included in this publication are forecasts for the large air carriers, regional/commuter air carriers, general aviation, and FAA workload measures. The forecasts are prepared to meet budget and planning needs of the constituent units of the FAA and to provide information that can be used by state and local authorities, the aviation industry, and the general public. The current edition when this chapter was prepared was FAA *Aerospace Forecasts – Fiscal Years 2012-2032*, published in March 2012. The FAA primarily uses the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook for aviation growth in international markets.

Over the past decade, the commercial air carrier industry has suffered several major shocks that have led to reduced demand for air travel. These shocks include the terror attacks of September 11, 2001, rising fuel prices, and the most significant global economic recession since the Great Depression. Airline business plans changed significantly to address the volatility in the industry. Carriers began charging separately for services historically bundled in the price of a ticket such as checked luggage fees and food fees. To lower operating costs, carriers eliminated unprofitable routes and grounded older, less fuel efficient aircraft. By 2010, the industry returned to profitability for the first time since 2007.

### ECONOMIC OUTLOOK

The aviation industry in the United States has experienced an event-filled decade.

Since the turn of the century, the industry has faced impacts of the events of September 11, 2001, scares from pandemics such as SARS, the bankruptcy of five network air carriers, all-time high fuel prices, and a serious economic downturn with global ramifications. The Bureau of Economic Research has determined that the worst economic recession in the post-World War II era began in December 2007. Eight of the world's top 10 economies were in recession by January 2009.

As the recession began, unemployment in the United States was at 5.0 percent. While it grew through 2008, unemployment intensified in 2009 until peaking at 10.1 percent in October, although the recession officially ended in June of that year. As of the end of 2011, unemployment stood at 8.6 percent of the labor force.

This recession did not face the high inflationary environment of the recession in the early 1980s or the high-energy costs of the mid-1970s recession. While recessions during the post-war era have averaged 10 months in duration, this one lasted 19 months. Continued levels of high debt, a weak housing market, and tight credit are expected to keep the recovery modest by most standards. The resolution of those factors will determine the future path of the recovery.

The nation's gross domestic product (GDP) is the primary measure of overall economic growth. The FAA forecasts were based upon a 3.1 percent annual average growth in GDP from federal fiscal year (FY) 2013 through FY 2017. For the long term, the FAA forecasts are based upon real GDP growth slowing to 2.5 percent annually. GDP growth rate in 2011 was 2.1 percent with signs at the end of the FY showing pent-up demand coming back with growth in consumer spending, a turn-around in the housing market, and traction in the labor market.

Economic growth on the global scale is expected to be higher, with emerging markets in Asia/Pacific and Latin America leading the way. The global GDP was projected to grow at an average of 3.3 percent over the 20-year forecast period.

## COMMERCIAL PASSENGER AIRLINES

Although the recession has been officially over for more than two years, carriers continue to deal with economic uncertainties with business travel budgets still strained and unemployment still above eight percent. Capacity reductions in recent years helped to counter fuel costs and reduce demand. Load factors and trip lengths have increased, while available seats per aircraft mile (capacity) decreased. The reduction in capacity did allow the carriers to raise air fares when demand began to return. This has allowed the industry to post net profits the past two years.

The passenger airlines in the United States are comprised of 16 mainline carriers that use large passenger jets (over 90 seats) and 68 regional carriers utilizing smaller piston, turboprop, and regional jets (up to 90 seats). In addition, there are 26 all-cargo carriers providing domestic and/or international air cargo services. Three distinct trends are emerging in today's commercial air carrier industry:

- Convergence of the network and low cost carrier business models and unit costs;
- Continuing industry consolidation and restructuring, and;

- The proliferation of ancillary revenues (e.g., baggage fees).

A sign that the low cost carriers and network carriers are converging is the narrowing share of capacity flown between these two groups and the fares they charge. Low cost carrier capacity has been on the rise. Since 2000, the share of capacity flown by the low cost carriers has almost doubled, going from 17 percent in 2000 to 32 percent in 2011. Airfares have also been converging as low cost carriers and network carriers are lowering fares.

The industry continues to consolidate. Network carriers Northwest and Delta merged in 2010. Frontier Airlines completed its acquisition of Midwest Airlines. Also announced in 2010 was the merger of Continental and United Airlines, Southwest and Air Tran, and SkyWest's acquisition of ExpressJet. As a result, overall capacity (seats) is down 7.0 percent when compared to 2001.

The reduction in overall capacity has been primarily the result of mainline carrier (both low cost and network carriers) capacity reduction. In 2011, mainline carriers provided 16 percent less capacity than it did in 2001 (and carried 12 percent fewer passengers). Conversely, capacity provided by regional carriers has increased 153 percent, with a 113 percent increase in passengers since 2001.

The shift in capacity to regional carriers can be attributed to:

- Fleet transformation from piston and turboprops to regional jets by the regional carriers;
- A reduction in overall travel demand, and;
- Mainline carriers shifting some routes to regional carriers.

Over the past few years, however, this trend has slowed down considerably. In 2011, mainline carrier passenger growth was up 3.4 percent over 2010, while regional carriers declined by 0.4 percent.

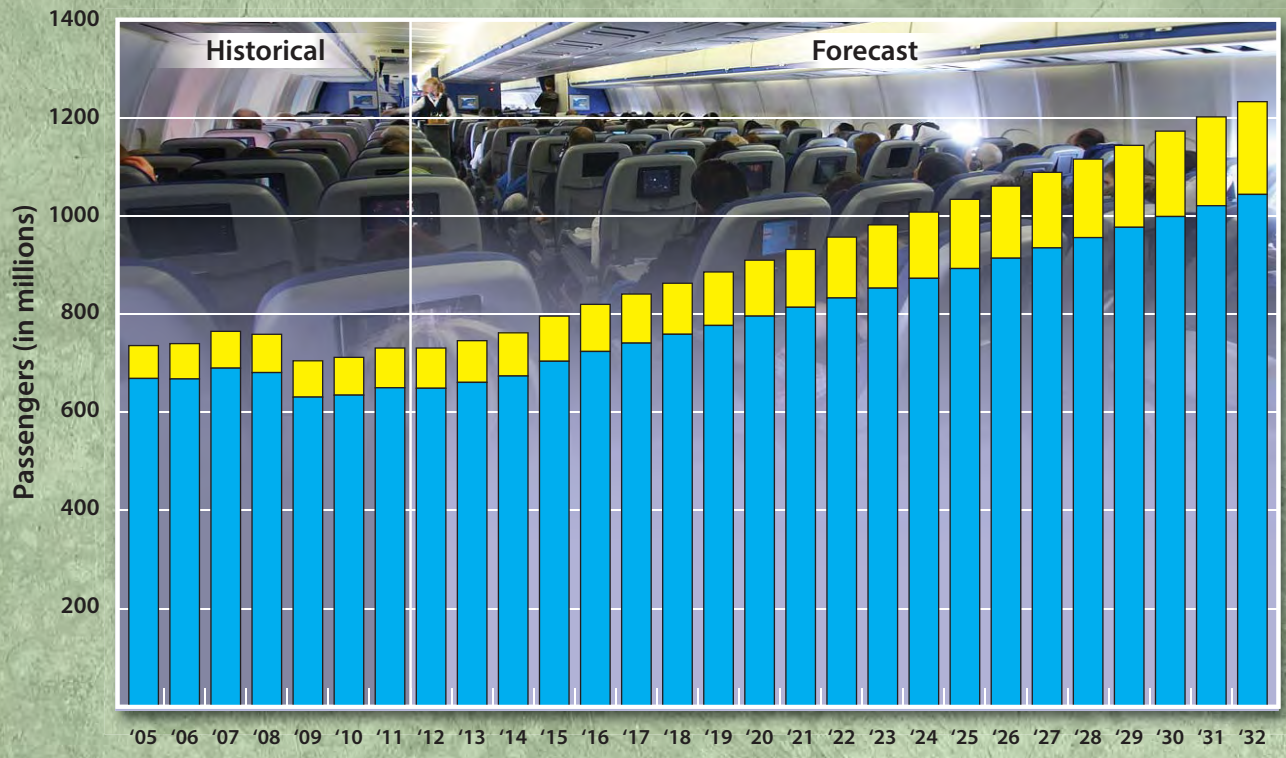
The FAA provides several measures for commercial airline forecasts. After experiencing growth in 2011, domestic system capacity was projected to decrease slightly in 2012 by 0.8 percent. Similarly, mainline carrier capacity is forecast to decrease when compared to 2011 (down 0.3 percent). Regional carriers were forecast to decrease 0.5 percent in 2012, following modest growth of 0.6 percent in 2011. For the entire forecast period, domestic capacity is projected to increase at an average annual rate of 2.5 percent, with mainline carriers growing slower (2.4 percent per year) than the regional carriers (3.3 percent annually).

Enplanements were forecast to slightly decline (down 0.1 percent) in 2012, following a 2.3 percent increase in 2011. Over the forecast period, domestic enplanements are projected to grow at an average annual rate of 2.3 percent, with mainline carriers growing more slowly than regional carriers (2.2 versus 2.5 percent a year, respectively). **Exhibit 2A** presents the annual historical and forecast enplanement totals for both large air carriers and commuter airlines in the U.S.

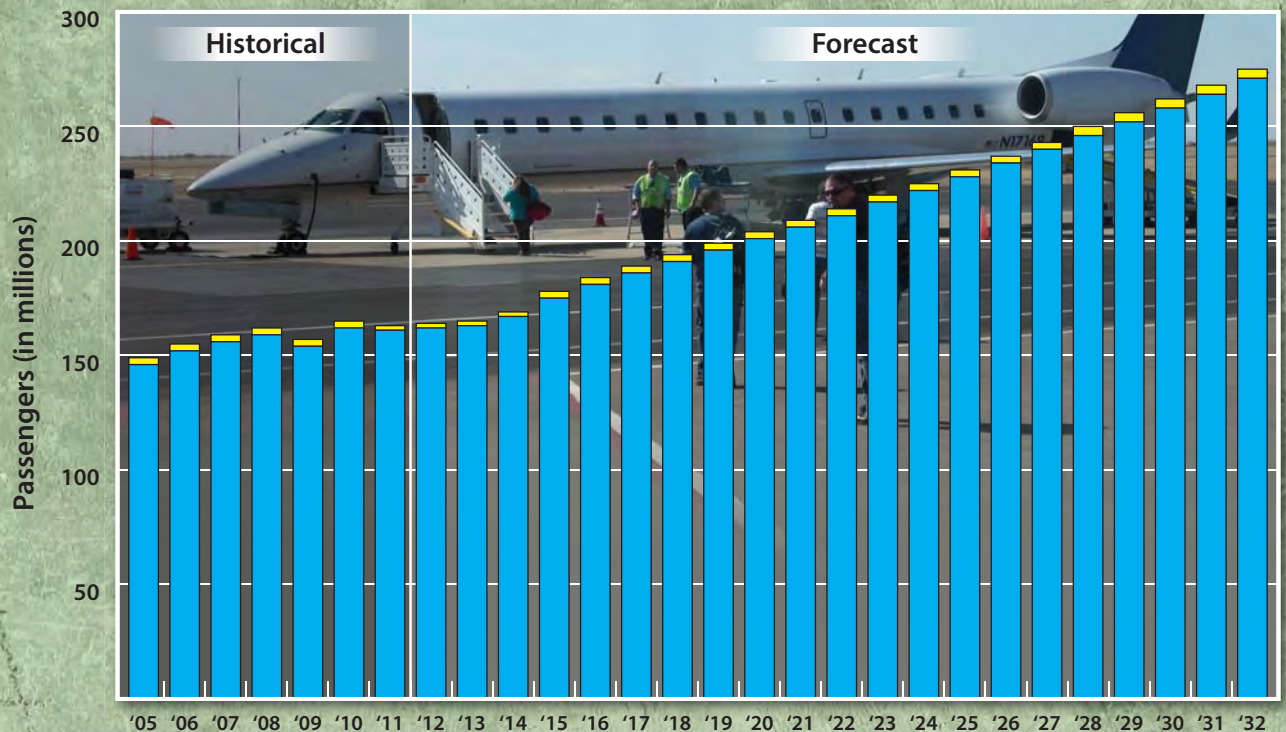
## COMMERCIAL AIRCRAFT FLEET

The number of commercial aircraft is forecast to grow from 7,185 in 2011 to 9,853 in 2032 for an average annual growth rate of 1.5 percent. Following

## U.S. Scheduled Commercial Air Carrier Passenger Enplanements




## U.S. Regional / Commuter Scheduled Passenger Enplanements




Source: FAA Aerospace Forecasts, Fiscal Years 2012-2032

**Exhibit 2A**
**U.S. Commercial Air Carrier and Regional/Commuter Forecasts**

trends in recent years, a total of 96 aircraft are projected to be removed from the fleet in 2012, after shrinking by 29 in 2011, as the slow economic recovery and high fuel prices have prompted carriers to trim their fleets.

The number of passenger jets in the mainline fleet decreased by 12 in 2011 and is expected to fall by 87 aircraft in 2012. After 2012, the mainline aircraft fleet is projected to add approximately 90 aircraft annually, totaling 5,528 aircraft in 2032. The narrow-body fleet (including the Embraer 190s) is projected to grow at 1.6 percent annually from 2011-2032. The wide-body fleet (including the Boeing 787 and Airbus A-350) is projected to average 3.6 percent annual growth over the same period.

The regional passenger aircraft fleet is projected to decrease by 19 aircraft in 2011, but is expected to increase overall during the next 20 years, showing annual growth of 0.7 percent through 2032. All of the growth in the regional jets is anticipated in aircraft with more than 50 seats. Over the forecast period, most all of the 50-seat and under regional jets will have retired from the fleet.

The turboprop/piston fleet is expected to shrink from 860 units in 2011 to 564 in 2032. Turboprop/piston aircraft are expected to account for just 19 percent of the regional carrier passenger fleet in 2032, down from a 34 percent share in 2011.

Large cargo jet aircraft are forecast to increase by two percent annually over the next 20 years (from 879 aircraft in 2011 to 1,345 aircraft in 2032). The narrow-body cargo jet fleet is projected to increase by 1.8 percent annually over the forecast period as older 757s and 737s are converted to cargo service. The wide-body fleet is projected to increase by 2.2 percent annually, driven primarily by new offerings such as the Boeing 747-800F.

## GENERAL AVIATION

The FAA forecasts the fleet and hours flown for single-engine piston aircraft, multi-engine piston aircraft, turboprops, business jets, piston and turbine helicopters, light sport, experimental, and others (gliders and balloons). The FAA forecasts "active aircraft," not total aircraft. An active aircraft is one that is flown at least one hour during the year. **Exhibit 2B** presents the historical and forecast U.S. active general aviation aircraft.

After growing rapidly for most of the decade, the demand for business jet aircraft has slowed over the past few years as the industry has been hard hit by the economic recession. Nonetheless, the FAA forecast calls for robust growth in the long-term, driven by higher corporate profits and continued concerns about safety, security, and flight delays. Overall, business aviation is projected to outpace personal/recreational use.

The active general aviation fleet is projected to increase at an average annual rate of 0.6 percent through 2032, growing from a 2011 estimate of 222,520 to 253,205 in 2032. The turbine fleet, including helicopters, is forecast to grow annually at 2.9 percent, with the jet portion increasing at 4.0 percent a year.

Piston-powered aircraft, including helicopters, are projected to decrease from the 2011 total of 158,055 through 2024, with declines in both single and multi-engine fixed wing aircraft but growth in piston helicopters. Starting in 2025, ac-

tive piston-powered aircraft are forecast to increase to 155,395 in 2032, still below the current number in the fleet. Fixed-wing single and multi-engine piston aircraft are forecast to decline annually at 0.1 percent and 0.5 percent, respectively.

The FAA began tracking the light sport aircraft segment of the general aviation fleet in 2005. At the end of 2011, a total of 6,645 aircraft were estimated in this category. By 2032, a total of 10,195 light sport aircraft are forecast to be in the fleet.

