

V. OPERATIONAL PLAN

This section addresses the safety, security, operational, environmental, and training aspects of the Airport, and how the Airport conducts its day-to-day operations, the services it provides, the methods by which those services are provided and the standards of efficiency and effectiveness that is to be maintained.

1.1. Safety

The primary duty of any airport manager is to operate a safe and efficient facility, within the applicable regulations. For airports holding Part 139 certificates, this function is made easier through the use of regulations and approved standards of airfield safety.

1.1.1. Part 139 Operating Certificate

Airports serving air carrier aircraft in excess of 31 seats are required to have a Part 139 Operating Certificate. Currently, the FAA is modifying the Part 139 regulations; it is expected the 31-seat requirement will be lowered to 9-seats. Although St. Louis Regional Airport is not required to maintain a Part 139 certificate and presently does not have scheduled flights or unscheduled charter flights in excess of 31-seats (which may require a partial Part 139 program), the St. Louis Regional Airport does maintain a Part 139 operating certificate.

It is beneficial for an airport to maintain the Part 139 standard as it generally offers higher levels of safety for airport users and tenants, regardless of the availability of scheduled operations. Whether or not a certificate is issued the Part 139 standard is a good benchmark for safe and efficient services.

The FAA has considered limiting or reducing the number of airports carrying a Part 139 certificate due to limited financial and personnel resources, especially at airports that do not have scheduled commercial air service.

By using a Part 139 Certification Manual (and the associated standards of Part 139) the Airport ensures that responsibility, authority, and procedures for compliance with the certification are carried out, by establishing what actions must be taken, when and how frequently, and establishes how tasks are completed and who is responsible for doing them.

Presently, the Airport holds a 139 Certificate, requiring the Airport to meet standards in the following areas:

- Maintenance and inspection of paved areas
- Maintenance and inspection of safety areas
- Marking and lighting
- Snow and Ice control (and equipment list)
- Aircraft Rescue and Fire Fighting (ARFF) (and equipment list)
- Handling and storage of hazardous substances and material
- Traffic and wind direction indicators

- Airport Emergency Plan
- Self-Inspection program
- Ground vehicles
- Obstructions
- Protection of nav aids
- Public protection
- Wildlife hazard management
- Airport condition reporting
- Identifying/marketing/reporting construction and other areas
- Noncomplying conditions

The categories required for the Part 139 certification provide the St. Louis Regional Airport a competitive advantage over other non Part 139 general aviation airports. The established higher standards of safety inherent in the certification process provides a higher level of comfort for aircraft owners, passengers, pilots and aviation insurers when choosing which airport to use.

The Airport shall continue to maintain its Part 139 Operating Certificate for the overall safe and efficient operation of the Airport.

1.1.2. NOTAMS

The primary method of communication between an airport operator and a pilot is through the use of the Notice To Airman System (NOTAM).

NOTAMs provide critical flight safety information such as runway or airfield conditions, potential hazards to air navigation (construction cranes) and surface information during snow events including braking actions and condition of the runway (packed snow, ice, etc). NOTAMs initiated by the Airport go to the FAA Flight Service Station (FSS) and are disseminated nationally. Under Federal Aviation Regulations Part 91 Subpart B, paragraph 103, paragraph (a), “Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. For a flight under IFR (Instrument Flight Rules) or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATCT (Air Traffic Control Tower).”

While NOTAMs may seem straightforward and easy to issue, many Flight Service Stations have specific requirements that must be met regarding the format and content of a NOTAM before they will issue it. Additionally, each FSS has it’s own style and preferences for NOTAM format and content. Airport personnel responsible for issuing NOTAMs should meet routinely with FSS personnel to discuss methods, format, content and proper NOTAM issuance procedures, then stay up-to-date on the correct policies and procedures.

NOTAM issuance is very important. This was evident in the 2000 fatal crash of a Gulfstream IV into Aspen/Pitkin County Airport in Colorado, where one of the causal factors

in the crash may have been a failure to issue a NOTAM warning of a change to the instrument approach system.

Although it has not been a problem in the past at St. Louis Regional Airport it is a good management practice to maintain a high level of proficiency with NOTAM issuance procedures.

The Airport shall require all personnel responsible for issuing NOTAMS to participate in one training session with the Flight Service Station and periodically thereafter as procedures change.

1.1.3. Airport Construction

Construction on airports creates additional hazards to airport operations. Large, often fast-moving equipment (in the case of haul roads), and numerous personnel not always familiar with the airport environment can threaten the safety of pilots and passengers. It is not at all unusual for a construction truck to be accidentally driven into a movement area (i.e., the runways or taxiways) or for a construction crane to be erected near the flight pattern without the proper prior authorization or coordination with airport management personnel.

The FAA requires coordination with the FAA and the airport on any project involving the aircraft movement areas or navigable airspace. If construction is taking place within the Safety Area of a runway or taxiway, then special attention is necessary for the protection of the traveling public.

In cases where navigable airspace (including movement areas on the ground) will be affected, an FAA Form 7460-1, Notice of Proposed Construction or Alteration shall be filed (or must be in certain cases). Regardless of whether a 7460 is required to be filed, it is a good management practice to contact the FAA-ADO anytime there is construction on the Airport, and to issue a NOTAM, or an airfield advisory through the Automated Terminal Information System (ATIS).

Airport management shall include as part of any authorized construction, a designated on-site safety manager who is responsible for ensuring construction personnel remain in authorized areas and who understands and follow the rules. A safety brief shall be part of the pre-construction meeting, and all construction activities must be closely monitored throughout the project. Additionally, for major capital projects in and around the movement area, a morning safety brief shall be held with contractor personnel and Airport management.

The Airport shall require a pre-construction safety meeting and that a safety coordinator be appointed for each construction project on the Airport.

