## Category 9: Essential Resources

Essential resources are defined as those mandatory services or systems required for the agency's operational programs to function. They should be given the same value of importance as a primary program. Appropriate adjustments may be necessary in the self-analysis to adapt the typical components listed below to the local situation. For example, when reviewing a water supply system, the evaluation may not be limited to conventional resources, such as water lines and fire hydrants, but may include alternative resources, such as tankers (tenders), ponds, streams, lakes, cisterns, etc.

**Criterion 9A: Water Supply**

The water supply resources are reliable and capable of distributing adequate volumes of water and pressures to all areas of agency responsibility. All areas meet fire flow requirements in accordance with applicable fire flow criteria. An agency seeking prima facie for this criterion should refer to the Commission on Fire Accreditation International Interpretation Guide for the qualifying language.

**Summary**

The City of Lawrence owns and operates two water treatment plants (WTP), each with independent sources of raw water. The Kaw WTP operates 16.5 million gallons per day with raw well and surface water intakes from the Kansas River (1.04 million gallons of finished storage). The Clinton WTP operates 25 million gallons per day (3 million gallons of finished storage) and utilizes surface water from the United States Corps of Engineers Clinton Reservoir as a raw water source. Each plant utilizes high service pumps to pump finished water to the distribution system and system storage. The city's distribution system covers approximately 30 square miles with 434 miles of water main. Two pressure zones delineated by elevation cover the city. The West Hills and Central Service each are capable of pumping treated water to either pressure zone. The distribution system includes four elevated and three ground storage reservoirs for an additional 6.25 million gallons of storage. Ground storage reservoirs provide system pumping. This distribution system serves the City of Lawrence, Kansas University, and Haskell Indian Nations University. Five Rural water districts and Baldwin City also receive water from the city's distribution system.

During the three-year period of 2019 through 2021 the City of Lawrence completed the following infrastructure improvements that address capacity, reliability, and redundancy in the water supply system:

- Water main Replacements Projects – 11,000 linear feet of water main replaced based on age, number of breaks, diameter less than 8" or other operational and level of service factors.

During 2022, the city will continue to make improvements to water distribution with the following infrastructure improvements:

- Stratford Tower Replacement – Replacement of a 500,000-gallon elevated storage tank that has reached the end of its service life
- 23rd Street Water Main Replacement – Replacement of approximately 5,500 linear feet of 24" transmission main and 11,000 linear feet of 12" distribution main.
- Vermont Street Bridge Transmission Main Replacement – Replacement of approximately 1,800 linear feet of 16" transmission main to provide a redundant water supply to North Lawrence
- New York Street Transmission Main Replacement – Replacement of approximately 5,000 linear feet of 24" transmission main; Water main Replacement Projects Ongoing – 14,000 linear feet of water main to be replaced based on age, number of breaks, diameter less than 8" or other operational and level of service factors

Infrastructure improvements projected for 2023 through 2027 include:

- $22.6 Million for water main replacements and relocations to address failing infrastructure and accommodate street projects
- $3.5 Million for replacement of large diameter transmission mains
- $10.0 Million for water treatment plant maintenance and infrastructure rehabilitation

The city provides fire protection to Grant Township through a fire protection agreement. There is a plan in place for water shuttle supply using water tenders due to the lack of a hydrant system for firefighting purposes.

The city adopted the 2018 International Fire Code (IFC) and associated Appendixes July 1, 2019, and uses IFC Appendix B *Fire Flow Requirements for Buildings* and Appendix C *Fire Hydrant Locations and Distribution* to determine fire flow and distribution requirements for the city. In addition, the City Municipal Services & Operations (MSO)

Department utilizes Innovyze InfoWater modeling software to plan for and provide effective fire protection.

The department's ISO review is being conducted. The department is waiting for final results related to the evaluation.

**Performance Indicators:**

**CC 9A.1 The agency establishes minimum fire flow requirements for new development in accordance with nationally and/or internationally recognized standards and includes this information in the fire risk evaluation and pre-incident planning process.**

**Description**

With the adoption of the 2018 IFC in 2019, the minimum required fire flow is 1500 gallons per minute at a residual pressure of 20 psi per 2018 IFC Table B105.1(2). Fire hydrant location and spacing is typically 300-600 feet based on applying required fire flow to 2018 IFC Table C102.1 Number and Distribution of Fire Hydrants, accessibility to hydrant locations, and firefighting apparatus limitations (hose lengths).

The Municipal Services and Operations Department (MSO) utilizes American Water Works Association (AWWA) manual M31, Distribution System Requirements for Fire Protection, as the referenced industry standard. The manual indicates minimum pipe size within the system should be 6" and 8" for a "high value district." Per City of Lawrence Design Criteria, 8" is the minimum pipe size used in current installations.

**Appraisal**

The methods utilized by the department to establish minimum fire flow requirements and water supply meet the needs of the department. Risk evaluation and pre-fire planning has included the use of fire flow requirements and water supply.

**Plan**

The program continues to work well and requires little maintenance. The department will continue to work closely with the MSO Department to ensure adequate water flow is present in all newly built areas and in areas that are receiving updated service. The addition of fire hydrants to in identified locations will allow more access to an adequate water supply when needed.

**References**

2018 IFC Appendix B and C (available on-site)

AWWA manual M31, table 2-1 (available on-site)

City of Lawrence Design Criteria Section 5900

2016 ISO Assessment (2022 ISO Assessment will available on-site)

**CC 9A.2** **An adequate and reliable water supply is available for firefighting purposes for identified risks. The identified water supply sources are adequate in volume and pressure, based on nationally and/or internationally recognized standards, to control and extinguish fires.**

**Description**

The city operates from and maintains a fixed water supply system with two water treatment plants capable of supplying and treating more than 43 million gallons per day. Elevated and ground storage tanks may provide an additional 6.8 million gallons. City MSO personnel will boost water pressure and volume with pumps and elevated storage at the request of an incident commander during large-scale events.

For response areas outside the city limits, the department has a portable water supply system based on tender responses as outlined in the Douglas County Tender Response Auto Aid Agreement.

The department's ISO review is being conducted. The department is waiting for final results related to the evaluation.