## UNMANNED AIRCRAFT SYSTEMS

Unmanned Aircraft Systems (UAS) are an emerging segment of the aviation industry. Traditionally, these systems were used only for military purposes and recreational "radio flyers"; however, the UAS industry has exploded onto the aviation scene. At this point in time, UAS impacts are not widespread as their uses are being closely limited to certain locales. Over time, UAS will likely be very common across the country.

SLN is at the leading edge of UAS technology. Kanas State University (KSU) Salina is very involved in the development and growth of UAS technology. For this reason, this master planning process must be sensitive to UAS needs. In 2012, the FAA established the Unmanned Aircraft Systems Integration Office to provide a one-stop portal for civil and public use UAS in U.S. airspace. This office is developing a comprehensive plan to integrate and establish operational and certification requirements for UAS. It will also oversee and coordinate UAS research and development. The following section presents information obtained from the FAA UAS dedicated website.

### FAA UAS Information

UAS vary significantly in shapes and sizes and serve diverse purposes. They may have a wingspan as large as a Boeing 737 or smaller than a radio-controlled model airplane. Regardless of size, the responsibility to fly safely applies equally to manned and unmanned aircraft operations. The FAA first authorized use of unmanned aircraft in the national airspace system (NAS) in 1990. Since then, the agency has authorized limited use of UAS for important missions in the public interest, such as firefighting, disaster relief, search and rescue, law enforcement, border patrol, military training, and testing and evaluation. Today, UAS perform border and port surveillance by the Department of Homeland Security, help with scientific research and environmental monitoring by the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA), support public safety by law enforcement agencies, help state universities conduct research, and support various other missions for public (government) entities.

Because they are inherently different from manned aircraft, introducing UAS into the nation's airspace is challenging for both the FAA and aviation community. UAS must be integrated into an NAS that is evolving from ground-based navigation aids to a GPS-based system.

Unmanned aircraft are now flying in the NAS under very controlled conditions. Operations can range from ground level to above 50,000 feet, depending on the specific type of aircraft. However, UAS operations are currently not authorized in Class B airspace, which exists over major urban areas and contains the highest density of manned aircraft in the NAS.

# U.S. Active General Aviation Aircraft

| | 2012 | 2017 | 2022 | 2027 | 2032 |
|---|---|---|---|---|---|
| **FIXED WING** | | | | | |
| **Piston** | | | | | |
| Single Engine | 137,600 | 133,650 | 132,010 | 132,660 | 135,340 |
| Multi-Engine | 15,735 | 15,425 | 15,010 | 14,680 | 14,350 |
| **Turbine** | | | | | |
| Turboprop | 9,505 | 9,870 | 10,300 | 10,860 | 11,445 |
| Turbojet | 12,050 | 14,470 | 17,620 | 21,760 | 26,935 |
| **ROTORCRAFT** | | | | | |
| Piston | 3,780 | 4,250 | 4,680 | 5,180 | 5,705 |
| Turbine | 6,940 | 8,180 | 9,465 | 10,965 | 12,550 |
| **EXPERIMENTAL** | | | | | |
| | 24,480 | 26,165 | 27,825 | 29,480 | 31,140 |
| **SPORT AIRCRAFT** | | | | | |
| | 6,930 | 7,845 | 8,630 | 9,410 | 10,195 |
| **OTHER** | | | | | |
| | 5,670 | 5,635 | 5,605 | 5,575 | 5,545 |
| **TOTAL** | **222,690** | **225,490** | **231,145** | **240,570** | **253,205** |


Source: FAA Aerospace Forecasts, Fiscal Years 2012-2032.

Notes: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

**Exhibit 2B**
**U.S. Active General Aviation Aircraft Forecasts**

There are currently two ways to get FAA approval to operate a UAS. The first is to obtain an experimental airworthiness certificate for private sector (civil) aircraft to do research and development, training and flight demonstrations. The second is to obtain a Certificate of Waiver or Authorization (COA) for public aircraft. Routine operation of UAS over densely-populated areas is prohibited at this time. KSU currently has an approved COA for UAS operations in its Class D airspace. Furthermore, KSU Salina maintains a COA to operate its UAS at Smoky Hill and Crisis City.

The COA allows an operator to use a defined block of airspace and includes special provisions unique to the proposed operation. For instance, a COA may require flying only under visual flight rules (VFR) and/or only during daylight hours. COAs usually are issued for a specific period, up to two years in many cases.

Most COAs require coordination with an appropriate air traffic control facility and may require a transponder on the UAS to operate in certain types of airspace. Because UAS technology cannot currently comply with "see and avoid" rules that apply to all aircraft, a visual observer or an accompanying "chase plane" must maintain visual contact with the UAS and serve as its "eyes" when operating outside airspace restricted from other users. There were 345 COAs active at the end of November 2012. Since 2009, the following number of COAs has been issued annually:

- 2009 - 146
- 2010 - 298
- 2011 - 313

Integrating UAS into the nation's airspace presents both opportunities and challenges. New policies, procedures and approval processes are being developed to integrate civilian UAS operators into the NAS. Developing and implementing new UAS standards and guidance is a long-term effort.

The FAA chartered a UAS Aviation Rulemaking Committee in 2011 to develop inputs and recommendations on appropriate operational procedures, regulatory standards and policies before allowing routine UAS access to the nation's airspace. The FAA has asked the Radio Technical Commission for Aeronautics (RTCA), a group that facilitates expert advice to the agency on technical issues, to work with the industry to assist in the development of UAS standards. RTCA's technical group will address how UAS will handle communication, command, and control and how they will "sense and avoid" other aircraft. The FAA continues to work closely with its international aviation counterparts to harmonize standards, policies, procedures, and regulatory requirements.

**UAS at SLN**

UAS operations have occurred at SLN and will likely increase over time as the industry continues to grow. KSU Salina is actively involved and dedicated to continued involvement with UAS technology. At this time, KSU primarily conducts its UAS operations at Crisis City or Smoky Hill for convenience; however, it is authorized to utilize Runway 18-36 for UAS operations. KSU indicates a desire to use the airport for its operations on an infrequent basis going forward.

Forecasting UAS operations at SLN with any degree of accuracy is not possible at this time. There are no trends to draw

from and no significant activity at the airport currently. For this study, however, UAS operations will be factored as a part of the overall planning effort. Future facility plans will consider UAS needs whether they are civilian or military applications.

## *AIRPORT SERVICE AREA*

The initial step in determining the aviation demand for an airport is to define its generalized service area for various segments of aviation the airport can accommodate. The service area is determined primarily by evaluating the location of competing airports, their capabilities, their services, and their relative attraction and convenience. In determining the aviation demand for an airport, it is necessary to identify the role of the airport as well as the specific areas of aviation demand the airport is intended to serve. For Salina Regional Airport, the primary civilian roles are to accommodate commercial passenger airline service as well as general aviation demand in the region.

SLN serves a very important role for the military; however, military service areas are not considered for FAA planning purposes. Military use of civilian airports is common and will vary based on military missions and the influence of regional military installations. As previously detailed in Chapter One, SLN currently serves as a Forward Operating Location (FOL) for the military and is home to the Kansas National Guard Army Aviation Support Facility (AASF) #2 and facilities serving the Kansas Guard Great Plains Joint Training Center (GPJTC). It also supports training operations associated with regional operations by Fort Riley as well as other federal and even international military units. SLN will continue to serve military uses for the foreseeable future and this master plan will factor the integration of military operations with civilian operations at the airport.

The service area for an airport is a geographic region from which an airport can be expected to attract the largest share of its activity. The definition of the service area can then be used to identify other factors, such as socioeconomic and demographic trends, which influence aviation demand at the airport. Moreover, aviation demand will be impacted by the proximity of competing airports, the surface transportation network, and the strength of commercial airline and/or general aviation services provided by the airport and competing airports.

As in any business enterprise, the more attractive the facility is in terms of service and capabilities, the more competitive it will be in the market. If an airport's attractiveness increases in relation to nearby airports, so will the size of its service area. If facilities and services are adequate and/or competitive, some level of aviation activity might be attracted to the airport from more distant locales.

### COMMERCIAL SERVICE

Salina Regional Airport has offered passenger commercial services of varying degrees over the past 40 years. As described in the previous chapter, commercial passenger services have diminished over that period since deregulation of the airlines in 1978. Before deregulation, airlines were subsidized by the U. S. Government and provided more point-to-point services. At that time, many smaller and regionalized communities were provided with higher levels of service including access to several markets; however,

post deregulation, airlines are freely allowed to choose markets and set market prices. As a result, airlines must compete for market share and profitability of each market-pair (origination and destination airport) is highly scrutinized. The airlines have moved away from a generalized point-to-point market system in favor of a hub and spoke system. Unfortunately, the overall result of these changes has been the discontinuation or significant reduction of services to most smaller communities.

In response to loss of air service in small communities, the Essential Air Service (EAS) was developed and is administered by the U. S. Department of Transportation (DOT). EAS was put into place to guarantee that small communities beyond a reasonable driving distance to a large hub airport and that were served by certificated air carriers before deregulation maintain a minimal level of scheduled air service. The DOT's mandate is to provide the EAS communities with access to the national air transportation system. As a general matter, this is accomplished by subsidizing two to four round trips a day, with three being the norm, via 19-seat aircraft, to a major hub airport. The DOT currently subsidizes commuter airlines to serve approximately 163 rural communities across the country that otherwise would not receive any scheduled air service. SLN participates in the EAS program with SeaPort Airlines as the current service provider.

An airport's commercial airline passenger service area is influenced by several factors with competing transportation modes playing a key role. The higher the level of competing factors, the less likely an airport is to capture a large percentage of its service area passengers. This is especially true for regionalized commercial service airports offering limited airline services. Competing transportation modes become much more attractive if airline services at nearby airports are limited. Thus, the first consideration for determining the Salina Regional Airport commercial service area is an examination of the level of commercial services available at the airport. Levels of service factors that typically shape the market share within a service area include frequency of service, number of airlines, type of aircraft utilized, and non-stop destinations available.

**SLN Service**

SeaPort Airlines currently offers three scheduled non-stop commercial flights to Kansas City International Airport (MCI) every day of the week except Saturday when no flights are offered. Aircraft depart from the M. J. Terminal Building at SLN and arrive at a fixed base operator (FBO) facility at MCI. From Kansas City, SeaPort Airlines can connect Salina passengers with non-stop flights to Harrison, Arkansas or Memphis, Tennessee. Passengers can then continue on SeaPort Airlines to other destinations such as Dallas, Texas, Athens, Georgia, and other Arkansas and Tennessee locales. Once in Kansas City, Salina passengers may also elect to shuttle to the main terminal complex at MCI and utilize mainline airlines.

The current airline schedule offered by SeaPort Airlines includes an early morning departure (6:00 a.m.), mid-day departure (11:25 a.m.), and a late afternoon departure (3:40 p.m.). The three arrivals are also spread throughout the day at 10:15 a.m., 3:25 p.m., and 8:30 p.m. The current schedule is somewhat ideal, especially for travelers which seek connections beyond Kansas City allowing the

passengers with opportunities to transition to mainline carriers during peak hub "bank" operations. If Kansas City is the primary destination, the current schedule would easily allow for a day-trip between the city pair.

Airline reliability also needs to be factored for commercial service potential at Salina Regional Airport. Typically, passengers with fixed schedules, primarily business travelers, may elect not to risk the chance of missing a flight due to a mechanical, weather, or scheduling conflict, instead opting for other transportation modes. SeaPort Airlines maintains a good performance record as evidenced by its high customer satisfaction reports. In fact, the airline takes pride in offering quality services and high reliability.

Ticket pricing can also be a factor in the success of commercial service. Currently, tickets purchased early for SeaPort Airline service between SLN and MCI can cost as low as $39 per leg, or approximately $80 dollars for the round trip (minus applicable taxes), while last minute tickets are more than double that, or just over $180 per round trip. These costs are very reasonable for business travelers, especially if Kansas City is the intended destination. The drive to downtown Kansas City from Salina is approximately 190 miles and could cost the traveler $50 or more in gas (25 mile-per-gallon vehicle) and toll costs.

Airfares could be considered high for some business travelers and for leisure travelers in general, especially if the intended destination is beyond MCI and if there are multiple travelers. The critical factor for most leisure travelers is the cost difference between driving and flying. The drive from Salina to MCI is approximately three hours and 200 miles. Wichita Mid-Continent Airport (ICT) is only 90 miles to the south, but offers more limited service than does MCI. The cost of driving increases when gas prices increase. Parking fees at MCI or ICT is another factor which increases the cost of diving versus flying from SLN. The cost of driving to MCI or ICT for airline service can be high for a single passenger, but much lower if a family or group is traveling together.

A final factor to consider is the aircraft equipment utilized by airline. SeaPort currently utilizes a single engine turboprop Pilatus PC-12 aircraft. The PC-12 has a seating capacity of nine. Thus, the current schedule and aircraft options allow for only 27 departing and arriving passengers daily.

Given the limitations of current airline service at Salina Regional Airport, the airport will experience passenger leakage. Passenger leakage is a common industry term that describes potential service area passengers choosing to use other transportation modes rather than the local airport. The primary competing transportation mode is surface transportation. Even with gasoline prices consistently above $3 per gallon, driving between city pairs is common for regionalized travelers. The availability of U.S. Interstates 70 and 135 adjacent to the airport provides a high-speed corridor to southern (Wichita), eastern (Kansas City), and western (Denver) points from Salina.

**Competing Airports**

The surface transportation network provides options for local travelers to use other commercial service airports in the region as well. Regional competing airports include Manhattan Regional Air-

port, Hays Regional Airport, Wichita Mid-Continent Airport, and Kansas City International Airport. As with Salina Regional Airport, airline service factors for these airports will contribute greatly to whether a passenger will elect to use one of these regional airports instead of SLN.

Hays Regional Airport (HYS) plays an insignificant role in passenger leakage at SLN. HYS offers four daily non-stop departures to Denver International Airport (DEN) via Great Lakes Airlines. The airline operates the Beechcraft 1900D, a 19 passenger seat aircraft, for its service. A review of current round trip airfares indicates that advance purchase tickets cost as low as $220 and increase to more than $600. These prices do not include any applicable taxes and fees. While service at HYS is probably valued by its local passengers, limited flights, relatively few passenger seats, relatively expensive airfare options, and the 100 mile drive to Hays will not significantly influence Salina passengers.

Manhattan Regional Airport (MHK), located approximately 60 highway miles east/northeast of Salina, currently offers five daily commercial service flights via American Eagle Airlines. American Eagle's current schedule includes three daily departures to Dallas Fort Worth International Airport (DFW) as well as two daily departures to Chicago O'Hare International Airport. Service is conducted on Embraer 145 regional jet (ERJ 145) aircraft which have a 50 passenger seat capacity. An examination of airfares indicates that advance round-trip tickets can cost as little as $250.

The current service offered by American Eagle at MHK is definitely a leakage factor for SLN passengers. A relatively short drive to Manhattan offers Salina area passengers with an opportunity for competitive advance ticket prices and service to two of the world's busiest airports. If Chicago or Dallas/Fort Worth is not the intended destination, passengers can be connected to all major population centers in the world from one of these two airports. Moreover, up to 250 departure seats are available for purchase daily.

As previously discussed, ICT and MCI are larger commercial service airports located approximately 90 and 200 miles, respectively, to the south and east/northeast of SLN. These airports also serve as a significant air passenger leakage factor for SLN. Both of these airports are served by major mainline and regional passenger airlines.

ICT offers 33 daily departures to major metropolitan areas such as Atlanta, Dallas, Chicago, Denver, Houston, and Minneapolis. Allegiant Airlines offers two weekly departures to Phoenix/Mesa and four weekly departures to Las Vegas. Aircraft utilized for these routes includes a mix of narrow-body aircraft such as the Airbus 319/20, Boeing 717, and the MD-80 as well as smaller regional jet aircraft. MCI offers an even higher level of airline service with 181 daily departures to 45 non-stop destinations including those by low-cost carrier Southwest Airlines. Non-stop service is offered to all cities served by ICT airlines as well as others. A sampling of MCI's other non-stop destinations include Albuquerque, Baltimore, Cleveland, Detroit, Los Angeles, Orlando, New York, Seattle, San Francisco, and Washington D.C.