1.1.4. Vehicle Movement – Airside/Runway Incursions and Airfield Safety

It is recommended by the FAA and is a good management practice to limit the number of vehicles with access to the airfield. Additionally, for vehicles authorized to be in the air operations area, access and use by vehicles of the movement areas (runways and taxiways) shall be limited to essential operations only.

The Airport Manager must take actions to limit the number of vehicles on the air operations area and to further ensure that those personnel authorized to drive on the air operations area, have the adequate training and knowledge to do so, safely.

Due to an aircraft's limited maneuverability on the ground, a principle of airport operations is that aircraft always have the right-of-way. Some airports have modified this to allow emergency vehicles responding to an incident to have right-of-way over aircraft, but this is rare.

Prior to 9/11, the FAA identified runway incursions as the most serious issue facing airports in the United States. While the terrorist attacks took national attention off of the issue, the safety problem remains. The safety of the airfield is paramount and above any political considerations or customer complaints that may arise as a result of procedures implemented to prevent accidents and incidents.

The FAA's General Aviation Joint Steering Committee cites runway incursions among the top six leading causes of general aviation accidents:

A runway incursion is actually a part of a related term called "surface incidents." A surface incident occurs when one of the following happens:

A runway incursion is the most dangerous type of surface incident and occurs when an aircraft on landing or take-off must take evasive action due to an obstruction on the runway, usually another aircraft, a vehicle, or a pedestrian.

A vehicle/pedestrian deviation occurs when an unauthorized vehicle or pedestrian is on a movement area (taxiway or runway).

An operational error occurs when an air traffic controller authorizes an aircraft, vehicle, or pedestrian to take an action in conflict with another aircraft that also is operating under ATC's direction and approval.

A pilot deviation occurs when a pilot fails to follow instructions issued by air traffic control or in conflict with aircraft operation regulations.



The FAA has provided a significant amount of time and resources to mitigating runway incursions. Among the programs in use, which also include compliance with Airport design standards, is a set of informational cards designed to educate pilots and other airport tenants on runway incursions (shown above), a Ground Vehicle Guide and a Pilot's Guide to Signs and Markings. These brochures and cards are available from the FAA. As part of an overall safety program, the Airport shall stock and maintain the cards and brochures at its terminal offices and distribute this information routinely to Airport tenants.



Harrison Ford in the FAA
runway safety video

The FAA has also produced a safety film on runway incursions. As part of an overall safety program, the Airport shall require all based tenants to view the movie at least once. In addition, the Airport will develop a 15-minute airfield drivers orientation program that educates drivers on the hazards and proper procedures of operating in and around the movement area. All tenants and customers with access to the airfield, shall complete the training at least once, prior to receiving an Airport access card, in addition to recurrent training at least once every 5 years or for any major change to the movement area (new taxiway, runway, etc).

For Airport personnel and employees of Airport businesses who require access to the runways and taxiways (Movement Areas), an annual training program shall be required. The program shall include a tour of the Movement Areas, supervised by an employee of the Airport or a designated trainer.

The Airport will develop air operations area operating procedures including a training or familiarization program for Airport users requiring access to the AOA and a supervised driving tour for personnel requiring access to the Movement Areas.

1.1.5. Wildlife Hazard

Part 139 Certification requires a wildlife hazard management program. The Airport must take immediate action to alleviate wildlife hazards whenever detected. This may include habitat modification (keeping grass mowed) and removing trees, standing water, ponds or other areas of perching or roosting areas. Wildlife fencing has shown to be effective at some airports and is usually eligible for federal funding.

Birds create a specific hazard to aircraft both in the air and on the ground. Flocking birds must not be allowed to reside on Airport property and the Airport Manager shall take appropriate action to eliminate any flocks. Harassing or frightening devices, such as whistlers, shotgun blasts, or even scarecrows, have been proven effective in some cases. Lethal methods can also be employed under certain circumstances and within the legal limitations set forth by federal, state, and local regulations.

The Airport Manager must be aware of local political and public sensitivities when assessing wildlife management issues and proper mitigation techniques. Often times, prairie dogs, coyotes, and birds have environmental activists working on their behalf. While the argument can be made that by allowing certain wildlife to remain Airport safety is compromised, the Airport can quickly find itself in between pressure from the community to control the wildlife in a humane manner and FAA pressure to maintain a safe operating environment. The Airport Manager shall consult with local area wildlife authorities prior to taking any mitigating action, except in such cases where an immediate threat to life or property, in which case, the Airport Manager shall take action as appropriate to ensure the safety of the users and customers.

The Airport Manager shall also be aware of wetland properties either on or around the facility, which may impact flight operations. Wetlands are an entire ecosystem and pose a particular hazard with several types of animals. Ground animals are often hunted by birds of prey; other smaller insects and creatures are food for other types of birds hence the existence of this natural food attracts birds to the Airport.

An additional environmental issue is storm water runoff and the local water supply. Fish are subject to contamination to storm water runoff, which may affect local freshwater lakes, ponds, and rivers, with the environmental liability resting on the Airport.

Presently, the St. Louis Regional Airport is completely fenced by an 8' wildlife fence, which also serves to increase security for the airfield. The Airport does not presently have a significant problem with wildlife hazards, despite being in an area that is conducive to their propagation. Therefore, any wildlife programs or additional mitigation procedures or strategies, beyond what is currently being conducted, is at a lower priority than other projects. If the occurrence of wildlife on the Airport increases and creates a danger to aircraft operations, then additional mitigation efforts will be assessed and implemented as appropriate.

The Airport will draft and implement a wildlife control plan to mitigate any current threats to Airport safety and establish a system for identifying and assessing future wildlife problems.

1.1.6. Public Protection

Part 139 Certification requires the Airport to provide for the protection of the public by limiting access to the airfield through the use of fencing and signage, and to protect persons and property from aircraft blast and movement areas.

Many of the safety and security procedures already in place at St. Louis Regional Airport serve to protect the public and the Airport users.

