Community-Driven Strategic Plan
and
Standards of Cover

LAWRENCE-DOUGLAS COUNTY FIRE MEDICAL

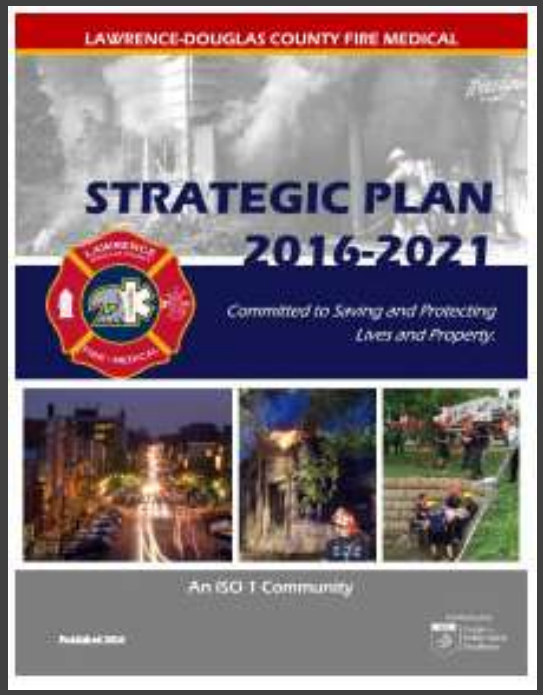
"COMMITTED TO SAVING AND PROTECTING LIVES AND PROPERTY"

2016-2021 Strategic Plan
Facilitated by CPSE's Technical Advisor Program

Community-Driven

Internal and External Stakeholders

- Prioritization of Services
- Community Expectations
- Areas of Concern
- SWOT Analysis
- Mission, Vision, Values
- Strategic Goals
- Updated Spring of 2018



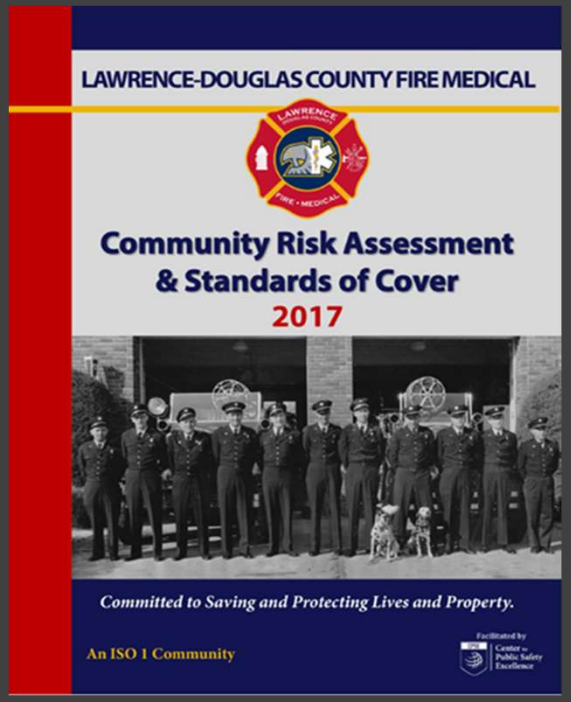
Top 5 (of 48) Community Expectations; Verbatim

1. Rapid response to emergency fire and medical calls in all geographic areas of the community. Respond to medical emergencies and fire calls within response times. Quick response times.
2. Highly and well-trained/certified personnel who are well practiced. Employ professional people current on their certification. Expanding the knowledge needed to address situations as required.
3. Developing community educational opportunities to increase prevention and preparedness. Provide education presentations to area schools, businesses, and other city departments.
4. Preparedness in a heighted state of emergency. Be ready for disasters and other large community emergencies.
5. Up-to-date technology to provide efficient and effective outcomes.

Top 5 (of 53) Community Concerns; Verbatim

1. No concerns. Currently pleased with the fire department.
2. The funding context for city services will be difficult in the coming years. Concerned that we will have the fiscal ability to properly support and equip our department.
3. At times, the code enforcement seems too much by the book and not about what will actually provide a safer environment. The fire department over-regulates fire codes. Sometimes this is a barrier to reasonable growth and building.
4. In a growing community, I am concerned with their ability to continue to provide the fast responses they currently provide- will they be spread too thin?
5. Not enough funding/focus on community education, fire prevention, and risk reduction programs.

What is the Community Risk Assessment and Standards of Cover?