**Commercial Service Area Summary**

The airports in Manhattan, Wichita, and Kansas City will continue to be significant

competitors for local travelers. The service at these airports will not only be an attractant for Salina area passengers, but will also limit any regional travelers from using SLN for commercial passenger services. Finally, SeaPort Airlines offers a competitive pricing structure and is reliable; however, it is limited to only 27 passenger seats per day. Obviously, with so few seats available, the current level of service will not be capable of meeting local and regional market demand.

Some factors could influence increased use of SLN. Higher gasoline prices added to automobile parking costs and drive time requirements could reduce future leakage. Ticket prices and reliable service offered by SeaPort Airlines at SLN will favor the use of the local airport. SLN could attract an irregularly scheduled commercial airline such as Allegiant Airlines, which can offer strategically timed flights on larger commercial service aircraft.

While the passenger service area for Salina Regional Airport may extend into rural areas, the primary source for passengers for the airport is, and will continue to be, Saline County and the primary population center surrounding the City of Salina. Furthermore, it is unlikely that the commercial service area extends much beyond the county as MHK, ICT, MCI, and even HYS, will attract passengers located closer to those airports. For planning purposes, the commercial service area for Salina Regional Airport will be primarily delineated by Saline County. A secondary service area of satellite communities in neighboring counties will generate limited and sporadic demand.

**GENERAL AVIATION**

General aviation is the term used to describe a diverse range of aviation activities which includes all segments of the aviation industry, with the exception of commercial air carriers and military. General aviation is the largest component of the national aviation system and includes common activities such as pilot training, recreational flying, agricultural applications, medical support, and other business and corporate uses. General aviation aircraft can range from small glider and single engine aircraft to large turboprop and jet powered aircraft. In fact, some larger commercial airline aircraft models such as the Boeing 737, known as the Boeing Business Jet (BBJ), have been converted to private general aviation uses. Moreover, many retired military aircraft are now in service with general aviation functions.

Typically, the general aviation service area for more rural and regionalized airports can extend up to 30 miles. The proximity and level of general aviation services are largely the defining factors when describing the general aviation service area. A description of airports within an approximate 30-nautical mile radius of SLN was discussed in Chapter One and includes five public-use and ten private-use airports.

SLN's location in the east-central portion of the county adjacent to the City of Salina makes it an important facility serving the needs of general aviation in Saline County. Existing airport facilities including four runways, with its primary runway

providing 12,300 feet of length, precision instrument approach capabilities, high quality aviation service providers, and abundant hangar space situates SLN as the region's premier general aviation option. No other airport in the immediate region can match the facilities and services provided at SLN.

When discussing the general aviation service area, another primary demand segment that needs to be addressed is an airport's ability to attract based aircraft. As long as reasonably priced hangars and aviation services are offered, most aircraft owners and operators will choose to base at an airport near their home or business. As a result, the general aviation service area will tend to be more compact than a commercial service area. The corporate aviation component of the service area can extend a bit further depending on competing airports.

A generalized 30-mile service area would extend into eight nearby counties. **Exhibit 2C** depicts the zip code location of all registered aircraft in the region between 1993 and 2012. As depicted, the majority of registered aircraft are concentrated in and around regional population centers. In fact, most are located very close to an existing airport.

All significant population centers within the 30-mile radius of SLN outside of Saline County are served by local general aviation airports. While these airports have more limited facilities and offer fewer services, they are much closer to the local aircraft owners and airport users. Proximity to an airport is typically the most important aviation demand factor for general aviation activity. Most general aviation operators will elect to operate at a closer airport unless facilities or services cannot be provided. For example, limited runway length could prohibit corporate users from operating at Minneapolis City County Airport so they could choose SLN instead. Another example could include an aircraft operator choosing a more distant airport location for more preferable rate and fee structures.

As long as reasonably priced hangars and aviation services are offered, most aircraft owners and operators will choose to base at an airport nearer their home or business. As a result, a general aviation airport service area will tend to be more compact than a commercial service area. The corporate aviation component of the service area can extend a bit further depending on competing airports.

For planning purposes, the primary general aviation service area for SLN will be Saline County. Airports serving the population centers in nearby counties will effectively limit the service area. As with the commercial service area, a secondary service area, although limited, will extend into the surrounding counties, especially those to the north of Saline.

## *SOCIOECONOMIC FORECASTS*

The socioeconomic conditions for the area provide an important baseline for preparing aviation demand forecasts. Local socioeconomic variables such as population, employment, and income are indicators for understanding the dynamics of the county and, in particular, the trends in aviation growth. Socioeconomic data for Saline County, presented in the previous chapter on Exhibit 1P and in **Table 2A**, has been utilized in various statistical analyses to develop forecasts of aviation demand for the Salina Regional Airport. The data was obtained from Woods & Poole Complete Economic and Demographic Data Set (CEDDS) prepared in 2012.

**TABLE 2A**
**Socioeconomic Projections**

| | HISTORICAL | | | | | FORECAST | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 2000 | 2010 | 2012 | AAGR | 2017 | 2022 | 2032 | AAGR |
| ***TOTAL POPULATION (State Of Kansas in thousands)*** | | | | | | | | | |
| Saline County | 49,413 | 53,659 | 55,733 | 56,011 | 0.57% | 56,843 | 57,783 | 59,639 | 0.31% |
| State Of Kansas | 2,481.35 | 2,693.68 | 2,859.17 | 2,902.12 | 0.71% | 3,016.79 | 3,135.38 | 3,373.13 | 0.75% |
| ***TOTAL EMPLOYEMENT (State of Kansas in thousands of jobs)*** | | | | | | | | | |
| Saline County | 32,420 | 39,338 | 37,806 | 38,104 | 0.74% | 40,939 | 44,045 | 51,125 | 1.48% |
| State Of Kansas | 1,473.90 | 1,757.89 | 1,813.31 | 1,836.24 | 1.00% | 1,949.56 | 2,067.84 | 2,320.80 | 1.18% |
| ***TOTAL PERSONAL INCOME PER CAPITA (in 2005 dollars)*** | | | | | | | | | |
| Saline County | $26,972 | $32,630 | $34,605 | $36,169 | 1.34% | $38,968 | $43,110 | $53,657 | 1.99% |
| State Of Kansas | $24,997 | $31,710 | $35,809 | $36,978 | 1.80% | $39,083 | $42,233 | $50,060 | 1.53% |

Source: Woods & Poole *CEDDS* 2012

Total resident population for the county in 2012 is estimated at 56,011. As presented in the table, the county experienced an average annual growth rate (AAGR) of 0.57 percent since 1990. The resident population for Saline County is forecast to increase to 59,640 by 2032, representing a 0.31 percent AAGR over the planning period. For comparative purposes, population for the State of Kanas has experienced a 0.71 percent AAGR since 1990, with a projected AAGR increase of 0.75 percent over the planning period.

Historical and forecast employment data for Saline County and the State of Kansas are also presented in **Table 2A**. Between 1990 and 2012, Saline County employment grew by an average of 0.74 percent annually. This growth rate slightly trailed the state's AAGR of 1.0 percent. Through the next 20 years, Saline County employment is forecast to grow at a higher pace than what has been experienced since 1990. In fact, the projected Saline County employment growth rate exceeds that projected for the State of Kansas.

**Table 2A** also compares personal income per capita (PCPI) (adjusted to 2005 dollars) for the county and the state. Saline County's adjusted PCPI for 2012 was $36,169, only slightly lower than the State of Kansas at $36,978. In 1990 and 2000, Saline County had a higher PCPI than the state; however, in 2010, the State PCPI surpassed Saline County. Saline County PCPI is projected to exceed State levels by 2022 and beyond, increasing at a 1.99 percent AAGR over the planning period.

## *FORECASTING APPROACH*

The development of aviation forecasts proceeds through both analytical and judgmental processes. A series of mathematical relationships is tested to establish statistical logic and rationale for projected growth. However, the judgment of the forecast analyst, based upon professional experience, knowledge of the aviation industry, and assessment of the local situation, is important in the final determination of the preferred forecast.

The most reliable approach to estimating aviation demand is through the utilization of more than one analytical technique. Methodologies frequently considered include trend line projections, correlation/regression analysis, and market share analysis. By developing several projections for each aviation demand indicator, a reasonable planning envelope

Salina Regional
SLN Airport

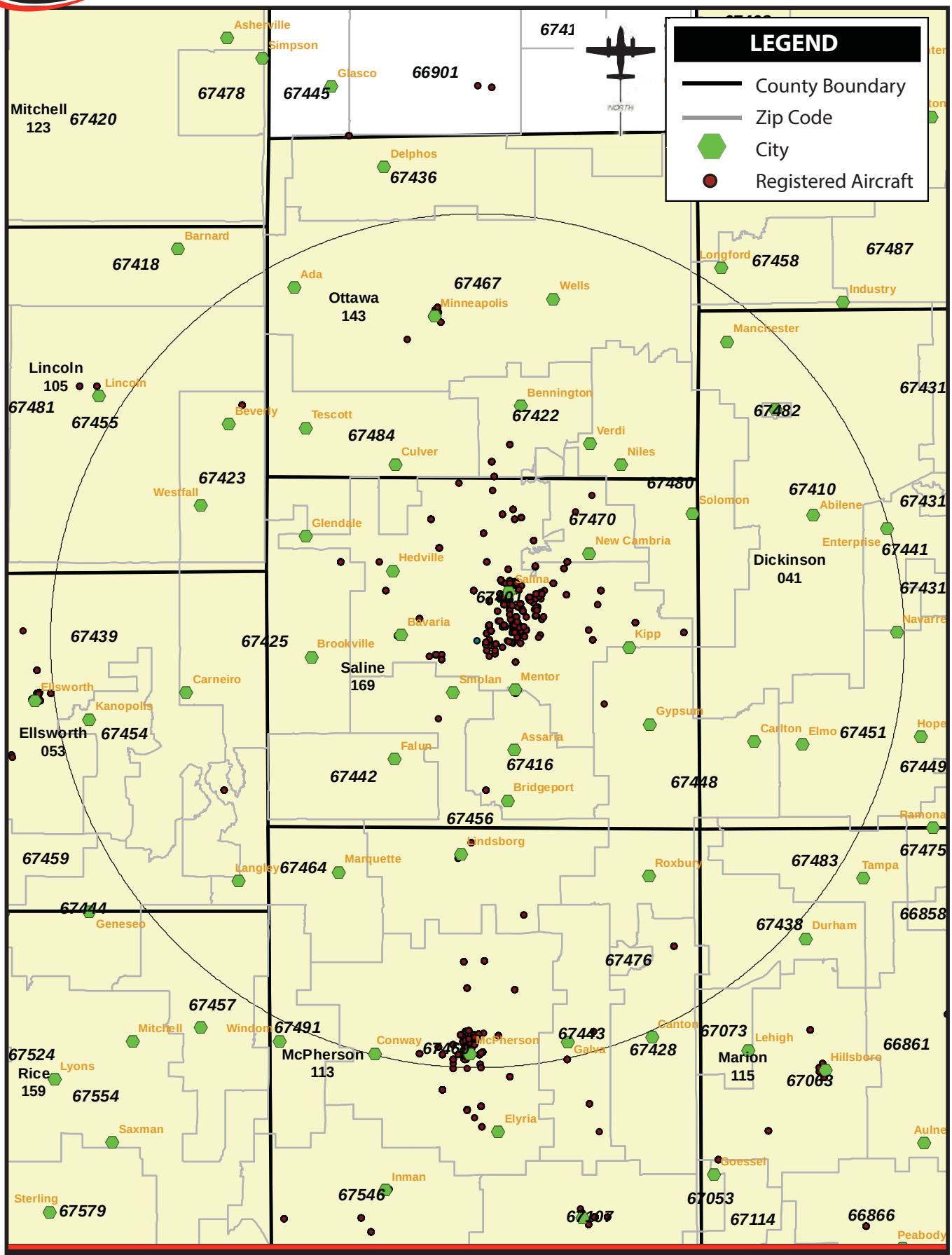



**Exhibit 2C**
**Historical Registered Aircraft in Region**

will emerge. The selected forecast may be one of the individual projections or a combination of several projections based on local conditions. The selected forecast will almost always fall within the planning envelope. Some combination of the following forecasting techniques is utilized to develop the planning envelope for each demand indicator.

***Trend line projections*** are probably the simplest and most familiar of the forecasting techniques. By fitting growth curves to historical demand data, then extending them into the future, a basic trend line projection is produced. A basic assumption of this technique is that outside factors will continue to affect aviation demand in much the same manner as in the past. As broad as this assumption may be, the trend line projection does serve as a reliable benchmark for comparing other projections.

***Correlation analysis*** provides a measure of the direct relationship between two separate sets of historic data. Should there be a reasonable correlation between the data, further evaluation using regression analysis may be employed.

***Regression analysis*** measures the statistical relationship between dependent and independent variables, yielding a "correlation coefficient." The correlation coefficient (Pearson's "r") measures associations between the changes in a dependent variable and independent variable(s). If the r-squared ($r^2$) value (coefficient determination) is greater than 0.90, it indicates good predictive reliability. A value below 0.90 may be used with the understanding that the predictive reliability is lower.

***Market share analysis*** involves a historical review of aviation activity as a percentage, or share, of a larger regional, state, or national aviation market. A historical market share trend is determined providing an expected market share for the future. These shares are then multiplied by the forecasts of the larger geographical area to produce a market share projection. This method has the same limitations as trend line projections, but can provide a useful check on the validity of other forecasting techniques.

It is important to note that one should not assume a high level of confidence in forecasts that extend beyond five to seven years. Facility and financial planning usually require at least a ten-year view, since it often takes more than five years to complete a major facility development program. However, it is important to use forecasts which do not overestimate revenue-generating capabilities or understate demand for facilities needed to meet public (user) needs.

A wide range of factors is known to influence the aviation industry and can have significant impacts on the extent and nature of air service provided in both the local and national markets. Technological advances in aviation have historically altered, and will continue to change, the growth rates in aviation demand over time. The most obvious example is the impact of jet aircraft on the aviation industry, which resulted in a growth rate that far exceeded expectations. As discussed earlier in the chapter, the burgeoning unmanned aircraft system (UAS) industry is another example. Such changes are difficult, if not impossible, to predict, and there is simply no mathematical way to estimate their impacts.

Using a broad spectrum of local, regional, and national socioeconomic and aviation information and analyzing the most cur-

rent aviation trends, forecasts are presented for the following demand indicators:

- COMMERCIAL SERVICE
  - Annual Enplaned Passengers
  - Operations and Fleet Mix
  - Peak Activity Levels

- GENERAL AVIATION
  - Based Aircraft
  - Based Aircraft Fleet Mix
  - Local and Itinerant Operations
  - Peak Activity Levels

- AIR TAXI AND MILITARY
  - Local and Itinerant Operations

## *COMMERCIAL SERVICE FORECASTS*

To determine commercial service potential at Salina Regional Airport and the facilities necessary to properly accommodate present and future airline activity, two basic elements must be forecast: annual enplaned passengers and annual airline operations. Annual enplaned passengers serve as the most basic indicator of demand for commercial passenger service activity. From a forecast of annual enplanements, operations and other activity segments can be projected.

The term "enplanement" refers to a passenger boarding an airline flight. Enplaning passengers are then described in terms of either "originating" or "connecting/transferring." Originating passengers depart a specific airport for a destination or hub airport to connect/transfer to another flight. Connecting/transferring passengers are those who have departed from another location and are using the airport as an intermediate stop. These passengers may disembark their originating flight to wait in the terminal for their next flight or could simply remain on the aircraft at an intermediary stop as a "through" passenger. Salina Regional Airport and airports similar to it tend to have mostly originating passengers, while larger hubs like those in Atlanta, Chicago, and Dallas could have a majority of passengers which are connecting/transferring.

### AIR SERVICE

SeaPort Airlines provides non-stop service to Kanas City International Airport utilizing the 9-seat Pilatus PC-12 aircraft. Before this time, Air Midwest then Great Lakes Airlines provided service through the use of a single engine turboprop Beech 1900D aircraft, capable of carrying up to 19 passengers.