**Appraisal**

The department has access to an adequate fixed water supply and adequate portable water supply for firefighting purposes. These systems have provided sufficient volume and pressure to control and extinguish fires. This has been based on a credit for water supply of 29.55 of 30 from ISO in the 2016 assessment.

During a Public Protection Classification evaluation by ISO in August 2015, the city received a Class 1 rating. In the summer of 2022, the department underwent an evaluation by ISO. The department is still waiting for the final rating report.

**Plan**

The department will continue to utilize the existing water supply systems, both fixed and portable. The department will receive a final rating report from ISO late Fall 2022.

The command staff will review the Douglas County Tender Response Auto Aid Agreement and update, if necessary.

**References**

Memo from Municipal Services & Operations on procedures for increased flow

Douglas County Tender Response Auto Aid Agreement

2016 ISO Assessment (2022 ISO Assessment will available on-site)

9A.3 The agency has a contact list on file and maintains regular contact with the managers of public and private water systems to stay informed about available water supplies.

**Description**

The city's MSO Department and the department has a strong, collaborative working relationship. The department participates in the review process for utility projects and provides comment based on the requirements set forth in the fire code. Some of the improvements that have resulted from this relationship are improvements to the number of hydrants installed when waterlines are replaced and/or development projects occur in established areas, the reduction in the number of private water main loops, and the notification of water main breaks and repairs.

The MSO department field supervisors will make email notification to department liaisons, including aerial map views, of areas experiencing service disruption. This email is then forwarded to the entire department email list for notification. When the city MSO Department removes a hydrant from service, the goal is to return the hydrant to service on the same day. Accidents, parts availability, or extended projects may delay the return to service. MSO documents and disseminates information regarding hydrant service delays. The MSO Department designates hydrants that are "Private," "City" and "Out-of-Service" by hydrant color or by using hydrant rings. Private hydrants are typically painted red while city hydrants are painted yellow. The out-of-service rings provide a visual indicator of its status. Hydrants maintained by the city that are involved in relocation or rehabilitation projects are "bagged" when not in service.

The department has developed an "operations dashboard" through ESRI GIS that provides an interactive city map which can display information related to water distribution and systems. This dashboard is currently in the soft launch process.

**Appraisal**

The current system of notifying all stations by e-mail when there is a significant interruption in water supply with street closing for maintenance is sufficient. When there

is a significant water line break with prolonged interruption of service, the fire chief and the division chief of prevention are notified. A map of the area with specific locations of interruption are identified and any hydrants placed “out of service” are identified with an “out of service” ring.

The department’s operations dashboard includes layers from GIS that have bogged down the system, causing delays in updates and connectivity issues. This has been one of the major challenges in the deployment of the dashboard.

The department’s operations dashboard’s capabilities are anticipated to be useful for increased awareness of system resiliency and assist with additional information that can help with incident management on large-scale events.

**Plan**

The department will continue with its current system of contact and notification. The MSO Department will place an “out-of-service” ring on hydrants that are not operational.

The Administrative Division, the department’s technology program manager, and the city GIS team will continue to improve the functionality of the ESRI operations dashboard and will fully deploy the dashboard to all stations.

**References**

Email regarding Water Main Outage
Email Regarding KU Private Hydrants Out of Service
2016 ISO Assessment (2022 ISO Assessment will available on-site)
Operations Dashboard Screenshot – Water Distribution

9A.4 The agency maintains copies of current water supply sources and annually reviews fire hydrant maps for its service area to ensure they are accurate.

**Description**

The department has mapping of the city water supply and distribution system available through electronic and paper map systems. The city utilizes Esri ArcGIS and is accessible via office computers and mobile data computers on apparatus. ArcGis allows the user to turn on layers for distribution mains, hydrants, valves, and domestic supply. The operations dashboard includes some of this information. Each apparatus contains a map book based upon ArcGIS data. City maps are gridded into mile and quarter mile sections then assigned a grid number and quadrant letter. Map books contain locations of hydrants, sprinkler and standpipe connections. The department's technology specialist incentive positions oversee the annual review and updating of the map books and work closely with the city's GIS team.

**Appraisal**

The department maintains copies of current water supply and hydrant maps for the service area. The current mapping system works well, and employees are familiar with its use. The maps provide quick and accurate identification of the city distribution system and hydrant locations. The ability to access the information from mobile devices would be beneficial but barriers related to the city information technology security have delayed this progress.

**Plan**

The department will continue to provide accurate and up-to-date maps to all agency stations and apparatus. The department will continue to work closely with the city's GIS team to ensure quality data and explore opportunities to make the data more accessible.

**References**

SOP 111.13 Technology Specialist Incentive

Department Map Book (available on-site)

Water Distribution Map (available on-site)

Operations Dashboard (available on-site)

9A.5 Fire hydrant adequacy and placement are based on nationally and/or internationally recognized standards and reflect the hazards of the response area.

**Description**

The Prevention Division conducts a comprehensive plan review of development within the city. The Prevention Division uses 2018 IFC Appendixes B and C as the basis of land use development reviews, and for hydrant distribution. Appendix C, Fire Hydrant Locations and Distribution, establishes the minimum number and spacing allowed and provides the flexibility to increase the number or decrease the spacing for high-risk areas. The MSO Department utilizes a minimum spacing of 500 feet when improving the distribution system or adding hydrants.

**Appraisal**

The department benefits greatly from the strong support it receives from the city's MSO Department. The water system, including hydrant adequacy and placement, meets the needs of the department based on its assessment of high quality through ISO.

**Plan**

The department will continue to enforce the 2018 International Fire Code relevant to hydrant locations and distribution.

**References**

2018 IFC Appendixes B and C (available on-site)

9A.6 Public fire hydrants are inspected, tested, maintained, visible and accessible in accordance with nationally and/or internationally recognized standards. The agency's fire protection-related processes are evaluated, at least annually, to ensure adequate and readily available public or private water.

**Description**

The testing and maintenance of all city hydrants became the responsibility of the city's MSO Department in 2008. Testing, flushing, and maintenance of hydrants occur on a four-year cycle. The MSO department provides an Excel spreadsheet of flow data for import into ESO, the department's record management system (RMS), Properties and Inspections module. The city's MSO Department has received recognition from the American Water Works Association (AWWA) for its testing and maintenance program.