Presently, the certification process ensures the Airport meets this requirement. Additionally, the fencing and signage appear to be adequate (at this time) to deter those without authorization or need to be on the Airport, from accessing the field without seeing a "No Trespassing" sign, or having to navigate an obstacle intended to keep them off of the airfield.

St. Louis Regional Airport will continue to monitor and assess methods of protecting the public on an on-going basis.

1.2. Security

Historically, general aviation airports have not been concerned with security beyond the prevention of aircraft theft or vandalism, or trespassing or vandalism on Airport property. Prevention of aircraft theft has largely been left to the domain of the Fixed Base Operator or the individual aircraft owner. Fencing, if any, was usually only a means to limit access to the airfield to those with a need to be on the airfield: pedestrians who did not have a legitimate reason to be on the Airport and to keep wildlife out of the way of aircraft.

Fencing is non-existent at many general aviation airports in the United States. Security fencing is currently not mandated or funded by the FAA as part of the AIP program.

Other security measures, such as background checks for employees and personnel with access to the airfield, photographic ID cards, CCTV monitors and vehicle entry gates are also not part of the general aviation airport lexicon. Where they do exist vehicle access gates and restrictions to personnel and vehicles on the airfield were done with safety in mind, not security. In some cases, security came as an additional benefit of these projects, but they were not designed with security as the primary focus. Access gates and airfield driver training were done to enhance safety for aircraft and personnel on the air operations area.

Until September 11th, 2001.

1.2.1 The Effects of the September 11th Terrorist Attacks

While the terrorist attacks were carried out using commercial airliners departing from major commercial airports, the potential for general aviation aircraft to be used in similar types of attacks cannot be ignored. In May of 2002, the Transportation Security Administration formed the General Aviation Airport Security Office and set forth to analyze potential regulations for the general aviation airports in the United States.

The American Association of Airport Executives (AAAE) immediately submitted to the TSA, 13 recommendations to be used in the formulation of general aviation airport security policy.

As of the draft of the business plan, the TSA still hasn't generated security requirements for general aviation airports, but that doesn't mean that they aren't forthcoming. Presently, the TSA is concerned with meeting Congressional mandates for taking over screening (personnel and implementing 100% baggage screening) at all of the US commercial air carrier airports. Additionally, the TSA is still in its beginning stages and is trying to hire 40,000 – 60,000 new employees and create the largest, most complex new government agency in nearly 50 years. All this is being done as the Executive Branch tries to reorganize several federal agencies, including the TSA, into a new Department of Homeland Security.

Commercial service airport security is presently regulated under 49 CFR Part 1542 (formerly FAR Part 107 – Airport Security), so the addition of new regulations is a straightforward process since the FAA is simply adding new regulations to an existing rule. General aviation airport security does not fall under any sort of regulation in the Code of Federal Regulations so a regulation will first have to be created prior to the creation and implementation of new rules.

The TSA has created and is continuing to create new regulations for certain aspects of general aviation aircraft under existing regulation 14 CFR Part 91. The "Twelve-Five Rule" adds passenger and baggage screening requirements (similar to those for commercial air carriers) for aircraft charter operators with a maximum certificated takeoff weight of 12,500 lbs or greater.

The 95,000 lb rule creates “airline-style” passenger and baggage screening requirements for general aviation aircraft with a gross take-off weight of 95,000 lbs or greater. Since the St. Louis Regional Airport can easily accept aircraft in this category, this regulation may have an affect on its operators.

It is expected that within the next year (probably before December 2003), the TSA will put forth general aviation airport security regulations.

It is a prudent management practice to look ahead and attempt to foresee the potential changes that will affect that airport’s operation. Certain recommendations that most likely will be adopted are:

- Classifying general aviation airports based on size, proximity to major metropolitan areas, number and type of based aircraft
- Access control (photo ID and vehicle access gates) for larger general aviation airports
- Mandatory background checks for employees with airfield access
- Additional lighting, and possible CCTV monitoring of sensitive areas including airfield access points, fuel storage areas and aircraft parking areas

Since 9/11, there have been several warnings issued by the FBI regarding possible terrorist activity using general aviation aircraft. The threat of terrorism has not gone away. The methods and procedures of terrorists are to strike in areas of vulnerability where their enemy is least expecting it. Hundreds of terrorists groups have been identified operating in the United States and with the vulnerability of general aviation airports and the ease of access to large general aviation aircraft as airports such as St. Louis Regional, it is prudent to take measures to deter or prevent terrorist acts from taking place.

Part 139 Certification does not require specific security requirements as these are often covered under other Federal regulations at airports with scheduled service.

1.2.2. Security Plan

St. Louis Regional Airport will take the following measures with regards to Airport security:

- Conduct a security site assessment focusing on the Airport’s effectiveness of security procedures, awareness (people), facilities and communications.
- Write an Airport security plan focusing on prevention of unauthorized access to aircraft, tenant involvement, and emergency communications with law enforcement and other emergency response agencies.
- Procedures to secure snow removal equipment, Airport vehicles and fire trucks when not in use.
- A tenant – Airport routine communication system to distribute security information to key business owners.
- Procedures for reporting an armed takeover or theft of large business jet to the air traffic control.

- Include as part of the maintenance plan, that access gates and lighting covering access points, fuel storage truck and aircraft parking areas, shall be routinely inspected and immediately replaced when broken.
- Establish working relationships with local FBI, FAA, TSA, police/sheriff agencies for proper reporting of suspicious information, threats and other Airport security related activity.
- The Airport will draft and implement security specific regulations into their Rules and Regulations (or Minimum Standards as appropriate) as specifically directed by the TSA (or other regulating agency) and as required from the results of the security site assessment.