SeaPort Airlines provides three daily departures and arrivals except on Saturdays, in which no service is offered. Based on this schedule, there are 18 scheduled weekly departures and 18 scheduled weekly arrivals between Salina Regional Airport and MCI. **Table 2B** presents the airline schedule as of July 2011.

**TABLE 2B**
**SeaPort Airline Schedule**
**Salina Regional Airport**

| Departures to Kansas City International Airport | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Time** | **Mon.** | **Tue.** | **Wed.** | **Thurs.** | **Fri.** | **Sat.** | **Sun.** |
| 6:00 AM | Y | Y | Y | Y | Y | N | Y |
| 11:25 AM | Y | Y | Y | Y | Y | N | Y |
| 3:40 PM | Y | Y | Y | Y | Y | N | Y |
| **Arrivals from Kansas City International Airport** | | | | | | | |
| 11:10 AM | Y | Y | Y | Y | Y | N | Y |
| 3:25PM | Y | Y | Y | Y | Y | N | Y |
| 8:30 PM | Y | Y | Y | Y | Y | N | Y |

Scheduled Departures per Week - 18
Scheduled Departures per Year - 936
Total Scheduled Operations per Year - 1,872

Source: SeaPort Airlines Consolidated Flight Schedule (November 2012)

## HISTORICAL COMMERCIAL PASSENGER ACTIVITY

Historical commercial passenger service at SLN was outlined in the previous chapter with a good summary depicted on Exhibit 1B. Immediately post airline deregulation, SLN was served by Frontier Airlines. In 1980, SLN registered just under 30,000 enplanements. Enplanement levels then dropped for the next four years, falling to 7,241 in 1983. Since that time, several different airlines have provided service and passenger enplanements have fluctuated between a high of 13,638 in 1999 and a low of 2,029 in 2006. Enplanement levels have not exceeded 5,000 since 2001.

Analysis of historical enplanements should not minimize the impacts of events which have occurred since 2000. The most significant was the terrorist attacks using commercial airline jets on September 11, 2001 (9/11). The events of 9/11 had a significant negative impact on all commercial service airports across the country.

Other factors may have contributed to decreasing enplanement levels at Salina Regional Airport. Between 2001 and 2010, the United States experienced two economic recessions. The first recession lasted eight months during 2001. This recession was relatively minor, especially in light of the one to follow. The second recession occurred between the first quarter of 2008 and the second quarter of 2009. While the recession is officially over, its impacts are still felt with a weak housing market and poor economic growth nationally. Recessions typically have negative impacts on the aviation industry.

Finally, airline service has had several changes since 2001. In January 2002, Mesa Airlines discontinued service to MCI. Between 2003 and 2008 Air Midwest was awarded the EAS contract and coupled SLN with Manhattan for service to MCI. The Air Midwest service included three daily flights at SLN with stops in Manhattan, Kansas; however, MHK passengers were allowed a greater share of the 19 available seats. As a result, enplanements at SLN during the period remained low.

The only spike in enplanements occurred in 2008. Great Lakes Airlines was awarded the EAS contract and offered four daily fights, with two to MCI and two to DEN. Enplanements for 2008 rose to a period high of 4,654; however, that service was discontinued only one year later. SeaPort Airlines has served the airport since 2010, but with limited passenger seating availability.

**Exhibit 2D** presents annual enplanements by month between 2002 and 2012. It should be noted that at the time of preparing this report, 2012 enplanement data was only available through October. **Exhibit 2E** presents the 12-month moving enplanement total for the same period. Both exhibits detail the relatively flat growth in enplanements over the period with the exception of 2008.

## ENPLANEMENT FORECASTS

As discussed in this chapter's introduction, the first step involved in updating an airport's forecasts include reviewing previous forecasts in comparison to actual activity to determine what changes, if any, may be necessary. After that comes the consideration of the effects of any potential new factors that could impact the forecasts, such as changes in the socioeconomic climate or the effects of changes in air carrier services.

### Previous Enplanement Forecasts

Existing forecasts were reviewed to include projections from the FAA TAF published in 2012 and the *Kansas Aviation System Plan Update 2008* (KASP) published in 2008. The FAA TAF uses fiscal year 2010 as its base year for enplanement forecasts for the airport. The KASP utilized a base year of 2007 and simply used the FAA TAF projection available at the time. The actual 2012 enplanement records for Salina Regional Airport were provided by airport administration. **Table 2C** presents the enplanement forecasts and actual enplanements records at Salina Regional Airport.

**TABLE 2C**
**Previous Enplanement Forecasts**
**Salina Regional Airport**

| | 2000 | 2005 | 2012 | 2017 | 2022 | 2032 |
|---|---|---|---|---|---|---|
| Actual Enplanements | 10,270 | 2,805 | 2,723 | | | |
| FAA TAF 2012 | | | 2,364 | 2,440 | 2,509 | 2,630 |
| KASP 2008 | | | 4,615 | 5,161 | 5,771* | 7,215** |

TAF - *Terminal Area Forecast*
KASP - *Kansas Aviation System Plan*
*Interpolated
**Extrapolated

### Regression Enplanement Forecasts

A time-series extrapolation and regression analysis using multiple variables, including aviation and socioeconomic factors, were conducted. It is optimal to have an "$r^2$" value near or above 0.90, which would represent a very strong correlation. The results of the regression analyses did not provide values near the 0.90 indicator. This is not surprising as historical enplanements have fluctuated

Salina Regional
SLN Airport

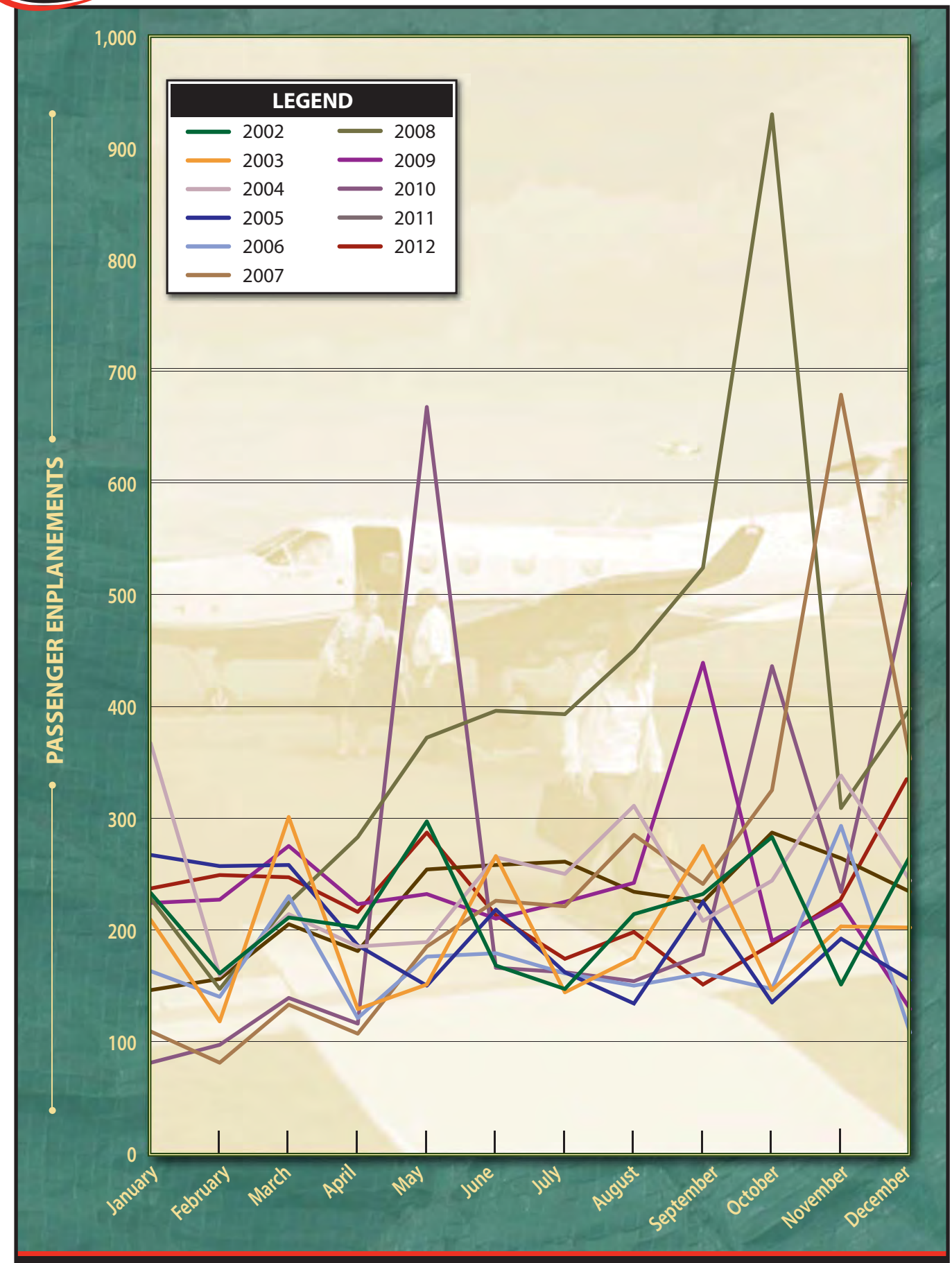



**Exhibit 2D**
**Monthly Enplanement History 2002-2012**

Salina Regional
SLN Airport

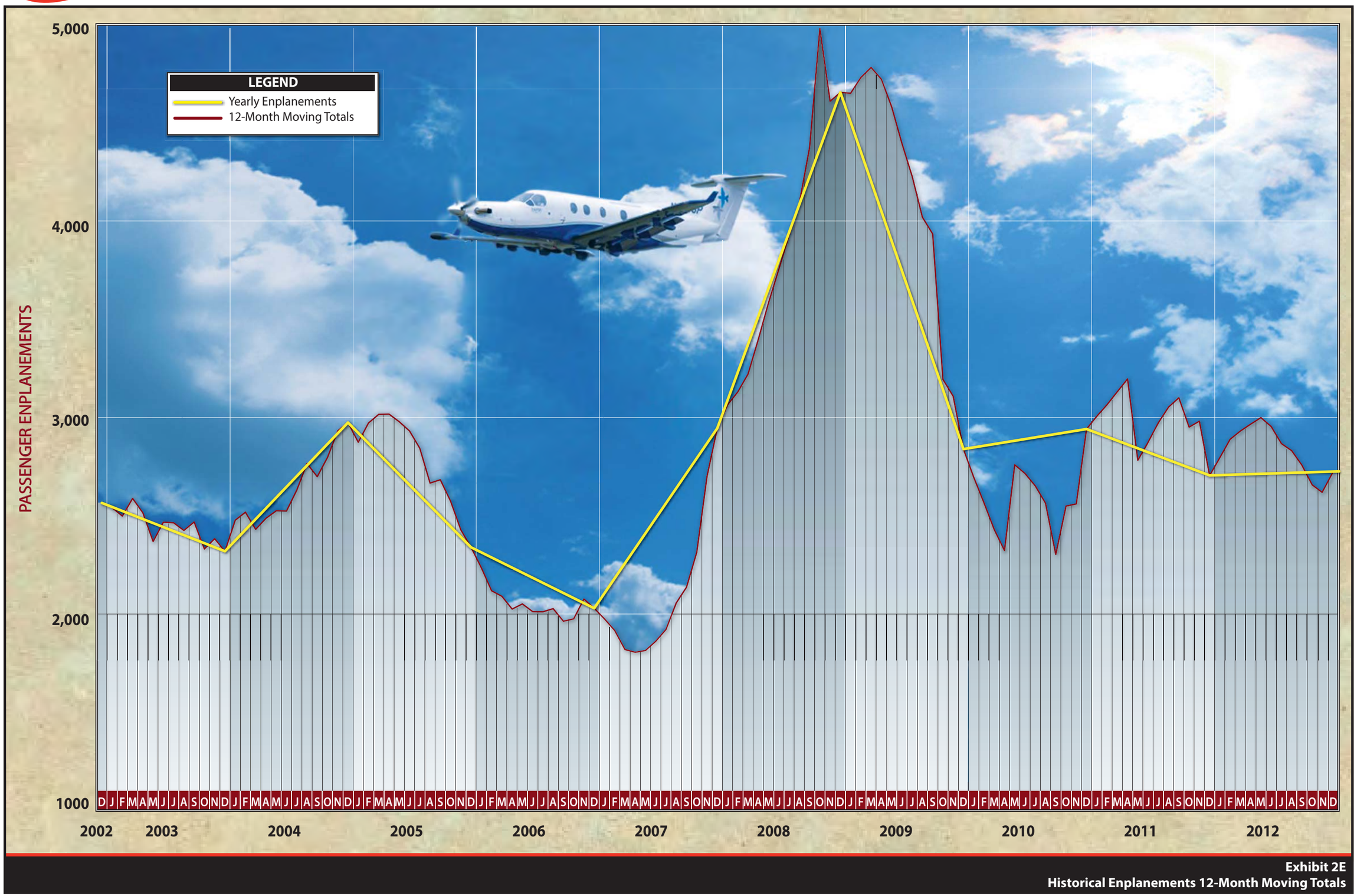



**Exhibit 2E**
**Historical Enplanements 12-Month Moving Totals**

while comparative variables have followed relatively steady growth rates. As a result, the regression trends will no longer be considered in this analysis.

## Travel Propensity Factor

There are a variety of local factors that affect the potential for passengers within an area. A key statistic to consider is the relationship of the airport's enplanements with the populace it serves. The ratio of enplanements to population is termed the travel propensity factor (TPF). The TPF is predominantly impacted by the proximity of an airport to other regional airports with higher levels of service or "hub" airports. Regional airports with higher TPF ratios tend to be located farther from hub airports in relatively isolated areas. These airports generally have a service area that extends into adjacent, well-populated regions or have some type of air service advantage that attracts more of those passengers that might otherwise choose to drive to a more distant hub airport.

For comparison purposes, 13 airports serving comparable markets with relatively similar characteristics to Salina Regional Airport were analyzed. This analysis is presented in **Table 2D**. Each of these markets is served by an airport with scheduled commercial service, but is somewhat regionalized. Most of the airports are located within a manageable driving distance to a larger hub airport, while some are located farther distances from a major hub airport.

**TABLE 2D**
**Travel Propensity Factor Comparisons**

| | 2005 | | | 2010 | | |
|---|---|---|---|---|---|---|
| **Comparable Markets** | **Enplanements** | **County Population** | **TPF** | **Enplanements** | **County Population** | **TPF** |
| Aberdeen, SD | 28,531 | 34,706 | 0.822 | 20,089 | 40,602 | 0.495 |
| Fort Dodge, IA | 8,046 | 39,003 | 0.206 | 7,716 | 38,013 | 0.203 |
| Mason City, IA | 12,612 | 54,356 | 0.232 | 13,852 | 51,749 | 0.268 |
| Garden City, KS | 9,338 | 38,988 | 0.24 | 10,155 | 36,776 | 0.276 |
| **Manhattan, KS** | **10,397** | **62,826** | **0.165** | **39,246** | **71,115** | **0.552** |
| **Grand Island, NE** | **6,679** | **55,104** | **0.121** | **36,295** | **58,607** | **0.619** |
| Kearney, NE | 10,463 | 49,141 | 0.213 | 9,530 | 52,591 | 0.181 |
| Carlsbad, NM | 4,240 | 51,437 | 0.082 | 2,606 | 53,829 | 0.048 |
| Clovis, NM | 2,085 | 45,846 | 0.045 | 2,164 | 48,376 | 0.045 |
| **Roswell, NM** | **9,198** | **61,860** | **0.149** | **38,741** | **65,646** | **0.59** |
| Laramie, WY | 8,524 | 30,890 | 0.276 | 8,876 | 36,299 | 0.245 |
| Riverton, WY | 12,149 | 36,491 | 0.333 | 14,329 | 40,123 | 0.357 |
| Sheridan, WY | 13,568 | 27,389 | 0.495 | 14,130 | 29,116 | 0.485 |
| | | | | | | |
| Salina, KS (SLN) | 2,805 | 54,361 | 0.052 | 2,941 | 56,011 | 0.053 |

Source: Enplanements from FAA; Population from U.S. Census Bureau

In 2005, the 13 selected comparable markets had an average population of 45,234 and the airports registered an average TPF of 0.260. By 2010, the average population rose to 47,911 and the TPF for these markets had increased to 0.336. Of the markets presented, three (highlighted in bold) experienced a significant increase in TPF, including Grand Island, NE, Manhattan, KS, and Roswell, NM.