**Appraisal**

The city has an excellent water supply and distribution system with excellent routine maintenance. The department has received a Class 1 rating and the AWWA has recognized the Utilities maintenance program. The current system does not address the maintenance of hydrants on the Haskell Indian Nations University (HINU) campus. A 2010 PPC evaluation identified that the private hydrant and distribution system of University of Kansas (KU) did not have a formal maintenance plan or system. The department approached KU about developing a system that mirrored the city maintenance program. KU leadership agreed, and a plan was developed and implemented in April of 2011.

The city's MSO Department has been tasked with addressing how backflow prevention for private systems and the necessary inspection, testing, and maintenance are documented. This in turn has opened conversation with the inspection, testing, and maintenance of private hydrants and hydrant loops that exist in the city.

**Plan**

All testing, flushing and maintenance of the public water distribution system will remain the responsibility of city's MSO Department. The Prevention Division will contact HINU

and request an opportunity to discuss means to improve testing and maintenance on the campus. MSO and the Prevention Division will work jointly to address inspection, testing, and maintenance of private hydrants and hydrant loops that exist in the city. The Administrative and Prevention Divisions will work with other city departments to enhance the communication and workflows related to fire hydrant status.

**References**

Hydrant Test Data

Municipal Services & Operations Department sample maintenance record

ISO Fire Hydrant Flow Test Results

9A.7 The agency identifies, plans and trains for the possibility of a water supply system failure, including fire hydrants with insufficient capacity and areas where fire hydrants are unavailable or inaccessible.

**Description**

The department currently has in place a plan for areas that have insufficient water supply. That plan includes the following for structure fires:

- Identify areas with insufficient water distribution (i.e. Grant Township and newly annexed areas with pre-existing structures).
- Dispatch on first alarm assignment two 500-gallon pumpers and a Tender with 2500 gallons.
- Utilize Mutual Aid Agreement for a Tender Response of up to 10 Douglas County tenders.

The department also utilizes two brush trucks with 200 gallons each for grass and brush fires. In addition, the 2015 Lawrence City Commission approved funding to purchase a new tender to be located at Station 4. This apparatus will be based upon the current department use of a Pierce Velocity Chassis with PUC pump, four door crew cab and seating for four firefighters and 2500-gallon water tank, 100 gallons of Class A foam and 300 Gallons of Class B foam.

The department requires engineers to complete the Fire Apparatus Operator Certification through International Fire Service Accreditation Congress (IFSAC) in order to operate department apparatus. The certification process requires that candidates demonstrate competency in pump and drafting operations.

The department has a good working relationship with the city's MSO Department. The incident commander may request an increase of water pressure and volume in the event of a large-scale incident.

**Appraisal**

The department has adequately planned for response to structure fires when there is limited water supply.

**Plan**

The department will continue to identify areas of annexation that have limited water supply and plan responses accordingly. Certification training for department engineers will continue. The department will continue to assess its fleet and match water and pumping capabilities with needs. The department will continue to keep a working relationship with local mutual aid agencies to prepare for a collaborative response when needed.

**References**

SOP 202.10 Alarms and Responses

Douglas County Tender Auto Aid Agreement

9A.8 The agency has operational procedures in place outlining the available water supply and reviews those procedures as part of their documented review policy.

**Description**

The department utilizes SOP 304.30 Water Distribution to inform and guide employees in the distribution and use of the water supply. In addition to SOP 304.30 Water Distribution, SOP 207.30 Apparatus Placement, and SOP 202.30 Automatic Mutual Aid Medical Fire Stand-By, department engineers must complete the Fire Apparatus Operator Certification through International Fire Service Accreditation Congress (IFSAC).

**Appraisal**

The department's SOPs related to water supply and the Fire Apparatus Operator Certification program provide the foundation for employees to learn proper use of hydrant-based water supply. Employees are aware of the procedures for various kinds of incidents and of the water supply within the city limits. Additional drafting and water shuttle training would benefit agency personnel. Combined training with mutual aid agencies would bring value to all participants.

**Plan**

The department will continue to require all engineer positions to be certified Fire Apparatus Operators through IFSAC. The department will explore performance-based training in drafting and water shuttle operations and training opportunities with mutual aid agencies to improve water supply capabilities in rural areas.

**References**

SOP 304.30 Water Distribution

SOP 207.30 Apparatus Placement

SOP 202.30 Automatic Mutual Aid Medical Fire Stand-By

NFPA 1002-2017, Fire Apparatus Driver/Operator-Pumper (available on-site)

NFPA 1002 – 2017, Chapter 4 Fire Apparatus Driver/Operator – Aerial (available on-site)

NFPA 1002 – 2017, Chapter 7 Fire Apparatus Driver/Operator – ARFF (available on-site)

**Criterion 9B: Communications Systems**

The public and the agency have an adequate, effective, and efficient emergency communications system. The system is reliable and able to meet the demands of major operations, including command and control within fire/rescue services during emergency operations, and meets the needs of other public safety agencies having the need for distribution of information.

**Summary:**

The department utilizes the Douglas County Emergency Communications Center (DGECC) as the Primary PSAP. The DGECC manages the Douglas County Public Safety Radio System. The system is a P25 800 MHz digital simulcast radio system. It utilizes (4) simulcast RF sites; Flair tower, Stratford water tower, Lecompton tower, and Globe tower. Along with the Public Safety Radio System, DGECC dispatches and communicates to LDCFM stations through Mobile Data Computers (MDCs) and station alerting.

Communications will continue to evolve in order to receive and respond to emergency calls. The infrastructure in place when designed, was vetted by MOTOROLA to meet at least 95% coverage. The system currently meets 98% portable and 99% mobile coverage. The system also ties into the State of Kansas communications system, giving the department dependable communications reach beyond the Douglas County border. LDCFM currently utilizes MOTOROLA APX 7000 XE portable radios and MOTOROLA APX 7500 mobile radios to communicate on the Douglas County Public Safety Radio System.

The department utilizes a blend of computers for MDC purposes. These computers communicate with DGECC through the SPILLMAN Mobile application. This allows the sharing of pertinent call related information, as well as the ability to capture more accurate status changes from the units.

Other technology that enhances situational awareness and impacts readiness for emergency call response is PulsePoint, Rip-n-Run emails, and the Everbridge paging software.