1.3. Staffing Requirements

Staffing requirements are currently being met with the level of activity and the Airport's scope of responsibility. If the nature of the Airport changes significantly (i.e. scheduled service, a major tenant(s), security requirements), staffing will be evaluated at that time, to ensure the Airport can continue to provide the necessary highest level of safety and security.

1.4. Products and Services

Products and services (beyond snow removal, Airport maintenance and fire/rescue response) are currently being met by the Fixed-Base Operators on the Airport.

1.5. Policies and Procedures

It is essential to the safe and efficient operation of an airport for airfield inspections and issues relating to the safety of airport operations, to maintain essential records, including inspection logs, a logbook of activities and a reliable pass-along system for memorandums and notices to be read by operations personnel.

Elements of an effective operations administrative program include:

- A bound or digital logbook for operations personnel to note routine and significant events for legal record and to pass along information to the next shift. Part 139 Certification already requires certain events to be recorded but there are many other activities that do not fall under the 139 reporting requirements that enhance airport safety and efficiency. A logbook can accommodate those needs.
- A pass-along system for memos and information to operations personnel from Airport management or other personnel to ensure the information is received accurately and in a timely manner.

1.6. Environmental Plan

Airports (and airport managers) are at severe risk for civil and criminal liabilities for improper management of environmental issues. Airports should have a program of compliance with Environmental Regulations and a regular assessment of the Airport's compliance to protect the Airport from legal ramifications and as a show of good faith compliance to regulators. Additionally, the Airport Manager must ensure that tenants, contractors, and vendors are in compliance with environmental procedures for transporting, storing, and disposing of hazardous materials generated at the Airport.

With legal loopholes available to private businesses through the use of LLCs and other corporate organizational structures, the Airport may still find itself the reluctant inheritor of an environmental problem. The adage of "cradle to the grave" in terms of environmental responsibility applies more practically to the airport itself as the landowner, rather than the tenant or user.

The following guidelines must be considered when addressing environmental concerns on the St. Louis Regional Airport.

1.6.1. Water Quality

When storm water runs across Airport property it takes minor amounts of fuel, oil and other chemicals that have spilled onto the ground, into local waterways. Additionally, undesirable soil sediments can also be washed away with storm water. Federal law requires a specific permit for storm water runoff and a written manual documenting the Airport's practices to mitigate the pollution.

Several Congressional acts cover water quality, discharges and prevention and cleanup, including the Clean Water Act, which established regulations and methods to prevent discharge of pollutants into a waterway without a permit from the EPA; the Safe Drinking Water Act (1974) covers discharges into ground water sources including aquifers; the Oil Pollution Act (1990) covers preparedness and response.

The Airport's current Part 139 Certification and Storm Water Pollution Prevention Plan covers the fundamental components necessary to environmental reporting and management. Unless there is a significant change to the operational nature of the Airport, these documents will continue to meet the environmental planning function; the documents should be reviewed annually for completeness and any changes to the operation nature of the Airport. Additionally, contained within the Storm Water Pollution Prevention Plan is National Pollutant Discharge Elimination System (NPDES) Permit, No. ILR003004.

The NPDES permit regulates storm water discharges. Airports with operations exceeding 50,000 per year are required to have a Storm Water Pollution Prevention Plan and implement Best Management Practices. St. Louis Regional Airport meets both of these requirements under their permit.

The permit identifies several allowable pollutants that may be discharged, including wash water from aircraft wash facilities and deicing material. However, this permit does not cover construction activities including grading and excavation. Tenants or the Airport must obtain the necessary permits prior to commencing construction of projects.

The St. Louis Regional Airport will continue to comply with the Storm Water Pollution Prevention Plan, including Best Management Practices, with an annual review, and a compulsory review with every new development or improvement made to the Airport.

1.6.2. Superfund

While airports are not eligible for Superfund monies, airports must comply with certain requirements contained within the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (CERCLA) and the Superfund Amendments and Reauthorization Act in 1986 (SARA). Essentially, CERCLA/SARA covers closed and abandoned hazardous waste sites, established liability, and a fund to cover clean up.

Airports most often find themselves affected by SARA when acquiring, leasing, or selling Airport property. The Airport may find itself responsible for cleaning up the site or financing the clean up for the tenant, prior to or after the transaction. The transaction itself does not necessarily transfer the liability from the Airport to the tenant.

Any tenant prior to leasing land from the Airport shall conduct an environmental review.

1.6.3. Underground Storage Tanks

In 1988 the EPA set new regulations for UST's, which include leak detection requirements and financial capability to pay for a clean up.

St. Louis Regional Airport has UST's. In the general interest of the Airport and the community, prior to construction of any new UST's the Airport shall seek proof from UST owners (other than the Airport) of financial capability (self-insurance, surety bond or Letter of Credit) to clean up any leak or spill and to keep said documents on file at the Airport Managers office.

The Airport will establish a UST inspection program to ensure proper testing of UST facilities for leakage.

The St. Louis Regional Airport will periodically review its insurance coverage for environmental incidents (or research additional environmental insurance if necessary) to protect the Airport from costly environmental clean-ups.

1.6.4. Environmental Assessment

When an airport embarks on an AIP funded improvement project, the environmental impacts and regulations are addressed under the National Environmental Policy Act of 1969 (NEPA) and as specified in FAA Order 5050.4 "Airport Environmental Handbook". Each project will fall into one of three categories, Categorical Exclusions, Environmental Assessments, Environmental Impact Statements. Categorical Exclusions are those projects that have been found to not have a significant environmental impact. Environmental Assessments (EA's) are projects that have been found to have varying environmental impacts, An Environmental Assessment (EA) is conducted to determine if a full Environmental Impact Statement (EIS) is required.

Airport managers and commissioners can be held civilly and criminally accountable for violations of environmental regulations (i.e. may be financially responsible for clean up or accountable for failing to take action as necessary to prevent or clean up a known problem).