Further analyses of these markets indicate a similarity occurred between 2005 and 2010. During this time, each of the three markets had a marked change in airline service to include the introduction of regional jet service. Previously, the markets were served by smaller 19-seat to 34-seat turboprop commercial aircraft. For Grand Island, Allegiant Airlines also moved its operations from Lincoln, Nebraska and began offering service to Phoenix and Las Vegas with MD-88 aircraft.

Salina Regional Airport has experienced a relatively flat TPF growth over the last ten years. In fact, the TPF for SLN is near the bottom of all markets analyzed in the table. SLN would have had to post 18,709 enplanements in 2010 to achieve the average 0.336 TPF of the markets examined. Unfortunately, airline service offered at SLN could not achieve that level with only three daily departures, six days per week using 9-seat aircraft. The maximum enplanement level possible at SLN under those service levels would be 8,254. Historical passenger levels at SLN indicate that the airport could achieve higher TPF if higher levels of service were provided. In 2000, for example, the Saline County population was 53,659 and airport enplanements reached 10,270, which yielded a TPF of 0.191.

There are several regional markets which illustrate the sensitivity of passenger enplanements. Manhattan, Kansas and Grand Island, Nebraska are communities not too unlike Salina. Both have slightly higher resident populations, however, both are also relatively regionalized. The primary causation for higher enplanements at these airports was an increased level of service by the airlines. It does not come without a cost, however. Most regional communities that desire such service are required to help defer the airline's operational costs in some form or fashion. In some cases, the airline will request lower fee structures such as discounts on rents or landing fees. For most regional airports, however, an annual subsidy from the airport sponsor is required.

Three enplanement forecasts, developed utilizing the TPF, are shown in **Table 2E**. The first forecast considers the airport maintaining a constant share of the estimated 2012 TPF (0.047). This forecast results in a relatively flat growth of enplanements for the period, ending with 2,862 in 2032.

The second forecast considers a moderately aggressive increasing share projection where the TPF returns to levels achieved previously. This projection assumes a long term economic growth trend without additional significant economic downturns. This trend would not require a change in airline service; however, it would require more passengers using SeaPort Airlines than currently are. This projection results in 5,964 enplanements by 2032.

The third projection is considered an aggressive increasing share projection where the TPF returns to the level achieved in 2000. This projection could not be realized without a modification to airline service levels. Such changes could include SeaPort Airlines adding a fourth flight or another regional carrier with larger aircraft seating capacity being awarded the EAS contract. As presented in **Table 2E**, the increasing share TPF forecast yields 11,391 enplanements by 2032.

**TABLE 2E**
**Enplanement Projection Based on Travel Propensity Factor**
**Salina Regional Airport**

| Year | Enplanements | Saline County Population | TPF |
|---|---|---|---|
| 1990 | 5,707 | 49,413 | 0.115 |
| 2000 | 10,270 | 53,659 | 0.191 |
| 2005 | 2,805 | 54,361 | 0.052 |
| 2010 | 2,941 | 55,733 | 0.053 |
| 2012 | 2,723 | 56,011 | 0.048 |
| **Constant Share TPF Projection** | | | |
| 2017 | 2,729 | 56,853 | 0.048 |
| 2022 | 2,774 | 57,783 | 0.048 |
| 2032 | 2,862 | 59,639 | 0.048 |
| **Moderate Increasing Share TPF Projection** | | | |
| 2017 | 3,127 | 56,853 | 0.055 |
| 2022 | 4,334 | 57,783 | 0.075 |
| 2032 | 5,964 | 59,639 | 0.100 |
| **Aggressive Increasing Share TPF Projection** | | | |
| 2017 | 3,411 | 56,853 | 0.060 |
| 2022 | 5,778 | 57,783 | 0.100 |
| 2032 | 11,391 | 59,639 | 0.191 |

Source: Enplanements from FAA; Population from U.S. Census Bureau and Woods & Poole (CEDDS); Coffman Associates analysis

### Market Share of U.S. Regional Enplanements

The next forecasting method employed was consideration of the airport's market share of U.S. regional airline enplanements. National forecasts of U.S. regional enplanements are compiled each year by the FAA and consider the state of the economy, fuel prices, and prior year developments. According to the most recent publication, FAA *Aerospace Forecasts – Fiscal Years 2012-2032*, regional passenger enplanements are forecast to increase at an average annual rate of 2.5 percent over the 20-year forecast period.

Two enplanement forecasts have been developed as a market share of U.S. domestic regional airline enplanement forecasts, as shown in **Table 2F**. The first considers the airport maintaining a constant market share of 0.0017 percent. This projection would mirror projected growth for the U.S. regional airlines and yields 4,077 enplanements by the end of the planning period. A second forecast projects Salina Regional Airport gaining market share through the planning period as the existing level of service takes hold and captures a higher percentage of the flying public in the region. This projection yields 11,990 enplanements by 2032.

**TABLE 2F**
**Market Share of Regional Enplanements**
**Salina Regional Airport**

| Year | Enplanements | U.S. Regional Enplanements | Market Share of U.S. Regional Enplanements |
|---|---|---|---|
| 2000 | 10,270 | 79,700,000 | 0.0129% |
| 2001 | 6,407 | 80,400,000 | 0.0080% |
| 2002 | 2,565 | 88,600,000 | 0.0029% |
| 2003 | 2,319 | 105,000,000 | 0.0022% |
| 2004 | 2,974 | 125,000,000 | 0.0024% |
| 2005 | 2,805 | 146,400,000 | 0.0019% |
| 2006 | 2,029 | 152,200,000 | 0.0013% |
| 2007 | 2,495 | 156,200,000 | 0.0016% |
| 2008 | 4,654 | 159,100,000 | 0.0029% |
| 2009 | 2,839 | 154,000,000 | 0.0018% |
| 2010 | 2,941 | 161,600,000 | 0.0018% |
| 2011 | 2,705 | 161,300,000 | 0.0017% |
| 2012 | 2,723 | 162,400,000 | 0.0016% |
| **Constant Market Share** | | | |
| 2017 | 3,162 | 186,000,000 | 0.0017% |
| 2022 | 3,587 | 211,000,000 | 0.0017% |
| 2032 | 4,077 | 239,800,000 | 0.0017% |
| **Increasing Market Share** | | | |
| 2017 | 3,348 | 186,000,000 | 0.0018% |
| 2022 | 6,330 | 211,000,000 | 0.0030% |
| 2032 | 11,990 | 239,800,000 | 0.0050% |

Source: Airport enplanements from SAA; U.S. Regional Enplanements from FAA *Aerospace Forecasts – Fiscal Years 2012-2032*; Coffman Associates analysis

## Airline Service Scenarios

Most traditional forecasting methods for projecting enplanements are singularly insufficient for projecting future enplanements at SLN. As previously mentioned, there are many factors which will influence passenger boardings at an airport. For SLN, socioeconomic factors do not appear to play a significant role as Saline County, supported by the City of Salina, has relatively strong socioeconomic conditions. It appears that passenger leakage is the primary deterrent to enplanement growth; however, airline service certainly plays a key role as well.

Discussions with airport staff indicate that SeaPort Airlines provides very good, reliable service. Customer testimonials for markets served by SeaPort Airlines also suggest the same. SeaPort Airlines offers a unique service which does not require long waits at airports or increased security measures. Operating as a Federal Aviation Regulation (F.A.R.) Part 135 carrier, there is no Transportation Security Agency (TSA) security station necessary. As a result, passengers can arrive at the airport closer to flight time and have little hassle when arriving at the private FBO in Kansas City. Moreover, SeaPort Airline pricing structures are

very reasonable, especially for passengers that can buy advance tickets.

The only negative attribute of the service is the limited seating available. As previously mentioned, SeaPort conducts its operations at SLN with a 9-seat PC-12 single-engine, turboprop aircraft. The aircraft has a very good safety record, yet many travelers do not desire to fly on small commercial aircraft. The same holds for even larger twin-engine turboprop aircraft such as the Beech 1900 or Saab 340. As a result, a portion of SLN service area travelers will not use SLN, opting instead to drive to their destination or another regional airport such as MHK, ICT, or MCI. This trend is very common at most regionalized commercial service airports served by small commercial aircraft. In most cases, these airports will lose between 30 and 70 percent of the market to other transportation modes.

As a result, this analysis must factor the impact of airline service on enplanement levels at SLN. The current service provided by SeaPort Airlines is limited to allow for a maximum of 8,254 enplanements annually. The maximum figure does not account for seats lost to flight cancellations or any weight and balance issues. Moreover, this figure assumes that all seats will be sold; however, as described above, full flights are rare for small commercial airline aircraft. Regional airlines can expect a board loading factor (BLF) of 60-70 percent. For most airlines, this figure will allow them to be profitable. For airlines under EAS contracts, a BLF of 60-70 percent is sufficient. **Table 2G** presents various enplanement scenarios for varying aircraft and schedule options. The intent of this exercise is to highlight the magnitude of change resulting from differing aircraft options.

**TABLE 2G**
**Airline Service Scenarios**

| | Weekly | | Annual | | | |
|---|---|---|---|---|---|---|
| **Aircraft Type** | **Departures** | **Seats** | **Departures** | **Seats** | **BLF** | **Enplanements** |
| ***PC-12*** | | | | | | |
| Current Schedule | 18 | 162 | 936 | 8,424 | 0.6 | 5,054 |
| Add 4th Flight | 24 | 216 | 1,248 | 11,232 | 0.6 | 6,739 |
| ***Beech 1900D*** | | | | | | |
| 3 Daily Flights | 19 | 361 | 988 | 18,772 | 0.6 | 11,263 |
| 4 Daily Flights | 25 | 475 | 1,300 | 24,700 | 0.6 | 14,820 |
| ***ERJ-145*** | | | | | | |
| 2 Daily Flights | 13 | 650 | 676 | 33,800 | 0.6 | 20,280 |
| 3 Daily Flights | 19 | 950 | 988 | 49,400 | 0.6 | 29,640 |
| 4 Daily Flights | 25 | 1,250 | 1,300 | 65,000 | 0.6 | 39,000 |
| ***MD-80 Series*** | | | | | | |
| 2 Weekly Flights | 2 | 260 | 104 | 13,520 | 0.9 | 12,168 |
| 4 Weekly Flights | 4 | 520 | 208 | 27,040 | 0.9 | 24,336 |

* Beech 1900D and ERJ-145 considers one Saturday departure typical to the industry

Information in **Table 2G** presents airline service levels at SLN as based on service attained at other comparable markets. It should be noted that the information does not suggest that these options can or will occur, but simply show the potential en-

planement levels for differing levels of airline service at SLN. Moreover, several scenarios would not likely happen without changes in other markets. For example, SLN would not likely receive ERJ-145 service unless that service was discontinued and/or shifted from Manhattan. Similarly, the MD-80 series service is based upon the Allegiant Airlines model at ICT. The scenario presented in the table would occur only if Allegiant chooses to shift from ICT to SLN as it did from Lincoln to Grand Island. Finally, the ERJ and MD-80 service would likely require that the airport provide the airline direct subsidy or substantial rate/fee reductions.

## Enplanement Forecast Summary

Saline County and the City of Salina can support higher airline service levels as evidenced by previous enplanement levels. Unfortunately, the airline industry has changed. While the potential to support higher service levels exists, the opportunity is not readily available. Realistically, ERJ or MD-80 service levels would likely require foregoing EAS support, and instead would require substantial financial commitments from the airport. Such an investment would be risky as the airport would still compete with even higher service levels and lower fare structures at ICT and MCI.

As outlined in the opening to this chapter, the Master Plan forecast must be reasonable, based on current conditions at the airport, and provide adequate justification for proposed planning/development. Long term planning could include the possibility for service by regional jets or even something similar to Allegiant Airline service. Realistically, however, available data based on recent trends indicates that the airport is losing market share due to competing transportation modes. While the trends could change, there is not sufficient evidence to support planning for significant changes in airline service levels at SLN. As a result, the remainder of this plan will consider the likely scenario that SLN will continue to be served by an EAS supported air carrier with relatively limited service. It should be noted that SeaPort Airlines was awarded the four year EAS contract and as such will be serving SLN through 2016 without significant changes. **Table 2H** and **Exhibit 2F** presents a summary of enplanement forecasts developed earlier.

**TABLE 2H**
**Enplanement Projection Summary**
**Salina Regional Airport**

| 2012 Enplanements – 2,723 | 2017 | 2022 | 2032 | AAGR |
|---|---|---|---|---|
| **Travel Propensity Factor (TPF) Projections** | | | | |
| Constant Share | 2,729 | 2,774 | 2,862 | 0.26% |
| Moderate Increasing Share | 3,127 | 4,334 | 5,964 | 4.12% |
| Aggressive Increasing Share | 3,411 | 5,778 | 11,391 | 7.54% |
| **Market Share of U.S. Regional Enplanements** | | | | |
| Constant Market Share | 3,162 | 3,587 | 4,077 | 2.16% |
| Increasing Market Share | 3,348 | 6,330 | 11,990 | 7.82% |
| **Other Forecasts** | | | | |
| FAA TAF (2012) | 2,440 | 2,509 | 2,630 | -0.06% |
| KASP (2008) | 5,161 | 5,771 | 7,215 | 5.12% |
| ***Selected Planning Forecast*** | ***3,100*** | ***4,300*** | ***6,000*** | ***4.15%*** |

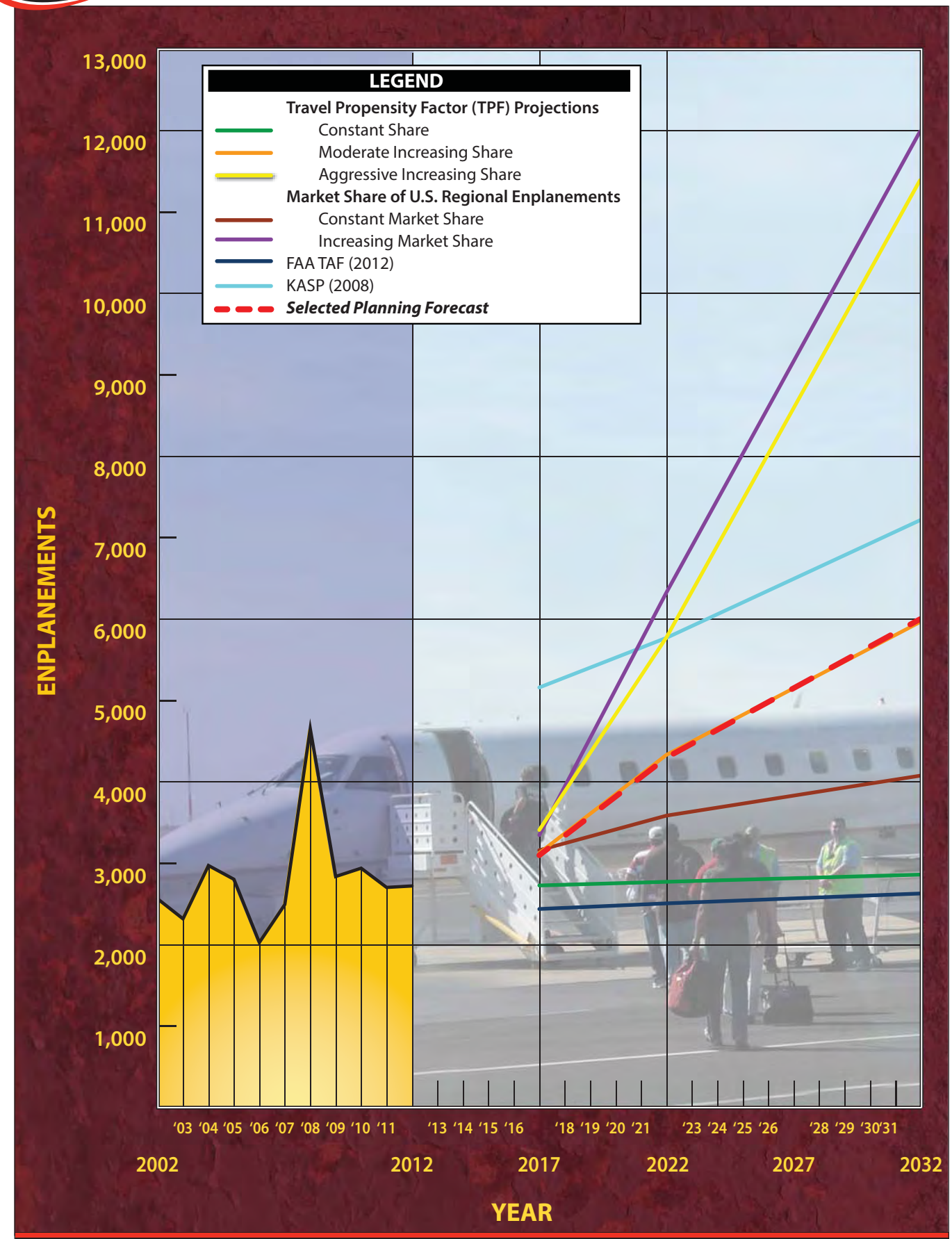



**Exhibit 2F**
**Enplanement Forecast Projections**

The FAA will review these forecasts for approval purposes. Forecasts prepared for a master planning effort should not differ more than 10 percent for the first five years and 15 percent for years 6-10 unless specific justification can be presented.