**Performance Indicators:**

**CC 9B.1** **A system is in place to ensure communications with portable, mobile, and fixed communications systems in the field. When an area is identified as not being capable of adequate emergency scene communications, such as inside buildings or below grade level, an operational plan is written.**

**Description**

The department utilizes the Douglas County Public Safety Radio System. It is a P25 800 MHz digital simulcast radio system. It utilizes (4) simulcast RF sites: Flair tower, Stratford water tower, Lecompton tower, and Globe tower.

The City of Lawrence utilizes the 2018 International Fire Code, Section 510, Emergency Responder Radio Coverage. By utilizing this section of the adopted Fire Code, the department can identify challenges related to construction type and location. The property owners are a part of this process from design to occupancy and are responsible for maintaining the certification of the in-building technology for amplifying our radio signals.

The department maintains Communication policies; SOP 205.1 Communications, SOP 205.2 Portable Radios, SOP 205.22 Radio Programming Template, and SOP 205.30 Mobile Data Computers (MDC). These policies are reviewed and updated as needed by the chief officer, who manages the program.

**Appraisal**

The department has had effective and efficient field communications capability throughout Douglas County. The department completed a 2020 emergency communications program appraisal, which reviewed the effectiveness of the communications system.

The DGECC and department identified a lack of awareness between agency processes. Through discussions on potential solutions to strengthen the relationship between both agencies, ride outs and shadowing was suggested.

**Plan**

The department will monitor for any reported communication challenges. The department will work alongside both city and county IT to address timely resolutions to technology that is able to connect and utilize SPILLMAN CAD. The department will regularly meet with the director of the Douglas County Emergency Communications Center (DGECC) to continue to identify areas for improvement. The city's contract with the DGECC will be up for renewal soon and the department will advocate for communication recommendations to stay progressive and proactive.

The department will continue to incorporate dispatcher ride outs with the Operations Division. The department will emphasize the need to dedicate time for department employees to shadow in the DGECC. A few department employees have gone through a trial run of this and it has shown to be effective. The department will complete the new portable radio program, replacing the Motorola APX 7000XE portable radios, purchased in 2011, with Motorola APX 6000XE portable radios. The new radios will be assigned to each sworn employee as part of their issued PPE. This is a change from the assignment of portable radios to only the riding positions on apparatus.

**References**

SOP 205.10 Communications
SOP 205.20 Portable Radios
SOP 205.22 Radio Programming Template
SOP 205.30 Mobile Data Computers (MDC)
2022-2026 Adopted Vehicle and Equipment Replacement Plan (VERP)
2020 Emergency Communications Program Appraisal
Ride Out Scheduling Email

9B.2 The emergency communications system is capable of receiving automatic and/or manual early warning and other emergency reporting signals.

**Description**

Private alarm monitoring companies have access to a direct phone line to the DGECC call taker to report alarms. The University of Kansas dispatch center directly monitors their service area building alarms and relays information to DGECC for dispatching.

All fire medical stations in the city and the training facility have an exterior emergency phone available to the public, which enables them to report an emergency to DGECC via a 9-1-1 direct dial line.

**Appraisal**

The direct phone line to the DGECC from private alarm monitoring companies has worked well and is a standard practice that has been used for 15 years.

**Plan**

The direct line to DGECC will continue to be utilized. Call processing times and outcomes will continue to be monitored as it relates to calls that are initiated outside of the 911 system. DGECC will continue investigating the use of text-to-911.

**References**

DGECC Standard Operating Procedures Manual (available on-site)

9B.3 The agency's communications center(s) is/are adequately equipped and designed (e.g., security, telephones, radios, equipment status, alarm devices, computers, address files, dispatching circuits, playback devices, recording systems, printers, consoles, desks, chairs, lighting, and map displays).

**Description**

The DGECC is well designed and equipped. The DGECC is located on the second floor of the Judicial and Law Enforcement Center (LEC). The DGECC is a secure facility and access is restricted to those with key cards.

**Appraisal**

The DGECC believes most of the resources are sufficient for the services it provides, however, the DGECC has worked to improve its physical resources in recent years. Some of the improvements include new chairs and Computer Aided Dispatch (CAD) computers. DGECC recognized that they were experiencing failure of mechanical components within its dispatch consoles and identified a need for replacement. DGECC requested the use of American Rescue Plan Act (ARPA) funds to replace all consoles. It was also recognized that the center lacked community space among dispatchers within the dispatch center.

**Plan**

Beginning in 2023, the DGECC will begin replacement of its ten dispatch consoles. During this replacement, the addition of a quality control space will be included in the center, as well as a community space for dispatcher use.

The DGECC will continue to evaluate future needs. These needs will be addressed through Douglas County budgetary processes.

**References**

DGECC Tour (available on-site)

2023 DCECC Emergency Telephone Fund Budget

2023 ECC Budget

DCECC Photo

DGECC Operating Budget

9B.4 The uninterrupted electrical power supply for the primary communications equipment in the communications center is reliable and tested and has automatic backup capability.

**Description**

The DGECC and communication tower infrastructure has an uninterrupted power supply that is supported by either diesel, natural gas, or propane generators. The LEC has uninterrupted power that is supported by a backup generator that is tested weekly. The DGECC has four communication tower sites managed by DGECC. Kansas Department of Transporation has one communication tower in Douglas County that also supports DGECC activities. Each of the four communication tower sites have uninterrupted power that is supported by backup generator at each tower site. Alarms for these four tower sights are monitored by the DGECC. The tower site backup generators are tested once a year.

**Appraisal**

The DGECC has adequate operational capabilities and protection during electrical power loss. The systems are automatic and have been reliable.

**Plan**

The DGECC will continue to the operational testing and maintenance of all systems as required. The department will continue to perform an annual program appraisal of the communications system.

**References**

DGECC generator maintenance log example (available on-site)

Generator maintenance contract (available on-site)

2020 Emergency Communications Program Appraisal

9B.5 Adequate numbers of fire or emergency telecommunicators, supervisors and management personnel are on duty to handle the anticipated call volume.

**Description**

The DGECC is staffed with 28 fully trained emergency communication dispatchers. The director and deputy-director oversee four operational shifts that are divided into two-day shifts and two-night shifts. Each shift is supported by an on-call position that can be utilized to cover staffing shortages or during special events. A supervisor is on-duty during each shift and will assist in answering calls during times of high volume.