St. Louis Regional Airport adopted a Hazardous Substances Ordinance on September 14, 1995, which covers the storage and spill notification requirements of certain hazardous substances on Airport property. The Ordinance allows storage of substances classified as toxic, corrosive or flammable in the amount of less than five gallons in aggregate amounts, without prior approval of the Airport Manager. It makes unlawful the storage of radioactive substances.

Therefore, non-FAA funded projects shall also have environmental issues taken into consideration and monitored for compliance.

1.6.5. Air Quality

While the Clean Air Act of 1970 was passed over three decades ago, it was only recently that air quality was significantly addressed at General Aviation airports.

Generally, the Airport Master Plan and specific engineering projects require air quality assessments. However, large-scale development projects, such as the northwest quadrant development the Airport has programmed into its TIP will most certainly require air quality assessments. If the projects are federally funded with AIP funds, the air quality analysis will normally be incorporated into the scope of work. However, if the project is not AIP funded, it is up to the Airport sponsor to ensure that proper air quality assessments are performed.

Large-scale projects, such as the addition of an FBO, maintenance, flight training and other facilities, can affect air quality in two ways. The first is due to construction of the actual facility with vehicle emissions, hot asphalt paving and construction material screening. The second impact to air quality comes from additional vehicle traffic year-round and during the winter with traffic on sanded roads. If a hotel or restaurant is incorporated into the design of the FBO or other associated properties, then the air quality is affected to a higher degree. Generally, if a new facility is expected to increase vehicle traffic over 500 additional vehicles per day, then an air quality assessment is recommended.

Requiring alternative fuels for vehicles, the use of auxiliary power units for aircraft starts or reducing taxi times through airfield efficiencies are some recommended options for reducing emissions.

There does not appear to be a current problem with the air quality and emissions generated at St. Louis Regional Airport, when development of the northwest quadrant begins, an air quality assessment will be required if it is part of a federally funded improvement program

The Airport will assess air quality issues on any major development project henceforth.

1.6.6. Hazardous Waste

The Resource Conservation and Recovery Act of 1976 (RCRA) covers the storage, treatment or disposal of hazardous waste. It is the genesis of the “cradle to the grave” concept of environmental liability. The RCRA requires comprehensive record keeping and product labeling.

RCRA classifies waste into three categories based on the quantities of waste generated: Conditionally Exempt (less than 100kg per month of hazardous waste), Small Quantity (100kg to 1,000kg) and Large Quantity (1,000kg +).

St. Louis Regional Airport is considered a Large Quantity generator due primarily to its deicing of the runways (an important safety feature). The deicing material is a glycol mixture, a common runway deice substance. According to the Airport’s Storm Water Pollution Prevention plan deicing material has not historically drained into any areas that may do damage to the environment or the local fish population.

If the Airport changes the type of chemicals applied to the runway for deicing purposes, the SWPP will have to be re-evaluated.

1.6.7. Agriculture

Pesticides, fungicides and the accidental leak or spill of toxic substances is covered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1988.

FIFRA requires an individual to be certified to dispense pesticides. Most airports have a need for rodent and critter control of some sort. Historically, St. Louis Regional Airport has handled this requirement through contract personnel. Airports’ sometimes feel it is necessary to have members of Airport staff acquire the proper certification to ensure compliance with federal law. Provided contract personnel continue to meet the demands for rodent control, and provided the costs of certification for a member of Airport staff remains higher than contract personnel, the Airport will continue the use of contract personnel.

1.7. Maintenance

Airfield maintenance focuses on three primary areas: field, fleet and building.

1.7.1. Field Maintenance

The “field” includes Airport infrastructure in general including runways, taxiways, apron and vehicle access roads. The primary areas of field maintenance include signage, pavement maintenance, and airfield lighting.

The Part 139 Certification requires daily inspection of the airside elements (runways, taxiways, pavement, lighting), but not public access areas.

- The Airport will add public access areas into its daily airfield inspection program.

1.7.2. Pavement Condition and Inspection

Part 139 requires the Airport maintain pavement areas used by air carriers. While St. Louis Regional Airport does not have air carrier operations, the requirement is part of the certification and is a good management practice to reduce airport liability and prevent damage to aircraft using the facility.

Acceptable weights for the runways are listed as:

Runway	11/29	17/35
Length	8,101'	6,500'
Width	150'	100'
Surface	Asphalt	Asphalt
Treatment	Grooved	N/a
Gross Wt: Single Wheel	80,000 lbs	35,000 lbs
Dual Wheel	140,000 lbs	47,000 lbs
Dual Tandem Wheel	200,000 lbs	N/a

Pavement surfaces fall into one of two categories, flexible (asphalt, gravel, grass, dirt) or rigid (cement). Both Airport runways are asphalt, which is significant to note as asphalt is less expensive than cement, but requires more maintenance. A petroleum based product like asphalt is susceptible to oxidation and any spilled fuel or oil. Cement can better resist weathering and contaminants, but is more expensive.

Asphalt must be inspected frequently for cracking and deterioration, which allows water and other contaminants to seep through. Without frequent seal coats the subbase is weakened to the point where the overlying asphalt sags and develops potholes. Once the subbase is deteriorated, aircraft loads that would otherwise be acceptable exceed the pavement’s ability to support them. Patching of weakened areas must be done immediately to preserve the integrity of the asphalt.

Asphalt will stay durable for ten years, but experiences a near 40% drop in quality at the 11-year mark, continuing exponentially downward thereafter. Pavement rehabilitation should be scheduled no later than the 11-12 year mark for most asphalt pavement areas, depending on local factors such as weather and the location and use of the pavement on the Airport (with respects to aircraft parking vs., taxiing activities, fuel spills and drainage). Routine seal coats can protect and expand the life of asphalt by helping to prevent water seepage. The smooth surface after a seal coat enhances snow removal and sweeping operations and reduces equipment wear and tear.