The TAF 2032 enplanement projection is actually below the estimated 2012 level. It is important to note that the TAF base year 2012 estimate is 2,364. This figure is lower than actual SLN enplanements since 2006. The TAF projection followed an AAGR of 0.53 percent. Extending the 2012 enplanement level (2,723) at an AAGR of 0.53 percent would yield 3,026 enplanements by 2032. Thus, the master plan should remain within reasonable proximity to this figure.

The aggressive increasing market share TPF and increasing share of U.S. domestic enplanement projections establish the high end of the planning envelope. These projections could not be realized unless air service levels were changed and/or increased significantly. It is unlikely that simply adding another SeaPort flight per day would yield such results.

The TAF and constant share TPF projections demark the low end of the enplanement planning envelope. While these forecasts are possible, the airport actually experienced more enplanements during nearly half of the years during the 2000s. As a result, they will likely be exceeded at some point well before 2032.

The most realistic and reasonable forecast appears to be the moderately aggressive TPF projection. This projection considers slightly fewer than 6,000 enplanements by 2032. As noted, the airport has reached this level in the past, as recently as 2001; however, the current air service levels would require that the aircraft BLF exceed 70 percent on all flights. Another option would be a lower BLF as long as a fourth daily departure was added. This could include SeaPort Airlines adding the fourth flight to MCI or to another city in its route structure such as Memphis, TN or even Dallas Love Field. The potential even exists for SeaPort to add flights to DEN. In order to add new flights to new destinations, however, SeaPort would need to secure EAS contractual rights to those cities.

The moderate increasing share TPF projection serves as the basis for the selected enplanement forecast of 3,100 by 2017, 4,300 by 2022, and 6,000 by 2032. This forecast exceeds the parameters set forth by the TAF; however, these projections are reasonable and supported by available data.

This selected forecast relies on continued improvements to the national and regional economies. Continued strong socioeconomic and demographic conditions for the region indicate that the local community can support air service. In addition, airline service improvements would be necessary to produce enplanements as projected. While it is uncertain if the airport can attract another airline, improvements to existing airline service will create higher demand. As such, this projection will also require additional daily flights.

## AIRLINE FLEET MIX AND OPERATIONS

The type of aircraft in the commercial airline fleet serving the airport is an important component of airport planning. Not only is the commercial airline fleet mix serving the airport helpful in determining the number of commercial airline

operations at the airport, but it is also helpful in defining many of the key parameters used in airport planning; namely, the critical aircraft serving the airport (used for pavement design, ramp apron geometry, and terminal complex layout), and the maximum stage length capabilities (which affects runway length evaluations).

A projection of the fleet mix for Salina Regional Airport is based on current and historical airline operations. As previously mentioned, SeaPort Airlines currently utilizes 9-seat Pilatus PC-12 single engine turboprop aircraft for its commercial service operations at the airport.

The boarding load factor (BLF) is defined as the ratio of passengers boarding an aircraft and the seating capacity of the aircraft. The yearly BLF is presented in **Table 2J**. For 2012, the average number of departure seats is nine. Utilizing the commercial service activity assumptions previously discussed for 2012, the BLF is 33.21 percent for the year. It is projected that the Pilatus PC-12 will continue to provide commercial airline service to the airport given the favorable route and airfare structures. As a result, the number of annual departures and average seats per departure will remain relatively constant through the short term planning period.

**TABLE 2J**
**Scheduled Airline Fleet Mix and Operations Forecast**
**Salina Regional Airport**

| Fleet Mix | Current | Forecast | | |
|---|---|---|---|---|
| Seating Capacity | 2012 | 2017 | 2022 | 2032 |
| 60-79 | 0.00% | 0.00% | 0.00% | 0.00% |
| 40-59 | 0% | 0% | 0% | 0% |
| 20-40 | 0% | 0% | 0% | 0% |
| 9-19 | 100.00% | 100.00% | 100.00% | 100.00% |
| Total | 100.00% | 100.00% | 100.00% | 100.00% |
| Average Seats per Departures | 9 | 9 | 9 | 9 |
| Boarding Load Factor | 33.21% | 40.00% | 50.00% | 70.00% |
| Enplanements per Departure | 3.0 | 3.6 | 4.5 | 6.3 |
| Annual Enplanements | 2,723 | 3,100 | 4,300 | 6,000 |
| Annual Departures | 890 | 860 | 956 | 952 |
| Annual Operations | 1,780 | 1,720 | 1,912 | 1,904 |

Representative Aircraft:
9-19 - Pilatus PC-12 (9), Beech 1900D (19)
20-40 – Embraer 120, Saab 340
40-59 - Canadair RJ 200, Embraer 145
60-79 - Embraer 170, Canadair 700, Bombardier Q400

When taking into consideration that annual enplanements are projected to increase to approximately 4,300 and 6,000, respectively, during the next ten and 20 years, future BLFs are forecast to increase to approximately 70 percent by 2032. As presented in the table, annual airline operations are forecast to increase from an estimated 1,780 in 2012 to 1,904 in 2032.

## *GENERAL AVIATION FORECASTS*

General aviation encompasses all portions of civil aviation except commercial service and military operations. To determine the types and sizes of facilities that should be planned to accommodate general aviation activity at Salina Regional Airport, certain elements of this activity

must be forecast. These indicators of general aviation demand include based aircraft, aircraft fleet mix, and annual operations.

## BASED AIRCRAFT FORECAST

The number of based aircraft is the most basic indicator of general aviation demand. By first developing a forecast of based aircraft for Salina Regional Airport, other general aviation activities and demand can be projected. The process of developing forecasts of based aircraft begins with an analysis of aircraft ownership in the primary general aviation service area through a review of historical aircraft registrations.

### Service Area Aircraft Ownership

Analysis presented earlier indicates that Saline County is the primary service area for general aviation demand. Aircraft ownership trends for the primary service area typically dictate the based aircraft trends for an airport. As such, analysis of Saline County aircraft registrations was made.

**Table 2K** presents the history of registered aircraft in Saline County from 1993 through 2011. These figures are derived from the FAA aircraft registration database that categorized registered aircraft by county based on the zip code of the registered aircraft. Although this information generally provides a correlation to based aircraft, it is not uncommon for some aircraft to be registered in the county, but based at an airport outside the county.

**TABLE 2K**
**Historical Aircraft Registrations by Type**
**Saline County**

| Year | SEP | MEP | Jet | Turboprop | Helicopter | Other | Total |
|---|---|---|---|---|---|---|---|
| 1993 | 74 | 13 | 1 | 3 | 10 | 4 | 105 |
| 1994 | 87 | 17 | 1 | 4 | 10 | 4 | 123 |
| 1995 | 86 | 13 | 1 | 4 | 9 | 4 | 117 |
| 1996 | 89 | 10 | 2 | 4 | 9 | 5 | 119 |
| 1997 | 88 | 9 | 5 | 3 | 9 | 5 | 119 |
| 1998 | 81 | 7 | 4 | 5 | 8 | 4 | 109 |
| 1999 | 91 | 7 | 5 | 6 | 8 | 4 | 121 |
| 2000 | 108 | 7 | 5 | 3 | 7 | 4 | 134 |
| 2001 | 102 | 9 | 5 | 6 | 7 | 4 | 133 |
| 2002 | 102 | 9 | 5 | 6 | 7 | 4 | 133 |
| 2003 | 101 | 6 | 5 | 10 | 9 | 4 | 135 |
| 2004 | 94 | 10 | 6 | 13 | 8 | 4 | 135 |
| 2005 | 101 | 10 | 6 | 14 | 8 | 5 | 144 |
| 2006 | 111 | 14 | 4 | 3 | 9 | 5 | 146 |
| 2007 | 109 | 14 | 3 | 2 | 9 | 7 | 144 |
| 2008 | 107 | 13 | 4 | 5 | 10 | 8 | 147 |
| 2009 | 113 | 12 | 4 | 5 | 11 | 9 | 154 |
| 2010 | 110 | 14 | 3 | 5 | 13 | 9 | 154 |
| 2011 | 104 | 13 | 2 | 5 | 11 | 9 | 144 |
| 2012 | 103 | 12 | 2 | 5 | 11 | 7 | 140 |

SEP - Single Engine Piston
MEP - Multi-Engine Piston

Source: FAA Aircraft Registration Database

As presented in the table, Saline County registered aircraft between 1993 and 2012 ranged between a low of 105 in 1993 to a high of 154 in 2008 and 2009. The table also includes the types of aircraft registered in Saline County. As is typical for nearly all areas, single engine piston aircraft dominate the total aircraft numbers. In 2012, for example, there were 140 aircraft registered in the county, of which 103 were single engine aircraft. 2012 aircraft registrations also included 12 multi-engine piston aircraft, two jets, five turboprops, 11 helicopters, and seven "other" aircraft. The other category typically includes gliders or ultralights.

Registered aircraft projections are presented in **Table 2L** and are graphically depicted on **Exhibit 2G**. These projections evaluate the potential growth of aircraft demand (registered aircraft) in Saline County over the next 20 years.

**TABLE 2L**
**Registered Aircraft Projections**
**Saline County**

| Year | County Registrations | U.S. Active Aircraft | Market Share | County Population | Aircraft per 1,000 Residents |
|---|---|---|---|---|---|
| 2000 | 134 | 217,533 | 0.0616% | 53,659 | 2.50 |
| 2001 | 133 | 211,446 | 0.0629% | 53,952 | 2.47 |
| 2002 | 133 | 211,244 | 0.0630% | 54,157 | 2.46 |
| 2003 | 135 | 209,606 | 0.0644% | 54,018 | 2.50 |
| 2004 | 135 | 219,319 | 0.0616% | 54,178 | 2.49 |
| 2005 | 144 | 224,257 | 0.0642% | 54,361 | 2.65 |
| 2006 | 146 | 221,942 | 0.0658% | 54,478 | 2.68 |
| 2007 | 144 | 231,606 | 0.0622% | 54,723 | 2.63 |
| 2008 | 147 | 228,664 | 0.0643% | 54,811 | 2.68 |
| 2009 | 154 | 223,876 | 0.0688% | 55,164 | 2.79 |
| 2010 | 154 | 223,370 | 0.0689% | 55,733 | 2.76 |
| 2011 | 144 | 222,250 | 0.0648% | 55,861 | 2.58 |
| 2012 | 140 | 222,690 | 0.0629% | 56,011 | 2.50 |
| **Constant Market Share of U.S. Active Aircraft Projection (AAGR = 0.65%)** | | | | | |
| 2017 | 142 | 225,490 | 0.0629% | 56,843 | 2.50 |
| 2022 | 145 | 231,145 | 0.0629% | 57,783 | 2.52 |
| 2032 | 159 | 253,205 | 0.0629% | 59,369 | 2.68 |
| **Constant Ratio of Aircraft per 1,000 County Residents (AAGR = 0.31%)** | | | | | |
| 2017 | 142 | 225,490 | 0.0630% | 56,843 | 2.50 |
| 2022 | 144 | 231,145 | 0.0625% | 57,783 | 2.50 |
| 2032 | 148 | 253,205 | 0.0586% | 59,369 | 2.50 |
| ***Selected Projection (AAGR = 0.82%)*** | | | | | |
| 2017 | ***145*** | 225,490 | 0.0643% | 56,843 | 2.55 |
| 2022 | ***150*** | 231,145 | 0.0649% | 57,783 | 2.60 |
| 2032 | ***165*** | 253,205 | 0.0652% | 59,369 | 2.78 |

Source: County Aircraft Registrations from FAA Aircraft Registration Database; U.S. Active Aircraft; U.S. Active Aircraft from FAA *Aerospace Forecasts – Fiscal Years 2012-2032*; County Population from Woods & Poole CEDDS; Coffman Associates analysis

The first projection considers simply maintaining the 2012 market share of U.S. active aircraft through the 20-year period. This results in 159 registered aircraft in the county by 2032. The next forecast considers a constant ratio of aircraft owned per 1,000 county residents. This

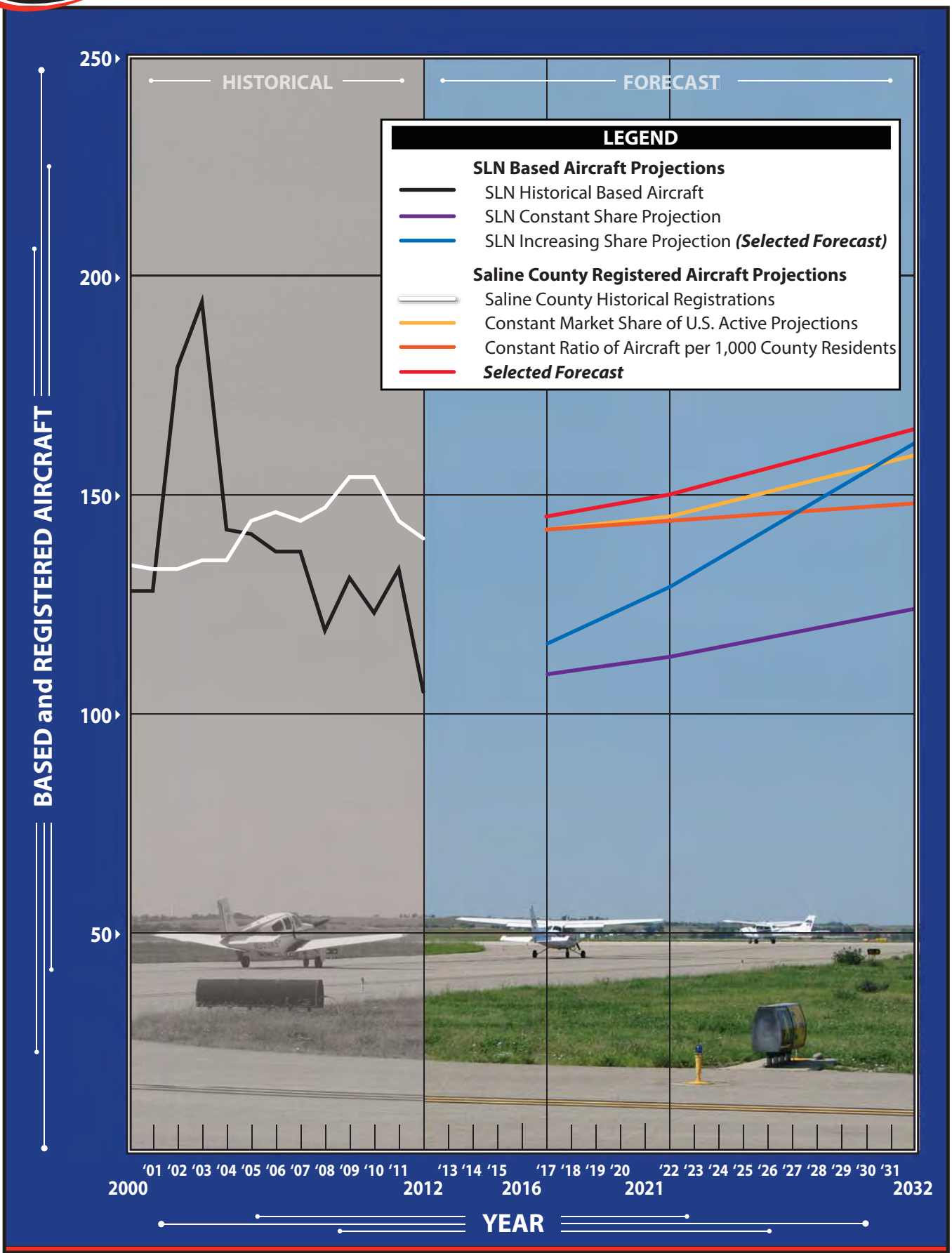



**Exhibit 2G**
**Saline County Registered Aircraft and SLN Based Aircraft Projections**

projection yields 148 aircraft in Saline County by 2032.