The DGECC has a dedicated training officer that manages and supports continuing education and the on-boarding of new employees.

**Appraisal**

The DGECC is adequately staffed to support the current call volume. The recent addition of the fire medical dispatcher has assisted the DGECC in enhancing fire medical radio coverage and increased consistency. Prior to the full-time fire medical dispatcher, the dispatcher that was assigned to fire medical was also operating as a call taker. This led to the dispatcher's attention being drawn away from emergency operations communication with the department.

**Plan**

The DGECC is in the process of hiring four more dispatchers. This will bring their dispatch staffing levels up to 32 full time employees. The call volume will continue to be evaluated by the DGECC and recommendations for resources will be handled through the county budget process.

**References**

DGECC Fire Medical Standard Operating Procedures Manual (available on-site)

DGECC Website

DGECC Operating Budget

9B.6 A maintenance program is in place with regularly scheduled and documented system tests.

**Description**

The DGECC has a maintenance program that is supported by the Douglas County Sheriff Information Technology (IT) team, third-party radio technicians, and service agreements with vendors. The program manages regular maintenance on the center's systems and equipment. Sheriff's IT provides regular maintenance of software. This includes server maintenance and back-up procedures. When scheduled maintenance occurs, the Sheriff's IT team will communicate via email to the department. Depending on the severity and impact, the department information technology program manager will follow up with department employees to specify if special actions need to be taken (e.g., pause on ESO report imports).

If emergency maintenance is performed, the dispatcher will notify all stations via radio communication.

**Appraisal**

The communication about maintenance on the DGECC systems has worked well. The department has received notifications via email when maintenance is going to be performed. The disconnect that occurs when maintenance is performed has caused issues with department software including ESO and PulsePoint. The emergency maintenance notification via radio communication has worked sufficiently for short term issues.

**Plan**

The department will continue to work with the DGECC to support maintenance on communication systems. The department will continue to evaluate the effectiveness of the communication and work with the DGECC to identify recommendations for improvement.

**References**

Vendor Agreements (available on-site)

DGECC Server Maintenance Email Notification

9B.7 The agency has established time-based performance objectives for alarm handling. These objectives are formally communicated to communications center managers through direct report, contracts, service level agreements and/or memorandums of agreement and are reviewed at least annually to ensure time-based performance objectives are met.

**Description**

The department has established time-based performance objectives for alarm handling for all categories and classifications of risk pertaining to emergency operations. The objectives are documented in SOP 103.20 Response Performance and Outcomes. The DGECC establishes their own time-based performance objectives for their alarm handling process. The department communicates the performance relative to its own benchmarks to aid in process improvement and collaboration. Actual performance relative to the department's established benchmarks has been utilized in the performance review of recent enhanced alarm handling process. The department's participation in the EMS Governance Committee aids in discussions surrounding emergency system performance.

**Appraisal**

In 2018, the department received a strategic recommendation from the Commission on Fire Accreditation International to continue working collaboratively with DGECC to establish time-based performance objectives for alarm answering and alarm processing. The process changes were focused on facilitating faster processing times within the Primary PSAP. In June 2021, DGECC implemented the new call handling process through collaboration with the department. The department has seen fluctuation in response time performance, specifically in alarm handling and turnout time. There is still room for improvement within the process. The department and DGECC's lack of establishing agreed upon time-based performance objectives relative to the alarm handling process have caused barriers when progress goals are discussed.

**Plan**

The department plans to continue its work with the EMS Governance Committee during quarterly meetings to collaborate on establishing time-based performance objectives for alarm answering and alarm processing.

The department will continue to report alarm handling performance to the AHJ, relative to the department's identified benchmarks.

**References**

SOP 103.20 Response Performance and Outcomes

2022 CRASOC

2022 CFAI Annual Compliance Report (Recommendation update related to CC 2C.5)

DGCECC Alarm Handling Benchmark Meeting Minutes

9B.8 Communications training programs for emergency telecommunicators and emergency response personnel ensure adequate, timely, and reliable agency emergency response.

**Description**

The department utilizes SOP 205.10 Communications, as well as regular hands-on training supported through the department's Training Division, to ensure adequate, timely, and reliable responses.

The DGECC has a dedicated training position that supports the internal training programs. The DGECC's trainer position is responsible for managing the continuing education requirements for EMD certification. They are also responsible for overseeing consistency of the in-service training that each new dispatcher is required to complete prior to working a position on the dispatch floor.

The DGECC provides continuing education training and encourages participation in certification opportunities. Dispatchers receive training in Emergency Medical Dispatch (EMD). This training allows dispatchers to more accurately classify calls, collect and forward information pertinent to responding units, and support callers in distress. When staffing allows, DGECC dispatchers are encouraged to participate in ride-outs on department apparatus to develop a better understanding of department needs and operations. Department employees are encouraged to participate in shadowing opportunities with the DGECC dispatchers to enhance the alarm handling process knowledge.

**Appraisal**

The department has identified, through communication with DGECC management, that the training programs provided to new and existing emergency communication dispatchers have been effective. The department's internal training on communications is adequate. This is seen through the training materials and operational activity. The department has not identified this training topic as insufficient.

**Plan**

Both the DGECC and the department will continue to have discussions to identify areas of improvement that can be impacted by training. Both agencies will continue to schedule opportunities for their employees to either ride out with department crews or shadow dispatchers. The DGECC will be purchasing Power FTO. This tracking software will track and collect training hours.

**References**

SOP 205.10 Communications
Ride Out Scheduling Email
Department Training on Motorola Radios
Fire Medical Dispatch Review Process
Fire Medical Training Lesson Plan
DCECC Basic Training Standards

9B.9 The interoperability of the communications system is documented, tested and evaluated. The agency has processes in place to provide for interoperability with other public safety agencies in the field including portable, mobile and fixed communications systems, tools and equipment.

**Description**

The Emergency Communications infrastructure is part of the State of Kansas infrastructure. The center can patch incoming resources to operations channels as needed. The department shares their programming template with mutual aid departments. The center utilizes appropriate technology for receiving and dispatching both emergency and non-emergency calls. The DGECC utilizes Media Works software to record incoming calls and radio traffic. Douglas County GIS supports the mapping software that the SPILLMAN CAD utilizes for addressing and AVL proximity dispatching of units.