The FAA requires airports to have a Pavement Management System as a condition of the Grant Assurances. The Certification Manual only covers the inspection criteria for pavement, not the replacement and rehabilitation program itself.

Runway 11/29 is grooved to enhance drainage. This is a benefit to the safety and marketing of the Airport and should be maintained. Runway grooving below 1/8 of an inch for more than 40% of the runway for a distance of 1500' must be repaired. The runway must also not be allowed to accumulate contaminants, such as tire rubber, in the grooves, which reduces its ability to shed water. The St. Louis Regional Airport, despite use by larger aircraft has not shown to have significant rubber deposits.

Additionally, pavement friction tests should be periodically conducted (with engineer's recommendations) to ensure skid-resistance is maintained and reduce the chances for hydroplaning. In some cases, this consists of rubber removal techniques such as high-powered blasting. Rubber removal is more prevalent on airports with frequent jet activity.

The Airport will conduct periodic pavement friction tests to ensure skid resistance is maintained and take corrective action when necessary.

1.7.3. Safety Areas, Pavement Markings and Lighting

Safety areas are located around runways and taxiways and are maintained in a way to minimize damage to aircraft that may potentially run off of the paved surfaces. The Safety Area must be able to support an aircraft that has veered off into the area, fire fighting vehicles, and maintenance equipment.

Safety areas must be cleared of obstacles, unless mounted upon a frangible, which is designed to break away upon impact and lessen the damage to the airplane or vehicle striking it. Airfield signage and lighting is usually mounted on frangibles for this purpose. The Part 139 Certification program covers inspection of safety areas.

Proper airfield markings increase the level of safety for an airfield. Paint should be visible and markings clear and distinguished from previously painted areas to pilots and vehicle operators. The Part 139 Certification program covers inspection airfield markings.

Runway lighting is classified depending on brightness: high intensity runway lights (HIRL), medium intensity runway lights (MIRL) or low intensity runway lights (LIRL). HIRL's and MIRL's have varying levels of intensity and can usually be controlled by the air traffic control tower or the pilot by clicking his microphone a certain number of times.

St. Louis Regional Airport has HIRL's for it's main runway (11/29) and MIRL's for runway 17/35. The Certification standard is not met when there are more than three lights in a row out of service, or more than 10% of the runway or taxiway route system is out. The daily Part 139 required inspection is generally adequate to ensure compliance in this area.

1.7.4. Building and Fleet Maintenance

Airports can have large physical plants that require consistent maintenance. These usually include an electrical system for runway lighting, custodial services, heating, ventilation, and air conditioning systems. The workload is divided between preventative maintenance and repair work.

Maintenance of the airports snow removal, fire fighting, and field vehicle fleet is essential to the safe operation of the Airport. Airports should have routine preventative maintenance schedules and replacement schedules for fully depreciated equipment in order to provide an uninterrupted high level of service to Airport users.

The current process of replacing vehicles as needed and using unusable vehicles for spare parts ensures the Airport takes full advantage of the resources available. St. Louis Regional Airport will continue this very practical and cost efficient system. In addition, projecting the lifespan of vehicles and equipment, and implementing a replacement schedule achieves a higher level of financial planning.

Tracking maintenance costs and using salvage parts from other vehicles is the current procedure for vehicle maintenance and replacement. When a vehicle's maintenance costs increase significantly, money is budgeted to replace the vehicle in the next fiscal year. Additionally, when vehicles are no longer in working order, their usable parts are salvaged and put into service to keep other vehicles (and equipment) in working order. These are good management practices as they save money and use resources to their fullest potential.

To better plan for vehicle breakdown and replacement in the future, a depreciation schedule should be maintained. Once a vehicle is fully depreciated its replacement cost is programmed into the next fiscal year. There are three options for the replaced vehicle or piece of capital equipment:

- Continue to use the vehicle or piece of equipment until it's completely unusable
- Salvage it for spare parts
- Sell it and put the money back into the Airport account for other expenses

Depreciation and a replacement schedules have shown to be a cost-effective method of reducing maintenance costs; since replacement is planned, unplanned breakdowns of vehicles and equipment beyond its serviceable life is reduced.

The Airport will draft and implement a Vehicle and Equipment Replacement Schedule, including depreciation in accordance with GAAP.

The depreciation and replacement schedule procedure is effective with building maintenance items as well.

Therefore, the Airport will institute a Building preventative maintenance schedule and depreciation / replacement schedule in accordance with GAAP.

1.8. Snow and Ice Plan

Airports with a Part 139 Operating Certificate are required to have a snow removal plan. Snow and ice can cause a loss of friction; many aircraft operators have a one inch limitation of accumulation they may operate on.

Airport operators must remove snow and ice as soon as possible. Part 139 certification requires snow be removed once every 30 minutes from the primary runway in use, for operations in excess of 40,000 annually.

A snow and ice plan must include procedures for removing snow from the aircraft movement areas, repositioning of snow so as to avoid wingtips and not become a jet or propeller blast hazard, the materials and equipment used, weather reporting, personnel training, coordination and response, and notification of Airport users via NOTAM's regarding runway surface conditions.

Priority snow removal areas are the primary runway and emergency access roads to the primary runway.

An effective snow plan begins at the beginning of snow season. Every airport required to have a snow plan must have a snow "committee" as part of the plan. The committee is composed of airport management (operations and maintenance personnel), air traffic control, fixed-base operators and other parties as deemed necessary by either the plan or the Airport Manager.

The committee should meet (at the very minimum) at the beginning of each snow season, then once again at the end. Frequent meetings during the snow season, post snow debriefings, are very useful in solving problems and increasing airfield safety. Oftentimes, these post-snow event meetings need only include airfield maintenance/operations personnel and air traffic controllers' on-duty during the snow event.