It should be noted that time-series extrapolation and regression analysis using several variables, including aviation and socioeconomic factors, were also considered on the data sets. It is optimal to have an "$r^2$" value near or above 0.90, which would represent a very strong correlation. The results of the regression analysis compared to local socioeconomic variables did not provide values near the 0.90 indicator. This can be directly attributed to the varying level of annual aircraft registrations in Saline County over the past several years. A time-series trend line analysis for 1993-2012 was conducted which yielded an $r^2$ value of 0.80. Obviously this output is lower than desired, but is somewhat close. This projection yields 164 registered aircraft for 2017, 175 for 2022, and 197 for 2032.

Considering historical registered aircraft growth for Saline County, the constant share projections in **Table 2L** are very conservative. These projections serve as the low end of the planning envelope, while the time-series projection serves as the high boundary. The selected forecast considers that Saline County registered aircraft regain period highs for U.S. active aircraft market share (0.652%) and aircraft per capita (2.78). The selected forecast tempers growth in the near term, due to current economic stagnation, and then exhibits higher levels of growth in the intermediate and long terms.

## Previous Based Aircraft Forecasts

Existing forecasts for Salina Regional Airport were reviewed to include projections from the FAA TAF published in 2012 and the KASP. The FAA TAF uses fiscal year 2010 as its base year for based aircraft forecasts for the airport. The KASP utilized a base year of 2007. It should be noted that actual 2012 based aircraft records for Salina Regional Airport were provided by airport administration. As presented, the current based aircraft at the airport are much lower than what the TAF indicates. **Table 2M** outlines these existing forecasts.

**TABLE 2M**
**Previous Based Aircraft Forecasts**
**Saline County Airport System**

| | 2000 | 2005 | 2012 | 2017 | 2022 | 2032 |
|---|---|---|---|---|---|---|
| **Salina Regional Airport** | | | | | | |
| Actual Based Aircraft | | | 105 | | | |
| FAA TAF 2012 | 128 | 141 | 132 | 144 | 156 | 186 |
| KASP 2008 | | | 168 | 197 | 234* | 331** |

TAF - Terminal Area Forecast
KASP - Kansas Airport System Plan
*Interpolated
**Extrapolated

## Based Aircraft Forecast

Determining the number of based aircraft at an airport can be a challenging task because the number can change often. For regionalized locations with limited nearby competing airports, however, based aircraft figures are typically more stable,

changing only when new aircraft storage space opens up. Historical based aircraft figures for the airport was derived from the TAF; however, the 2012 base year is reflective of a change submitted to the FAA Form 5010, *Airport Master Record*, by airport administration and not yet updated in the TAF.

As shown in **Table 2N**, Salina Regional Airport's market share of Saline County registered aircraft has ranged between a low of 75 percent in 2012 to a high of 143.7 percent in 2003. Given the airport's location adjacent to the major population and employment hub of Saline County in addition to its long runways and room for growth, a selected forecast has been made that considers an increasing market share of Saline County registered aircraft through the next 20 years, ultimately recapturing a market share similar to those experienced during the mid-2000s. Based aircraft growth generally follows the availability of hangar facilities, especially if those facilities are provided at a competitive lease rate. The selected forecast would most likely be the result of additional hangar development.

**TABLE 2N**
**Based Aircraft Forecast**
**Salina Regional Airport**

| Year | Saline County Registered | SLN Based | Market Share |
|---|---|---|---|
| 2000 | 134 | 128 | 95.52% |
| 2001 | 133 | 128 | 96.24% |
| 2002 | 133 | 179 | 134.59% |
| 2003 | 135 | 194 | 143.70% |
| 2004 | 135 | 142 | 105.19% |
| 2005 | 144 | 141 | 97.92% |
| 2006 | 146 | 137 | 93.84% |
| 2007 | 144 | 137 | 95.14% |
| 2008 | 147 | 119 | 80.95% |
| 2009 | 154 | 131 | 85.06% |
| 2010 | 154 | 123 | 79.87% |
| 2011 | 144 | 133 | 92.36% |
| 2012 | 140 | 105 | 75.00% |
| ***CONSTANT SHARE PROJECTION (AAGR 0.82%)*** | | | |
| 2017 | 145 | 109 | 75.00% |
| 2022 | 150 | 113 | 75.00% |
| 2032 | 165 | 124 | 75.00% |
| ***INCREASING SHARE PROJECTION (AAGR 2.18%) SELECTED FORECAST*** | | | |
| 2017 | 145 | 116 | 80.00% |
| 2022 | 150 | 129 | 86.00% |
| 2032 | 165 | 162 | 98.00% |

**BASED AIRCRAFT FLEET MIX**

The fleet mix of the based aircraft is oftentimes more important to airport planning and design than the total number of aircraft. For example, the presence of one or a few large business jets can impact design standards more than a large number of smaller single engine piston powered aircraft.

The based aircraft fleet mix at SLN, as presented in **Table 2P**, was compared to the existing and forecast U.S. general aviation fleet mix trends as presented in FAA *Aerospace Forecasts - Fiscal Years 2012-2032*. The FAA expects business jets will continue to be the fastest growing general aviation aircraft type in the future.

**TABLE 2P**
**Based Aircraft Fleet Mix**
**Salina Regional Airport**

| | EXISTING | | FORECAST | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Aircraft Type** | **2012** | **%** | **2017** | **%** | **2022** | **%** | **2032** | **%** |
| Single Engine | 81 | 77.14% | 89 | 76.72% | 98 | 75.97% | 120 | 74.07% |
| Multi-Engine | 6 | 5.71% | 6 | 5.17% | 6 | 4.65% | 7 | 4.32% |
| Turboprop | 4 | 3.81% | 5 | 4.31% | 6 | 4.65% | 10 | 6.17% |
| Jet | 2 | 1.91% | 3 | 2.59% | 4 | 3.10% | 8 | 4.94% |
| Helicopter | 10 | 9.52% | 11 | 9.49% | 12 | 9.30% | 13 | 8.03% |
| Other | 2 | 1.91% | 2 | 1.72% | 3 | 2.33% | 4 | 2.47% |
| **Totals** | **105** | **100.0%** | **116** | **100.0%** | **129** | **100.0%** | **162** | **100.0%** |

*Source: Airport Records; Coffman Associates Analysis*

## GENERAL AVIATION OPERATIONS

General aviation (GA) operations are classified by the airport traffic control tower (ATCT) as either local or itinerant. A local operation is a take-off or landing performed by an aircraft that operates within sight of the airport, or which executes simulated approaches or touch-and-go operations at the airport. Itinerant operations are those performed by aircraft with a specific origin or destination away from the airport. Generally, local operations are characterized by training operations. Typically, itinerant operations increase with business and commercial use, since business aircraft are operated on a higher frequency.

### Itinerant Operations

**Table 2Q** depicts general aviation itinerant operations at Salina Regional Airport from 2000 through 2012. General aviation itinerant operations have experienced a declining trend. Over the same period, itinerant general aviation activity nationally has also been in decline. From 2012 through 2032, the FAA forecasts an annual growth rate of 1.04 percent.

Forecasts have been developed for future itinerant general aviation operations at Salina Regional Airport. The first considers the airport maintaining a constant market share of national itinerant general aviation operations which yields 12,818 operations by 2032. The next projection relates itinerant operations to the total number of based aircraft. In 2012, there were 113 itinerant general aviation operations per based aircraft. When maintaining a constant ratio of 113 itinerant operations per based aircraft, a long term total of 18,306 itinerant general aviation operations results. This forecast has an average annual growth rate of 2.21 percent.

The FAA TAF also presents an itinerant operations forecast which is also shown in the table. The TAF forecasts an annual growth rate of 0.13 percent annually. This results in a long term itinerant general aviation operations projection of 12,133.

**TABLE 2Q**
**General Aviation Itinerant Operations Forecast**
**Salina Regional Airport**

| Year | SLN Itinerant GA Operations[1] | U.S. ATCT GA Itinerant Operations[2] | SLN Market Share | SLN Based Aircraft[3] | Itinerant GA Operations per Based Aircraft |
|---|---|---|---|---|---|
| 2000 | 38,544 | 22,844,100 | 0.169% | 128 | 301 |
| 2001 | 39,772 | 21,433,300 | 0.186% | 128 | 311 |
| 2002 | 41,007 | 21,450,500 | 0.191% | 179 | 229 |
| 2003 | 38,103 | 20,231,300 | 0.188% | 194 | 196 |
| 2004 | 35,539 | 20,007,200 | 0.178% | 142 | 250 |
| 2005 | 36,164 | 19,303,200 | 0.187% | 141 | 256 |
| 2006 | 35,218 | 18,707,100 | 0.188% | 137 | 257 |
| 2007 | 33,375 | 18,575,200 | 0.180% | 137 | 244 |
| 2008 | 22,746 | 17,492,700 | 0.130% | 119 | 191 |
| 2009 | 15,846 | 15,571,100 | 0.102% | 131 | 121 |
| 2010 | 13,027 | 14,863,900 | 0.088% | 123 | 106 |
| 2011 | 11,722 | 14,527,900 | 0.081% | 133 | 88 |
| 2012 | 11,814 | 14,235,600 | 0.083% | 105 | 113 |
| **Constant Market Share Projection (AAGR = 1.04%)** | | | | | |
| 2017 | 12,050 | 14,518,000 | 0.083% | 116 | 104 |
| 2022 | 12,294 | 14,812,500 | 0.083% | 129 | 95 |
| 2032 | 12,818 | 15,443,900 | 0.083% | 162 | 79 |
| **Constant Operations Per Based Aircraft Projection (AAGR = 2.21%)** | | | | | |
| 2017 | 13,108 | 14,518,000 | 0.16% | 116 | 113 |
| 2022 | 14,577 | 14,812,500 | 0.18% | 129 | 113 |
| 2032 | 18,306 | 15,443,900 | 0.20% | 162 | 113 |
| **FAA TAF Projections (AAGR = 0.13%)** | | | | | |
| 2017 | 11,255 | 14,518,000 | 0.14% | 116 | 97 |
| 2022 | 11,540 | 14,812,500 | 0.14% | 129 | 89 |
| 2032 | 12,133 | 15,443,900 | 0.14% | 162 | 75 |
| **Planning Forecast (AAGR = 1.53%)** | | | | | |
| 2017 | 12,500 | 14,518,000 | 0.15% | 116 | 108 |
| 2022 | 13,300 | 14,812,500 | 0.15% | 129 | 103 |
| 2032 | 16,000 | 15,443,900 | 0.15% | 162 | 99 |

[1]FAA Air Traffic Activity System (ATADS)
[2]FAA Aerospace Forecasts 2012-2032
[3]FAA Terminal Area Forecast except 2012 from airport records.

The selected forecast lies between the constant market share and constant operations per based aircraft projections. This forecast projects itinerant operation growth at an AAGR of 1.53 percent reaching 16,000 by 2032. **Exhibit 2H** presents both the itinerant and local general aviation operations forecast.

## Local Operations

A similar methodology was utilized to forecast local general aviation operations. **Table 2R** depicts the history of local operations at SLN and examines its historic market share of GA local operations at towered airports in the United States. Lo-

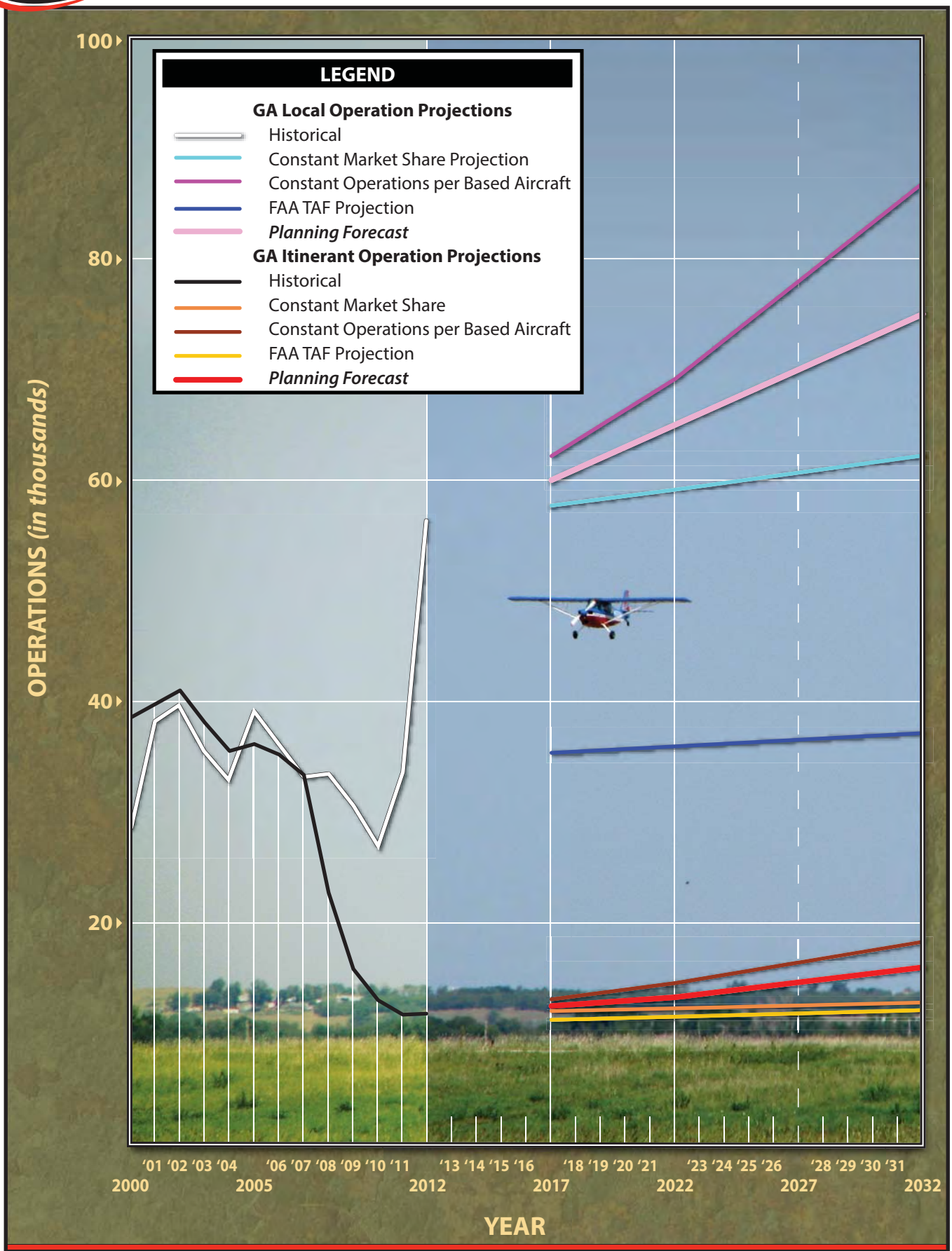



**Exhibit 2H**
**General Aviation Itinerant/Local Operations Forecast**

cal operations include a low of 26,953 in 2010 to a high of 56,329 in 2012. It should be noted that the operations for 2012 include the 12-month period from December 2011 through November 2012.