The department's SOP 205.22 Radio Programming Template includes the State of Kansas template, providing for interoperability across the State of Kansas. The programing also includes a public safety interop channel that all Douglas County emergency agencies have that facilitates the ability to communicate directly with law enforcement. The programing also includes access to Douglas County emergency managements channel for use during an EOC activation. The department has all mutual aid agencies, primary and operational channels programmed on all radios.

**Appraisal**

DGECC has had the technology to enable area responders to communicate via radio but does not regularly exercise interoperability capabilities. Communications personnel receive training on patching procedures and utilize the procedures as needed. The department radios are dual-band, multi-channel and programming allows users to select the appropriate radio channel as needed. These radios use the Douglas County trunk system and the State of Kansas 800 MHz radio system as well as the Kansas City metro hospital and interoperability channels. Expansion and upgrades to the radio system will require a greater emphasis on interoperability communications training.

**Plan**

The department will continue to evaluate the need for updating programming of portable and mobile radios that will support interoperability. The department will also advocate for opportunities to support interagency radio interoperability exercises.

**References**

SOP 205. 22 Radio Programming Template

9B.10 The dispatch process utilizes a formal and recognized emergency medical dispatch (EMD) system that allows for pre-arrival instructions and adequate triaging of medical calls for service.

**Description**

The DGECC utilizes Priority Dispatch as the emergency medical dispatch (EMD) system. This system enables emergency communication dispatchers to provide valuable pre-arrival instructions to support callers while waiting for emergency resources to arrive on scene. The system is connected to the PulsePoint application that is used by Douglas County community members and the Verified Responder Application used by Douglas County emergency responders.

All fully trained dispatchers within DGECC must maintain current EMD certification.

**Appraisal**

Priority Dispatch has adequately facilitated the use of EMD for pre-arrival instructions to meet the needs of DGECC and the department.

The department has been satisfied with the connectivity between the DGECC systems and PulsePoint.

**Plan**

The department will continue to support the DGECC in the use of the EMD system and the associated training. DGECC will continue to support and require certification in EMD.

**References**

DGCECC Emergency Medical Dispatching (EMD)
DGCECC EMD General Rules
DGCECC EMD ProQA Software Operating Guidelines
DGCECC EMD Quality Assurance

9B.11 The agency has a documented and tested system in place for the notification and recall of off-duty agency personnel and telecommunicators for unplanned, large-scale incidents.

**Description**

The department utilizes the Douglas County supported, Everbridge, to notify and recall off-duty employees for unplanned, large-scale events. This system is also used for emergency notifications to department employees. The paging system connects to department personnel through their mobile phones and comes out as a text message and/or a phone call. An email is also sent out with the pages. Phone calls through Everbridge are only used during emergency staffing situations. The department is implementing the Vector Scheduling staffing software. The department is evaluating the potential for notification and communication through the staffing software.

**Appraisal**

The use of Everbridge has been beneficial for department-wide emergency communication. The system is not beneficial for long messages due to character limitations. The department has found issues with department employees blocking the Everbridge number. This has created a roadblock in the success of the paging system.

**Plan**

Everbridge will continue to be the backbone of the department's notification system for call-back and staffing needs for large, planned events. The department will evaluate how to integrate the Vector Scheduling staffing software in this notification process.

**References**

SOP 109.30 Emergency Call Back
SOP 109.31 Non-Emergency Call Back
Everbridge Email Example
Vector Scheduling (available on-site)
Sample Everbridge Notification Text Messaging
Sample Everbridge Notification E-mail

9B.12 The agency has a documented plan, which is reviewed and tested annually, to ensure continuity in communicating during any partial or total disruption or failure of a communications system or facility.

**Description**

DGECC maintains a stand-alone, backup center. The DGECC utilizes Shawnee County Emergency Communications Center as the back-up public safety answering point (PSAP). The DGECC recently designated the Shawnee County Emergency Communications Center as their new back-up PSAP. The Shawnee County Center utilizes the same phone system which facilitates a seamless transfer of incoming 911 calls. The new back-up PSAP location has not been tested yet.

**Appraisal**

The current plan is less than one year old and has not been fully tested yet. The DGECC feels confident the new plan will be effective.

**Plan**

The department will work with both Douglas County and Shawnee County to identify a regular process of testing and training within the back-up PSAP .

**References**

Reference Email

**CC 9B.13 A formal and documented appraisal is conducted, at least annually, to determine the effectiveness of the emergency communications systems and their impact of meeting the agency's goals and objectives.**

**Description**

The department conducts a formal and documented program appraisal annually that summarizes the program's impacts, outcomes, and effectiveness in the prior year. New goals are outlined in the upcoming year within this document.

**Appraisal**

The department's assigned program manager and supportive staff have been able to complete an annual program appraisal. These appraisals are provided to the AHJ for review, as well as posted on the department's external /internal website for employee review as part of the Annual Compliance Report.

**Plan**

The department will continue to utilize these appraisals to improve performance within the program as well as develop more efficient operational procedures based on the prior year's performance.

**References**

2021 Emergency Communications Program Appraisal

**Criterion 9C: Administrative Support Services and Office Systems**

Administrative support services and general office systems are in place with adequate staff to efficiently and effectively conduct and manage the agency's administrative functions such as organizational planning and assessment, resource coordination, record keeping, reporting, business communications, public interaction, and purchasing.

**Summary:**

The department uses a combination of sworn and civilian personnel to operate the administrative services system. The Administrative Division is currently staffed with a division chief, fire medical analyst, senior administrative specialist, and administrative specialist. The EMS Division includes a division chief, a medical billing supervisor, and two administrative technicians. These administrative staff positions are key components in bridging the gap between executive staff policy decision-making and service delivery at the citizen level. Administrative services support staff handle subpoenas, record request, payroll, purchasing, EMS billing, and personnel functions with support from city departments such as Legal Services, Finance, IT and Human Resources.

The department offers a variety of resources to administrative and operational employees to support their clerical needs. The department's lean team is often included in city-wide teams focusing on strategic planning, business systems implementation, as well as a multitude of other activities.