The Community Risk Assessment

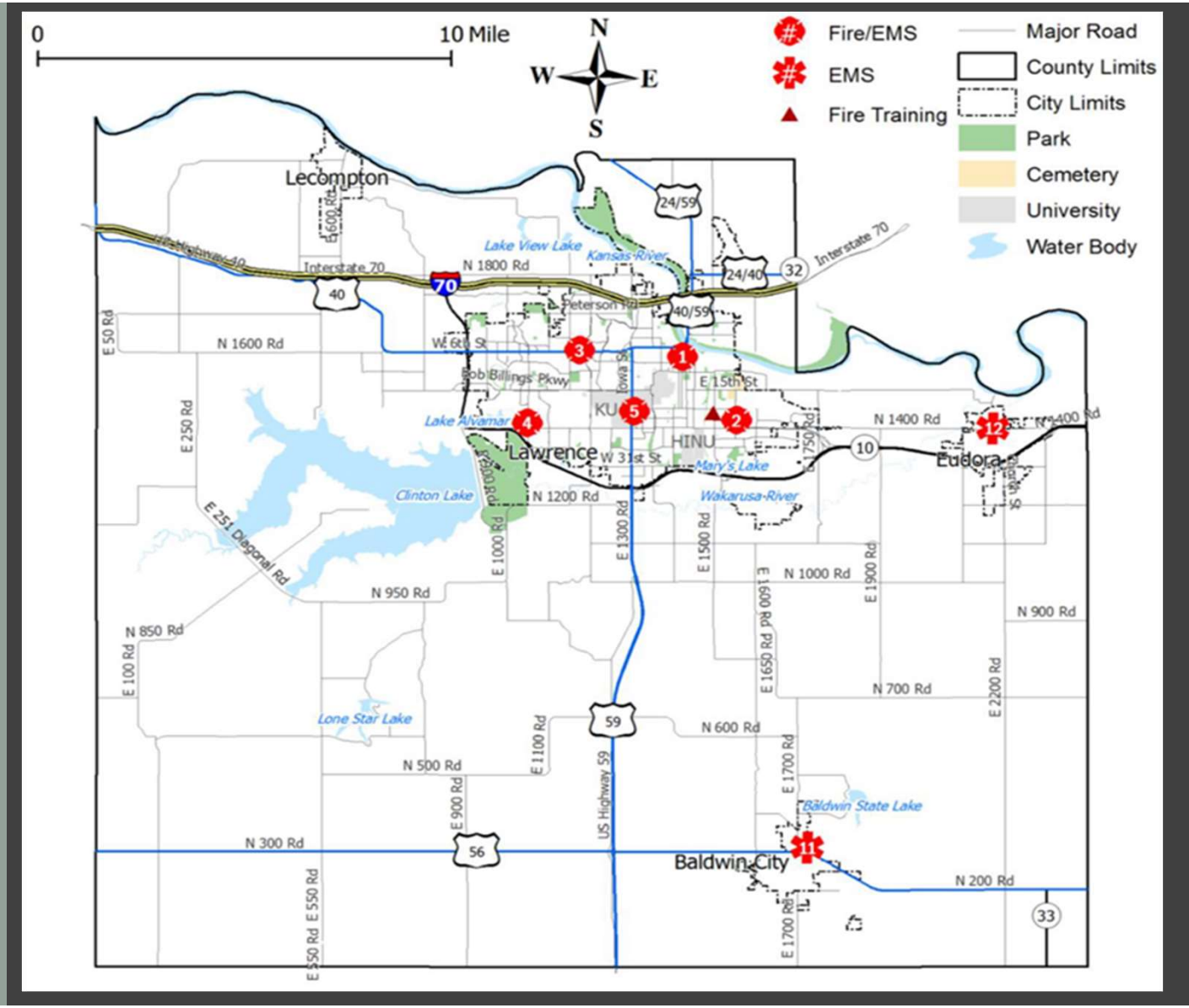
- A study of fire and non-fire hazards and risks unique to Lawrence and Douglas County.
- Recognizes pertinent facts which influence risk in order develop the Standards of Cover.

The Standards of Cover (SOC)

- The policy standards for the deployment coverage of fire medical resources for the City of Lawrence and Douglas County.
- The SOC standards are reflective of the hazards and risks identified in the community risk assessment.