Snow crews are better prepared to handle a storm when armed with the following weather forecast information: estimated time snowfall will start and estimated time snowfall accumulations will begin, estimated duration, intensity and accumulation, wind direction and speed and any changes in velocity, temperature ranges and cloud coverage. Good weather forecasts and awareness of present and projected conditions to snow removal personnel is essential to the efficiency of any snow event.

Applying chemicals to the runway can be expensive but often increases braking action, which is important to corporate aircraft users.

To provide the highest possible level of safety the Airport snow committee will meet at least once prior to and after each snow season, and conduct smaller post-snow event debriefings with maintenance and air traffic control personnel.

1.8.1. Snow Removal Equipment

Commercial and non-commercial service airports have different requirements for the types and amounts of snow removal equipment. St. Louis Regional Airport is in the unique position of possessing a Part 139 Operating Certificate but not being a commercial service airport.

Commercial service guidelines require at least one high-speed rotary snowblower with at least two displacement plows. The snowblowers' primary purpose is to move built up windrows of plowed snow away from the movement areas. It may also serve a dual purpose by having the ability to load snow into a loader. Non-commercial service airports whose annual operations exceed 10,000 require a snowblower and at least one displacement plow.

While not required, runway sweepers have proven effective at several airports in removing certain types and quantities of snow and enhancing runway deicing. Sweepers cause less wear and tear to the runway surface and can pick up trace amounts of snow early in a snow event, thereby delaying accumulations. For deicing, sweepers help to break up the ice once deicing material has had an opportunity to begin the melting process. Additionally, sweepers can reduce wear and tear on plow blades and components, thereby saving on expenses.

The Airport will assess its current snow removal effectiveness and program equipment additions or replacements to ensure increased braking action and reduced runway snow removal time.

1.8.2. Snow Removal Procedures

The prevailing winds, both historically and predicted for a particular storm will affect how snow crews attack a particular storm. Normally, plows will form in an echelon formation and proceed down the runway pushing snow off to one side or the other forming a windrow. If prevailing winds are usually from one side or the other, it is beneficial to push the snow to the downwind side to prevent accumulated snow from blowing back onto the runway.

After the plows have formed a windrow a snowblower tosses and disperse the snow banks or windrows into the field, or loads the snow into a dump truck for safe removal from the Movement Areas

Snow removal procedures shall be reviewed annually at the beginning and end of each snow season.

1.9. Emergency Response and Continuity of Operations Planning

An airport emergency plan outlines the actions and responsibilities of specific individuals and organizations. The plan also confirms the commitments of the parties involved through the use of Memorandums' of Understanding, Letters of Agreement or by the parties approved signature on the document.

Emergency plans should cover emergency communications and aircraft accidents on and off the Airport, with a clear definition of how far from the Airport property Airport fire fighting assets can and will respond.

Part 139 certificated airports are required to have an emergency plan covering the following components:

- Emergency phone numbers and points-of-contact
- Participating agencies
- Organization responsibilities for: Airport, local, state and Federal agencies and private agencies (such as aircraft removal)
- Types and levels of emergencies such as: aircraft incidents and accidents, bomb threats, structural fire, natural disasters, power failures)
- Response procedures including chain of command
- Crowd control, media and public information
- Medical services, first response, trauma and local hospital coordination and morgue
- Mutual Aid Agreements and Letters of Agreement
- Emergency alarm system and notification procedures
- Training sessions and exercises

In any event Airport personnel must carry out their duties in the following order or priority:

- Protection and preservation of human life
- Minimize property damage and preserve the accident or incident site until the proper investigation authorities arrive and authorize that the scene can be altered
- Restore normal Airport operations as quickly as practicable

General Aviation airports normally experience emergencies of the following nature:

- Landing gear failure (or perceived failure or pilot error)
- Electrical failure
- Engine failure
- Loss of control (most associated with flight training or low-time pilot operations)

General aviation airports like St. Louis Regional Airport are more likely to experience a fatal accident due to the infrequent use of many private aircraft, lower maintenance requirements on general aviation aircraft and limited pilot experience.

Larger commercial service airports are more likely to experience a mass casualty accident, however large-scale incidents can occur at any airport as occurred in Sioux City, Iowa in 1989: While in cruise from Denver, Colorado, a United Airline's DC-10 experienced a failure of the number two engine. This leads to a loss of all three hydraulic systems. Using differential thrust on the two remaining engines to control the aircraft the crew maneuvered the aircraft to a crash landing at the Sioux City airport. One of the 11 crewmembers and 110 of the 285 passengers were killed. Effective emergency planning on behalf of the Sioux City airport was credited with saving many lives.

All airports should be prepared to handle a large-scale emergency if necessary. While it may be impractical to maintain high levels of personnel and equipments to handle a large-scale incident, small airports can still be prepared through effective training, communications with other emergency response entities, and annual exercises.

The Airport will conduct annual exercises and develop a large-scale response plan.

1.10. Continuity of Operations Policy and Planning

Continuity of Operations Planning (COOP) references the ability of an entity to continue mission-essential functions without unacceptable interruption. COOP plans include preparatory measures, response actions and restoration of “normal” activities.