**Performance indicators:**

**CC 9C.1 The administrative support services are appropriate for the agency's size, function, complexity, and mission, and are adequately managed.**

**Description**

The department utilizes other city departments for support related to Finance, Human Resources, and Information Technology. These support departments have identified Internal Service Fees to track support service expenses for all other departments. The support from these departments is managed through different management channels throughout the city.

The department's Administrative Division provides most of the administrative support for the department. The division is staffed with a division chief of administration (sworn), fire medical data analyst (civilian), senior administrative specialist (civilian), and an administrative specialist (civilian). The department's EMS Division is comprised of three funded administrative support positions one medical billing supervisor (civilian), two medical billing technicians (civilian), and a division chief of EMS (sworn). The division chief of administration is currently vacant as the result of a recent resignation. The fire medical data analyst is currently performing in the interim position.

The department's administrative staff is relied on heavily for human resource functions (worker's compensation, payroll action forms, recruitment, hiring, annual performance evaluations, annual physical evaluation scheduling, etc.), finance (accounts payable, accounts receivable, budget panning), information technology support / projects (business systems implementation), records requests (fire, hazardous materials, emergency medical services), burn permits, and strategic plan (City of Lawrence) creation / implementation.

**Appraisal**

Through the efforts of centralizing services, the city has been unable to effectively service needs through administrative support.

Administrative support for the department's needs is unbalanced and task saturated. The department has requested additional administrative support employees during previous budget cycles, but these positions have not been granted.

**Plan**

Through the budget request process, the department will continue to communicate the need for more resources within the Administrative Division.

**References**

SOP 102.10 Organizational Chart

9C.2 Public reception, public information, and electronic communications components support the customer service needs of the agency.

**Description**

The department's administrative facility is centrally located within the City of Lawrence, and near the campus of the University of Kansas. The administrative facility has a reception area that is open to the public during regular business hours and allows the public to meet with department staff, pay medical bills, request records, and conduct most business with the department in one location. Outlying fire medical stations also have a designated public entrance and reception area.

The department utilizes multiple pathways to communicate with the community. The City of Lawrence has a website, managed by the department's Administrative Division to display department updates, forms, and miscellaneous information. Facebook is used for public engagement on a more informal level.

The department's 2021-2026 Strategic Plan identifies external communications as a goal.

**Appraisal**

Based on external stakeholder input provided to the department during the 2021-2026 Strategic Plan sessions, public perception of the department is generally positive. However, external communication was identified as an area where the department needs improvement.

The department's external communication has been lacking because of the limited staff in the Administrative Division.

**Plan**

With the department's newly established PIO group, the department plans on expanding its reach to the community via additional social media outlets. The department will create a task force to address the external communications goal. To address the goal, the task force will complete the objectives through the identified critical tasks. Through the budget request process, the department will continue to communicate the need for more resources.

**References**

2021-2026 Lawrence-Douglas County Fire Medical Strategic Plan (page 13)

LDCFM Facebook Page

City of Lawrence LDCFM Webpage

**CC 9C.3** **Organizational documents, forms, standard operating procedures or general guidelines, and manuals are reviewed at least every three years and updated as needed for all agency programs.**

**Description**

The Administrative Division uses an Excel sheet as a dashboard to track and manage the SOP cycle. The department uses SOP 104.02 Standard Operating Procedures (SOPs) and Policies Life Cycle to document the SOP life cycle.

The department utilizes a shared folder system to house and organize documents. The Administrative Division has a manual to guide administrative functions. This document is updated as necessary.

**Appraisal**

The department has discussed the need for updated department related forms during command staff meetings. During this work session, forms were identified utilizing a priority schedule. During this process, forms that were antiquated / no longer being utilized were then decommissioned.

The review and update process for SOPs was revised in 2020 to become more regimented and streamlined. The command staff is struggling to keep up with the demand related to SOP review and updates. The department has identified a plethora of SOPs that do not accurately reflect reality. The large lift to overhaul the SOPs was delayed during the department's time without a permanent fire chief in 2022.

**Plan**

The command staff will perform extensive reviews of the SOPs and update as necessary to reflect accurate procedures and current policies. The command staff will review the SOP life cycle process and evaluate potential solutions for better managing SOP review and updates. The command staff will evaluate the effectiveness of the SOP management assignments to ensure workload is manageable.

The department will continue to analyze the current forms to eliminate ones that are no longer being utilized, validate / update existing information, as well as implement new forms.

**References**

SOP 104.02 Standard Operating Procedures (SOPs) and Policies Life Cycle
SOP Dashboard Intranet Page
Administrative Division SOP Dashboard

9C.4 Public records are maintained, available and disposed of in accordance with local, state/provincial and federal legal mandates. Record retention and destruction are documented in accordance with an adopted procedure.

**Description**

The department's practice is consistent and in accordance with Kansas Statute Annotated (K.S.A.) 75-3504. The department follows a retention schedule documenting the records management practices for retention and destruction. The city's Clerk's Office oversees record retention.

**Appraisal**

There have been no legal challenges to the adopted practices identified within the records management schedule adopted by the department within the past five years.

**Plan**

The department will continue to follow the practices adopted within the guiding document following the statute. The division chief of administration will communicate with the city clerk annually to ensure the department stays current to any changes in organizational practices.

**References**

Guidance for Kansas Statute Annotated (K.S.A.) 75-3504 (available on-site)
Fire Medical Records Management Guide
City of Lawrence Records-Management Policy No. 135

**Criterion 9D: Information Technology**

Information technology resources are in place with adequate staff to efficiently and effectively conduct and manage the agency's information technology functions, such as hardware and software implementation and maintenance and data analysis.

**Summary:**

Information technology services are primarily provided by the city's Information Technology (IT) Department. The department has an information technology program that has a designated program manager (chief officer) and information technology specialists that are funded by incentives. This team works on operational information technology issues that arise, as well as supports IT functions through department projects (I.e., report management system implementation). The department's Administrative Division also participates in IT governance teams and is involved with city-wide IT projects (I.e., enterprise resource management system implementation). The Administrative Division acts as the liaison between the city's IT team and the department's IT team.