Fire Medical core operational programs

- **Fire Suppression** (City of Lawrence and Grant Township)
- **Emergency Medical Services** (Douglas County)
- **Technical Rescue** (Douglas County)
- **Hazardous Materials** (Douglas County)



What Fire Medical is protecting

People

- City of Lawrence population (2017): **99,496** within 35 square miles (Lawrence Planning). American Community Survey data was not available for 2017.
- Douglas County population including Lawrence (2017): **120,793** in 475 square miles (American Community Survey)

Property and Environment

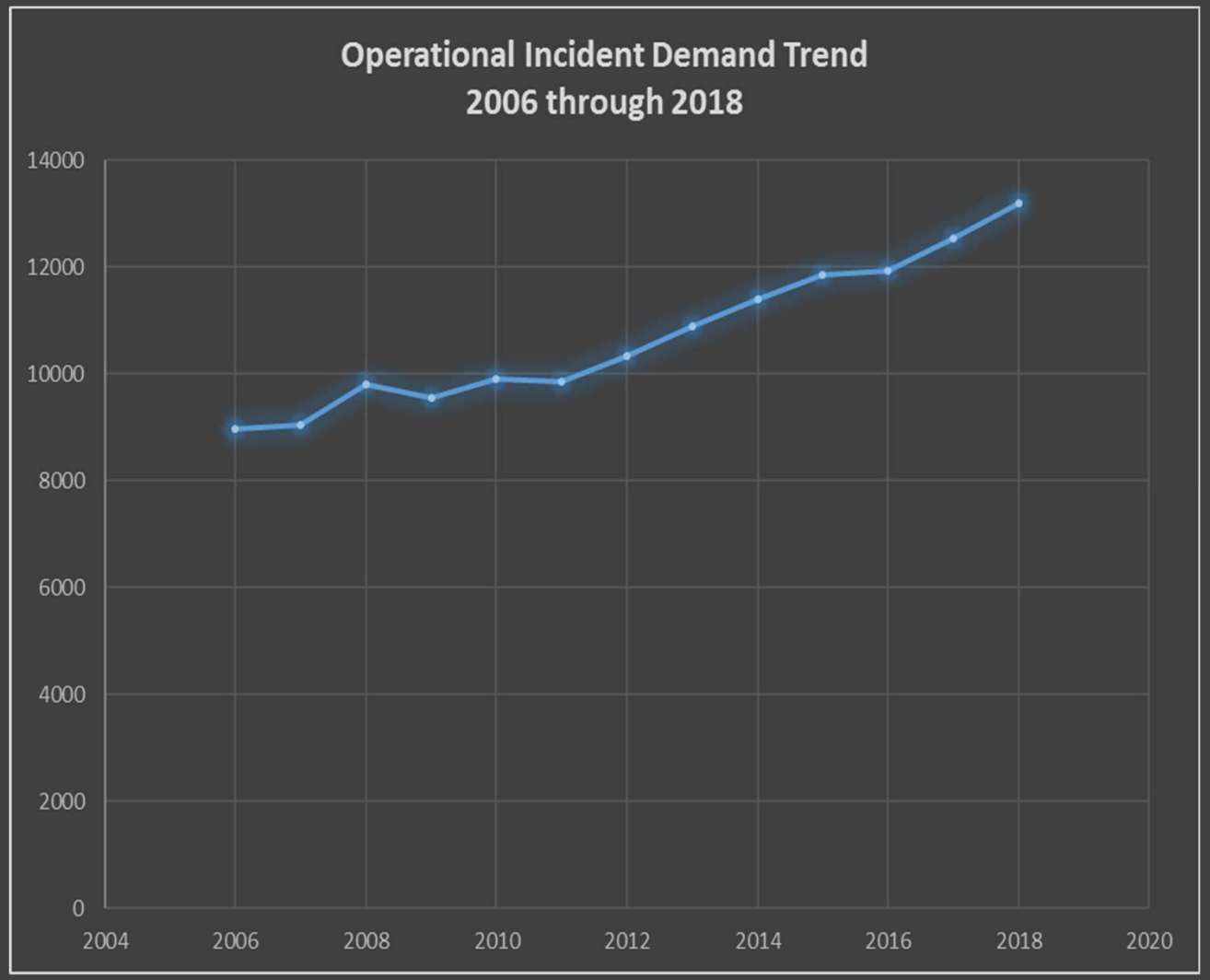
- City of Lawrence appraised value of land and buildings (2018): **$1,774,192,940** (Douglas County)
- City of Lawrence parks: 3,953 acres
- Rivers and Lake: Kansas River, Wakarusa River, and Clinton Lake
- Preservation Land in Lawrence: 153 acres

Incident Demand 2006 - 2018

2006 through 2017 represents an increase of **39.99%** in call volume.