The ability of the Airport to continue to operate through adversity directly affects its safety, efficiency, and marketability. The Airport Manager must identify those disasters or emergencies that could affect the Airport’s ability to maintain operations and establish contingency plans covering the four fundamental areas of emergency planning:

Mitigation – action to prevent potential disasters or major emergencies before they occur

Preparedness – planning on how to respond in case of an emergency and work to increase resources available needed to respond effectively

Response – methods to provide immediate assistance following a disaster to victims and reduce the likelihood of secondary damage

Recovery – the continuation of all normal systems, both short-term and long-term recovery plans

The Airport will complete a Continuity of Operations Policy, including (but not limited to) the following components:

- Identification of potential disasters, incidents and other emergencies that could affect the Airports ability to operate (these could include significant incidents like major aircraft accidents, or minor incidents such as a power failure affecting the runway lights)
- In each case, the type of emergency situation, the response activities to be performed, the personnel and resources involved, and any assistance from outside agencies must be identified
- Identification of mission critical elements of the Airport’s operation which may include:
 - Provision of a landing surface clear of obstructions (including safety areas)
 - Provision of properly functioning navigational aids, including lighting
 - Provision of air traffic control services or safe, acceptable alternatives
 - Any other item that may affect the safe, efficient operation of the Airport

- Contingency plans for each potential emergency identified in item #1 above which must include (but are not limited to) the following elements:
 - Items which must be accomplished immediately and by whom for the protection of persons and property; immediate notification items are normally communicative in nature (calling for assistance, notifying emergency assets of a disaster or incident), or response oriented (first responders on-scene, moving victims from further harm if applicable, fire response, or other immediate rescue functions)
 - Secondary response by outside personnel (additional law enforcement assets for site security, additional fire/rescue personnel)
 - Tertiary response for support assets (Red Cross, Salvation Army for victims assistance, provision of food for emergency responders,) and portable toilets
- Coordination with area hospitals
- Media response plan
- Memorandums of Understanding or Letters of Agreement with other agencies specifying areas of responsibility
- Communications plan (for both Airport staff and to be able to communicate with off-site agencies)
- Primary methods and alternatives for maintaining the Continuity of Operations during each disaster or emergency which may include:
 - Relocation of Airport offices, short and long term
 - Relocation of control tower operations, short and long term
 - Alternative landing sites (issuance of NOTAMS)
- Create a COOP table using the four phases of comprehensive emergency management (mitigation, preparedness, response, recovery)
- The COOP table will quickly identify action items under each of the four phases; a sample of the COOP table is as follows:

Mitigation <i>(long-term)</i> Definition: Activities which eliminates or reduce the occurrence or chance of a disaster including long term activities which reduce the effects of unavoidable disasters	Preparedness <i>(to respond)</i> Definition: Activities necessary to the extent that mitigation measures have not or could not prevent an incident or disaster; activities designed to save lives and minimize damage	Response <i>(to emergency)</i> Definition: Activities following an incident or disaster, generally designed to provide assistance to casualties, reduced secondary damage and speed recovery operations	Recovery <i>(short and long term)</i> Definition: Short-term recovery returns vital life support systems to minimum operating standards. Long-term recovery may last for several years, to return life to normal or improved levels
FIRE Fire codes No-smoking laws Fire zoning Fire safety information Minimum Standards	Fire drills/exit signs Callboxes/ smoke detectors Police crowd control training Fire department agreements Firefighter training	Firefighting Containment	Rebuilding Razing burned out buildings Reforestation

- Examples of Mitigation measures are:
 - Legislation / Zoning enforcement
 - Building codes
 - Land use management
 - Master planning
 - Structural changes
 - Examples of Preparedness measures are:
 - Public education
 - Training
 - Exercises
 - Budgeting
 - Equipment
 - Contingency planning
 - Examples of Response measures are:
 - Incident command
 - News media
 - Emergency repair
 - Security
 - Damage assessment
 - Emergency rescue
 - Examples of Recovery measures are:
 - Development planning
 - Loans, grants
 - Incident reporting procedures
 - Monitoring
- Testing and Training of Contingencies
- Upon completion of the COOP, each contingency will be trained, and periodically tested and exercised
- Training comprises instructing individuals or agencies in functions, procedures and responsibilities
- Testing is the demonstration of the correct operation of equipment, procedures, processes and systems that support the organization
- Exercising is the evaluation of individual or organizational performance against a set of standards or objectives

In any disaster or incident planning, the primary question the Airport manager must ask is can the Airport continue to operate safely? If so, then the continuity of operations has not been interrupted. However, if the answer is no, then several more questions must be answered including: what measures must be taken to safely reopen the Airport? Contingency plans should be designed with these questions in mind.

St. Louis Regional Airport will develop a Continuity of Operations Policy to reduce interruptions of Airport service to users where able, and improve the safety and efficiency of the Airport's operation.

1.10.1. Aircraft Rescue and Fire Fighting

Statistically, around 60-70% of all aircraft accidents occur within half a mile of an airport. Aircraft fires with piston-engine aircraft are rare. An aircraft carrying jet fuel is often more likely to explode or catch fire, so any airport that has a significant amount of jet traffic must be prepared to handle such emergencies.

The Part 139 Certification dictates the level of fire response necessary. Aircraft with wingspans between 90' and 126' are labeled Index B, which requires one lightweight and one self-propelled fire-extinguishing vehicle; 450lbs of dry chemical and 1,500 gallons of water for foam production.

Foam is generally the extinguishing agent of choice for its ability to smother flames and cool the surrounding area to keep the fire from spreading. Dry chemical is most effective on smaller fires, electrical fires and tires. However, a magnesium fire extinguisher, while not required is recommended for putting out tire fires, which generally burn hotter.

Training is an essential element of fire fighting, both for life safety of the airport user and for the airport or local fire department personnel involved in the fire. Aircraft rescue and fire fighting is very unique as compared to structural or car fires that most firefighters are used to handling. Whenever possible, training should be at a certified facility with additional training in emergency management and "Chief's" school (sponsored by AAEE), along with annual re-certification. Additionally, personnel responsible for fire fighting should be familiar with the types of aircraft normally using the airport, to better understand methods of egress, door locking systems and any other anomalies.

St. Louis Regional Airport has several fire fighting vehicles and an effective training program. The Airport will continue to maintain a high level of training and ensure the firefighting capabilities of the Airport are not reduced below current levels.

1.11. Conclusion

The St. Louis Regional Airport maintains the 14 CFR Part 139 certification, which is generally accepted to be a higher level of safety for Airport users.

In addition to maintaining this certificate the Airport will review and add several procedures to enhance the safety, security, and efficiency of the St. Louis Regional Airport.