**Performance indicators:**

**CC 9D.1 Hardware, software and IT personnel are <u>appropriate for the agency's size, function, complexity and mission.</u>**

**Description**

The City of Lawrence's IT Department provides appropriate hardware and software at the staff level, however; IT personnel is staffed at levels to do basic support. The IT department does have vacant positions, so other city departments are leveraging their own staff to supplement technology within their areas. The IT Governance Committee meetings include the Program and Risk Committee. The department's Administrative Division also acts as internal IT support and a liaison, when needed. Examples of this include maintaining working relationships with various system support teams such as PulsePoint, the geographical information system (GIS) city and ESRI support team, and the ESO record management system helpdesk and the implementation manager.

Updates are handled at the city level when related to city-wide systems. When the department has IT-related updates to department systems, the IT specialists work with the IT program manager to coordinate updates. If IT support is needed from vendors to update equipment (I.e., cardiac monitors), the department coordinates the scheduling of onsite support and equipment-related logistics.

**Appraisal**

In recent years, the city's IT Department, has gone through a transformation to become more of a support service for all city departments. To accomplish this, the IT Department has integrated its employees into more of a project management role to be proactive on IT needs and support. The department utilized this through the ESO implementation in 2020. City-wide initiatives, relative to IT governance have been developed informally and communicated through IT governance and risk management meetings. There has been no formalized standard IT policy to govern city-wide technology implementations. Therefore, technology purchases and technology support have been left up to each department, for the most part. The IT Department has taken the lead on many initiatives on standardization

and support, but due to being understaffed they had to focus strictly on critical operations only.

**Plan**

With the recent establishment of IT Governance and the start of new city-wide Technology Policies and Procedures (including a new purchasing policy), we expect a significant improvement in the next 12 months for standardization, centralization, accurate budget spending, and improved support. The department will continue to be present and active in the IT Governance and program and risk committee meetings.

The department's Administrative Division will continue working with the department's IT program manager and technology specialists to incorporate city-level IT employees in department IT-related projects. The Administrative Division will continue to work with the IT program manager to ensure communication with city IT is maintained and continues to be consistent.

**References**

IT Governance Meeting Minutes
IT Governance Process-Teams
2021 Technology Program Appraisal

9D.2 Software systems are integrated, and policies are in place addressing data governance, data accuracy and data analysis.

**Description**

While the City of Lawrence has begun establishing formal city-wide IT Governance, there are currently no policies in place addressing data governance, data accuracy, or data analysis for city-wide initiatives. The team operates within a Microsoft Teams page.

The department utilizes SOP 103.20 Response Performance and Outcomes, SOP 103.21 Response Performance and Outcomes Baseline, SOP 103.22 Response Performance and Outcomes Benchmark to guide data governance, data accuracy, and data analysis. The Administrative Division uses the SOPs when reviewing and presenting response performance data. Data entered for incident reports is guided by the ESO Workflow document (LDCFM ESO Packet) to define required fields. Some fields within the reporting system are able to be marked as "required". The workflow document has supplemented this to capture department-required data. Through the workflow document, a quality control system is in place to ensure accuracy.

**Appraisal**

Historically, each department has made decisions regarding selection systems largely independent of one another. This has created a complex environment without many systems being integrated.

The department's use of SOPs and workflow documents when guiding data entry and data analytics has been sufficient. The documents have provided a standard for the department to work with. The quality control system that has been utilized has been adequate for report completion.

**Plan**

The IT Governance will establish policies and strategies for system selection and integration going forward.

The department will continue using data governing, data accuracy, and data analysis related SOPs and workflow documents to communicate data requirements and standards throughout the organization.

**References**

Programs and Risk Committee Teams Site (available on-site)

SOP 103.20 Response Performance and Outcomes

SOP 103.21 Response Performance and Outcomes Baseline Appendix A

SOP 103.22 Response Performance and Outcomes Benchmark Appendix B

LDCFM ESO Fire Training Manual

9D.3 A comprehensive technology plan is in place to update, evaluate and procure hardware and software.

**Description**

The City of Lawrence does not have a comprehensive technology plan. However, the department annually appraises the technology program and uses the appraisal to evaluate program effectiveness and guide future decision-making. The program appraisal is the guiding document for department-wide technology projects and vision. Continuity between the city and the department related to software and hardware is managed by the IT Governance Committee. This newly established team focuses on city-wide initiatives to increase consistency and standardization.

**Appraisal**

Historically, city departments have been selecting systems based upon a best of breed mindset. This has led to a lack of standardization across all city departments.

The department's technology has worked well and has been fundamentally supported by the city's IT Department. Previously, it has been the department's responsibility to evaluate and procure software and hardware. This practice has created inefficiencies and delays in software implementation.

**Plan**

The city's IT Department will utilize the newly established IT Governance Committee, which contains representatives from each city department, to help implement a comprehensive technology plan. This governance, along with a newly hired Project Management Office Manager (PMO) will work towards evaluation and procuring better hardware and software.

The department will continue to participate in the IT Governance meetings to help create a comprehensive technology plan.

**References**

Programs and Risk Committee Teams Site (available on-site)

9D.4 A cybersecurity policy is in place to protect the integrity of the infrastructure, including networks, programs and devices, from unauthorized access that could disrupt essential services.

**Description**

The city's IT Department has a suite of written procedures concerning cyber security, however; these have currently not been implemented yet. In addition to documentation, the IT Department has a multi-level approach that addresses cybersecurity from eight different perspectives. They also utilize a number of less formal processes and practices that are communicated to city employees on a regular basis.

**Appraisal**

The IT Department has had no successful cybersecurity attacks, as they have all been prevented before causing any damage. The environment has been very dynamic over the last two years and has presented the IT Department with several new challenges that required adaptation. The city has proved their commitment to cybersecurity by creating a cybersecurity manager position and approving funds for a new endpoint security system, and cybersecurity intern position as well as supporting the implementation of any best practices that are brought to our attention.

**Plan**

The IT Department plans to leverage the programs and risk committee under IT Governance to help further develop the existing policy suite, which includes electronic information risk and security policy. Access control policy, password policy, SCADA security, third party access, and several others accessible to anyone who has support of technology.

The department will continue to work with the IT Department to help create and implement these policies to ensure.

**References**

Information Technology Policy

SOP 120.140 Electronic Information Risk & Security