**TABLE 2R**
**General Aviation Local Operations Forecast**
**Salina Regional Airport**

| Year | SLN Local GA Operations[1] | U.S. ATCT GA Local Operations[2] | SLN Market Share | SLN Based Aircraft[3] | Local GA Operations per Based Aircraft |
|---|---|---|---|---|---|
| 2005 | 38,925 | 14,843,600 | 0.262% | 141 | 276 |
| 2006 | 36,120 | 14,365,400 | 0.251% | 137 | 264 |
| 2007 | 33,195 | 14,556,800 | 0.228% | 137 | 242 |
| 2008 | 33,472 | 14,081,200 | 0.238% | 119 | 281 |
| 2009 | 30,614 | 12,448,000 | 0.246% | 131 | 234 |
| 2010 | 26,953 | 11,716,300 | 0.230% | 123 | 219 |
| 2011 | 33,639 | 11,437,000 | 0.294% | 133 | 253 |
| 2012 | 56,329 | 11,155,600 | 0.505% | 105 | 536 |
| **Constant Market Share Projection (AAGR = 1.05%)** | | | | | |
| 2017 | 57,704 | 11,426,500 | 0.505% | 116 | 497 |
| 2022 | 59,138 | 11,710,400 | 0.505% | 129 | 458 |
| 2032 | 62,224 | 12,321,500 | 0.505% | 162 | 384 |
| **Constant Operations Per Based Aircraft Projection (AAGR = 2.19%)** | | | | | |
| 2017 | 62,176 | 11,426,500 | 0.544% | 116 | 536 |
| 2022 | 69,144 | 11,710,400 | 0.590% | 129 | 536 |
| 2032 | 86,832 | 12,321,500 | 0.705% | 162 | 536 |
| **FAA TAF Projections (AAGR = -2.059%)** | | | | | |
| 2017 | 35,373 | 11,426,500 | 0.310% | 116 | 305 |
| 2022 | 35,956 | 11,710,400 | 0.307% | 129 | 279 |
| 2032 | 37,155 | 12,321,500 | 0.302% | 162 | 229 |
| **Planning Forecast (AAGR = 1.44%)** | | | | | |
| 2017 | 60,000 | 11,426,500 | 0.525% | 116 | 517 |
| 2022 | 65,000 | 11,710,400 | 0.555% | 129 | 504 |
| 2032 | 75,000 | 12,321,500 | 0.609% | 162 | 463 |

[1]FAA Air Traffic Activity System (ATADS)
[2]FAA Forecasts 2012-2032
[3]FAA Terminal Area Forecast except 2012 from airport records.

Four forecasts of local general aviation operations for Salina Regional Airport are presented. The first considers the airport maintaining a constant market share of national local general aviation operations. The next considers a constant market share of local general aviation operations per based aircraft. The third is the FAA TAF forecast, and the final forecast is the selected planning forecast which falls within the planning envelope created by the four forecasts.

## *AIR CARRIER OPERATIONS FORECASTS*

Air carrier operations include operations conducted by commercial operators with more than 60 passenger seats and/or more than 18,000 pounds payload. These operations are typically conducted by large air carrier passenger and cargo airlines. Salina is not served by these airlines on a regularly scheduled basis. These aircraft do operate at the airport on

an irregular basis. A review of historic air carrier operations indicates that these operations have ranged between a low of five in 1991 to a high of 185 in 2003. There is no discernible trend as the operations tend to fluctuate widely from year to year. As a result, the planning forecast will follow the low, mid-range, and high typicals experienced over the last 22 years as follows:

- 2017 – 60 operations
- 2022 – 90 operations
- 2032 – 140 operations

## *AIR TAXI OPERATIONS FORECASTS*

Air taxi operations include operations conducted for-hire with fewer than 60 passenger seats and/or less than 18,000 pounds payload. Some operations by aircraft operated under fractional ownership programs are also counted as air taxi operations. Since the airline operations have been forecast in the previous section, this section reviews the growth potential for the "other" air taxi operations at Salina Regional Airport.

According to ATCT records for 2012 (December 2011 through November 2012), there were 23,700 air taxi operations logged at Salina Regional Airport. Of this total, approximately 1,780 were conducted by scheduled commercial airline service as previously discussed, leaving approximately 21,920 operations being included in the "other" air taxi activity. These air taxi operations have historically ranged between 10 and 68 percent of all itinerant operations. In fact, air taxi operations are rising at a greater rate than any other operational category at SLN.

Air taxi forecasts have been prepared as a market share of all air taxi operations conducted at U.S. airports served by an ATCT. These forecasts are presented in **Table 2S**, including the selected air taxi forecast.

### MILITARY ACTIVITY

Salina Regional Airport experiences frequent activity by military aircraft. The ATCT tracks military separately, the history of which is presented in **Table 2T**. SLN is an attractive airport for military operations because of the diversity of approaches, including the instrument landing system (ILS) and its proximity to various military installations. As detailed in the previous chapter, SLN is an FOL for the military including the Kansas Guard, U.S. Active and Guard Units, and international military units such as the Canadian Royal Air Force.

**TABLE 2S**
**Air Taxi Operations Forecast**
**Salina Regional Airport**

| Year | SLN Air Taxi Operations[1] | U.S. ATCT Air Taxi Operations[2] | SLN Market Share |
|---|---|---|---|
| 2005 | 5,533 | 12,550,500 | 0.0441% |
| 2006 | 5,635 | 11,967,200 | 0.0471% |
| 2007 | 5,042 | 11,667,300 | 0.0432% |
| 2008 | 11,382 | 11,032,100 | 0.1032% |
| 2009 | 14,859 | 9,520,800 | 0.1561% |
| 2010 | 16,304 | 9,410,400 | 0.1733% |
| 2011 | 19,707 | 9,278,500 | 0.2124% |
| 2012* | 21,920 | 9,217,200 | 0.2378% |
| **Constant Market Share Projection (AAGR = 1.5%)** | | | |
| 2017 | 23,987 | 10,087,100 | 0.2378% |
| 2022 | 25,880 | 10,883,100 | 0.2378% |
| 2032 | 30,301 | 12,742,300 | 0.2378% |
| **Increasing Market Share Projection (AAGR = 2.3%)** | | | |
| 2017 | 24,209 | 10,087,100 | 0.2400% |
| 2022 | 27,208 | 10,883,100 | 0.2500% |
| 2032 | 34,404 | 12,742,300 | 0.2700% |
| **FAA TAF Projections (AAGR = 1.007%)** | | | |
| 2017 | 21,062 | 10,087,100 | 0.2088% |
| 2022 | 22,912 | 10,883,100 | 0.2105% |
| 2032 | 27,120 | 12,742,300 | 0.2128% |
| **Planning Forecast (AAGR = 1.48%)** | | | |
| 2017 | 26,000 | 10,087,100 | 0.258% |
| 2022 | 28,000 | 10,883,100 | 0.257% |
| 2032 | 32,800 | 12,742,300 | 0.257% |

* 2012 operations from December 2011 through November 2012; Does not include the estimated 1,780 SeaPort Airline operations

[1]FAA Air Traffic Activity System (ATADS)
[2]FAA Forecasts 2012-2032
[3]FAA Terminal Area Forecast except 2012 from airport records.

**TABLE 2T**
**Military Operations Forecasts**
**Salina Regional Airport**

| Year | Itinerant | Local | Total |
|---|---|---|---|
| 1990 | 8,900 | 12,370 | 21,270 |
| 1991 | 6,640 | 8,121 | 14,761 |
| 1992 | 6,717 | 7,369 | 14,086 |
| 1993 | 5,596 | 6,091 | 11,687 |
| 1994 | 3,836 | 3,606 | 7,442 |
| 1995 | 3,753 | 5,467 | 9,220 |
| 1996 | 3,236 | 5,503 | 8,739 |
| 1997 | 3,478 | 6,657 | 10,135 |
| 1998 | 3,269 | 8,138 | 11,407 |
| 1999 | 4,162 | 11,052 | 15,214 |
| 2000 | 4,200 | 10,778 | 14,978 |
| 2001 | 3,625 | 5,426 | 9,051 |
| 2002 | 3,915 | 5,241 | 9,156 |
| 2003 | 3,328 | 2,836 | 6,164 |
| 2004 | 2,712 | 4,199 | 6,911 |
| 2005 | 2,302 | 3,246 | 5,548 |
| 2006 | 1,719 | 2,660 | 4,379 |
| 2007 | 2,183 | 2,531 | 4,714 |
| 2008 | 1,869 | 1,877 | 3,746 |
| 2009 | 2,192 | 1,703 | 3,895 |
| 2010 | 2,348 | 1,805 | 4,153 |
| 2011 | 1,993 | 1,967 | 3,960 |
| 2012* | 2,074 | 2,706 | 4,780 |
| **SELECTED FORECAST** | | | |
| 2017 | 2,650 | 3,600 | 6,250 |
| 2022 | 3,100 | 4,675 | 7,775 |
| 2032 | 3,650 | 5,275 | 8,925 |

*Source: FAA ATADS*

Military operations at SLN have fluctuated widely since 1990, having a high of 21,270 in 1990 and a low of 3,746 in 2008. Forecasting of military operations at civilian airports is difficult as many unknown factors can influence the total one way or the other. Military mission changes, wars, base closures, etc. all factor into the operational totals at an airport. As a result, the forecasting approach generally used is a simple average of historic operations.

The selected military operation forecast in **Table 2T** presents three averages. For 2017, the forecast is the average military operations at SLN between 2000 and 2012. The last 20 year operational average (1993 – 2012) was used for the 2022 projection. Finally, the average military operations between 1990 and 2012 were used for the 2032 projection. These projections do not intend to suggest that operations will follow a linear growth curve, as they may remain constant at the projected 2017 levels or increase to the projected 2022 or 2032 levels and remain constant. However, these figures do represent reasonable planning levels based on historic trends at SLN.

## *PEAKING CHARACTERISTICS*

Many airport facility needs are related to the levels of activity during peak periods. The periods used in developing facility requirements for this study are as follows:

- **Peak Month** – The calendar month when peak aircraft operations occur.
- **Design Day** – The average day in the peak month. This indicator is easily derived by dividing the peak month operations by the number of days in a month.
- **Busy Day** – The busy day of a typical week in the peak month.
- **Design Hour** – The peak hour within the design day.

It is important to note that only the peak month is an absolute peak within a given year. All other peak periods will be exceeded at various times during the year. However, they do represent reasonable planning standards that can be applied without overbuilding or being too restrictive.

### AIRLINE PEAKING

Similar to general aviation, airport capacity and facility needs related to commercial service operations typically consider the levels of activity during a peak or design period. Determination of peaking characteristics related to airline activity is important for the planning and design of passenger terminal services. This includes the appropriate size of the terminal building and the functional areas therein. Terminal building elements include hold rooms, security checkpoints, concessions, restrooms, baggage claim area, etc. The airline peaking characteristics also relate to aircraft gates, ramp apron space, and overnight parking.

Between 2002 and 2012, the peak month enplanement totals have averaged approximately 15 percent of the annual enplaned passengers. For planning purposes, the future peak month enplanement level is estimated at 15 percent of annual forecasted enplanements.

The design day enplanement level for the peak month is essentially the average weekday enplanements of the peak month. Typically, this is derived by dividing the peak month enplanement level by the number of days in the month. To account for slightly fewer flights on certain days of the week, the design day for operations is obtained by dividing by a factor of 29 rather than 31.

The design hour enplanement estimate is based on the current airline schedule at the airport. According to the schedule, the hourly peak for departures was one. At most, there are three scheduled flights per day that are spread so none overlap within the same hour. Thus, the design hour enplanements should factor the ability for a full aircraft boarding. Planning will utilize the Pilatus PC-12 as the design hour aircraft to ensure proper landside facilities are offered to meet the potential demand a full aircraft would generate. Future consideration will increase the design hour enplanement potential to 19 to account for higher seating capacity turboprop aircraft that could seat approximately 19 passengers. The higher figure could also account for the possibility that two PC-12s make departures in the peak hour.

The average peak month for airline operations was projected at 10 percent of total annual operations. The current design day for operations is known from the flight schedule. There are up to three daily departures by SeaPort Airlines; therefore, the current daily operations count is six. Future design day operations forecasts are a function of daily airline operations and are based on the forecast fleet mix, BLF, and schedule. Design hour operations include both arrival and departure activity. For future planning considerations, the potential addition of another flight could increase the design hour operations for Salina Regional Airport. **Table 2U** outlines the peak period airline operations forecasts.

**TABLE 2U**
**Peaking Characteristics**
**Salina Regional Airport**

| | 2012 | 2017 | 2022 | 2032 |
|---|---|---|---|---|
| **AIRLINE ENPLANEMENTS** | | | | |
| Annual Enplanements | 2,723 | 3,100 | 4,300 | 6,000 |
| Peak Month | 408 | 465 | 645 | 900 |
| Design Day | 14 | 16 | 22 | 31 |
| Design Hour | 9 | 9 | 9 | 19 |
| **AIRLINE OPERATIONS** | | | | |
| Annual | 1,780 | 1,720 | 1,912 | 1,904 |
| Peak Month | 178 | 172 | 191 | 190 |
| Design Day | 6 | 6 | 8 | 8 |
| Design Hour | 1 | 1 | 1 | 2 |
| **GENERAL AVIATION OPERATIONS** | | | | |
| Annual Operations | 68,143 | 72,500 | 78,300 | 91,000 |
| Peak Month | 8,518 | 9,063 | 9,788 | 11,375 |
| Busy Day | 379 | 403 | 436 | 506 |
| Design Day | 275 | 292 | 316 | 367 |
| Design Hour | 33 | 35 | 38 | 44 |
| **TOTAL AIRPORT OPERATIONS** | | | | |
| Annual | 96,663 | 106,530 | 116,077 | 134,769 |
| Peak Month | 11,600 | 12,784 | 13,929 | 16,172 |
| Design Day | 374 | 412 | 449 | 522 |
| Design Hour | 45 | 49 | 54 | 63 |

## GENERAL AVIATION

The peak month of general aviation operations at Salina Regional Airport has averaged 12.5 percent of the yearly total between 2002 and 2012. The peak month for general aviation operations at the Airport typically occurs during the month of October which would correlate to new school year activity by KSU Salina.

During the peak month, the peak day of each week averaged approximately 20 percent of the week. This equates to a busy day approximately 38 percent higher than the average or design day. Based upon activities at similar airports, design hour was calculated as 12 percent of the design day operations.

## TOTAL OPERATIONS

The total operations peak periods are utilized in examining the capacity of the airfield. The peak month of total operations has averaged 12 percent of annual operations over the last five years, typically oc-

curring during the summer months. **Table 2U** outlines the peak period forecasts for total airport operations.

## *ANNUAL INSTRUMENT APPROACHES*

Forecasts of annual instrument approaches (AIAs) provide guidance in determining an airport's requirements for navigational aid facilities. An instrument approach as defined by the FAA is "an approach to an airport with intent to land by an aircraft in accordance with an instrument flight rules (IFR) flight plan, when visibility is less than three miles and/or when the ceiling is at or below the minimum initial approach altitude."

Historical data on instrument approaches to the Airport is not readily available. Therefore, an estimate of AIAs was prepared based upon information from similar airports. The number of AIAs was calculated for the planning period by utilizing an industry standard of 2.5 percent of itinerant operations. The AIA projections are presented on **Exhibit 2J**.

## *SUMMARY*

This chapter has outlined the various activity levels that might reasonably be anticipated over the planning period. **Exhibit 2J** is a summary of the aviation forecasts prepared in this chapter. Actual activity is included for 2012, which was the base year for these forecasts.

There is no question that the airport was impacted by the recent economic recession as evidenced by declines in enplanements and overall general aviation operations. Nationwide, the decline in aviation activity has slowed, and traffic is expected to begin responding to improved economic conditions. SLN is a significant aviation facility that serves a vital function for the regional economy. While recent economic trends have had some impact, the airport has continued to thrive and grow in certain segments. The information presented in this chapter presents a case for continued growth.

The next step in the Master Plan is to reassess the capacity of the existing facilities and determine what facilities will be necessary to meet both existing and future demands. The next two chapters will examine airport facility requirements as well as alternative methods for providing future airport facilities.