Over this time, the department has reduced its workforce within the City of Lawrence, but the department budget has increased over time towards maintaining quality service county-wide.

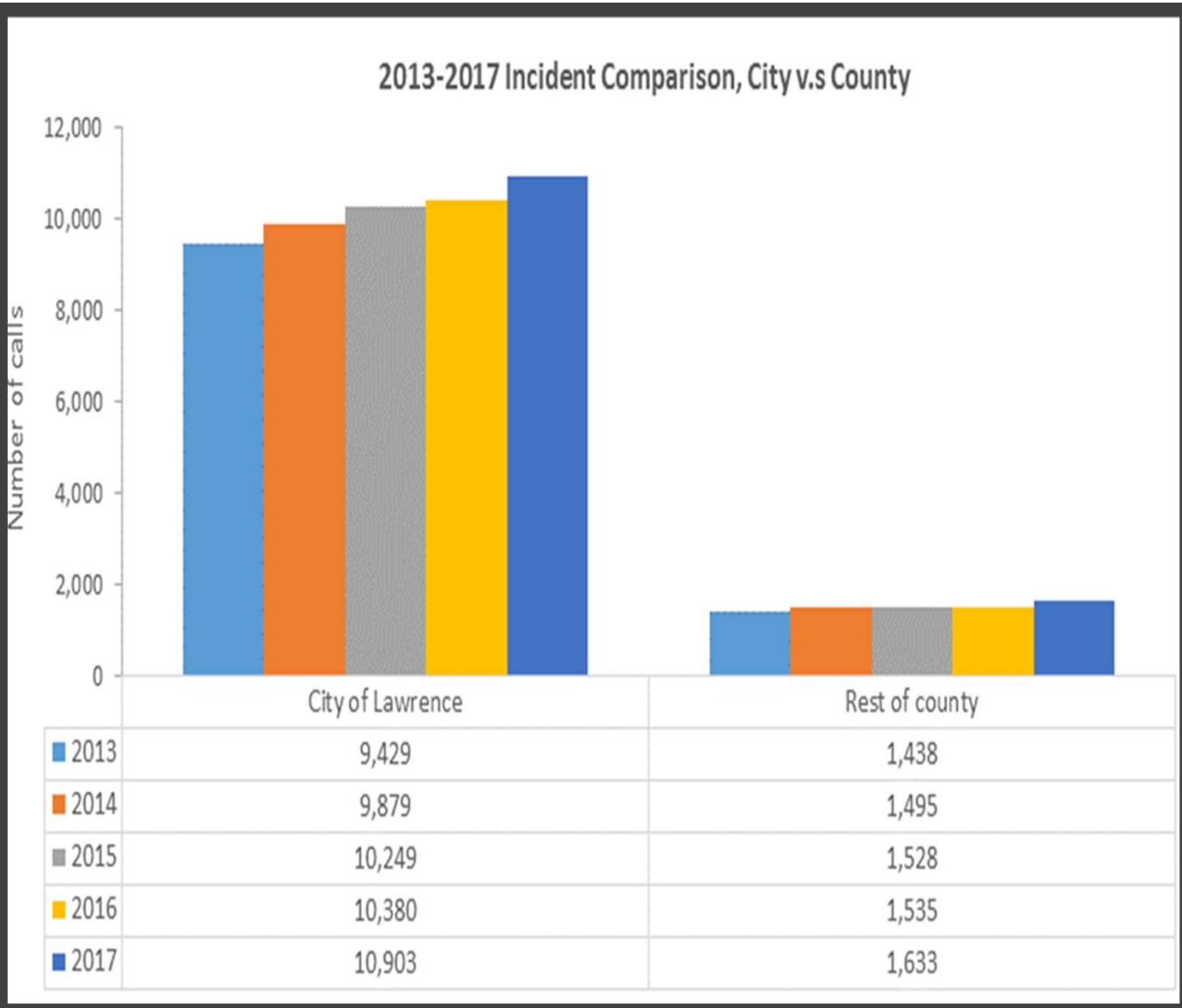
2018 is projected to add an additional **5%** in emergency incidents.



Where incidents occurred from 2013 - 2017

87% of incidents occurred in the City of Lawrence.

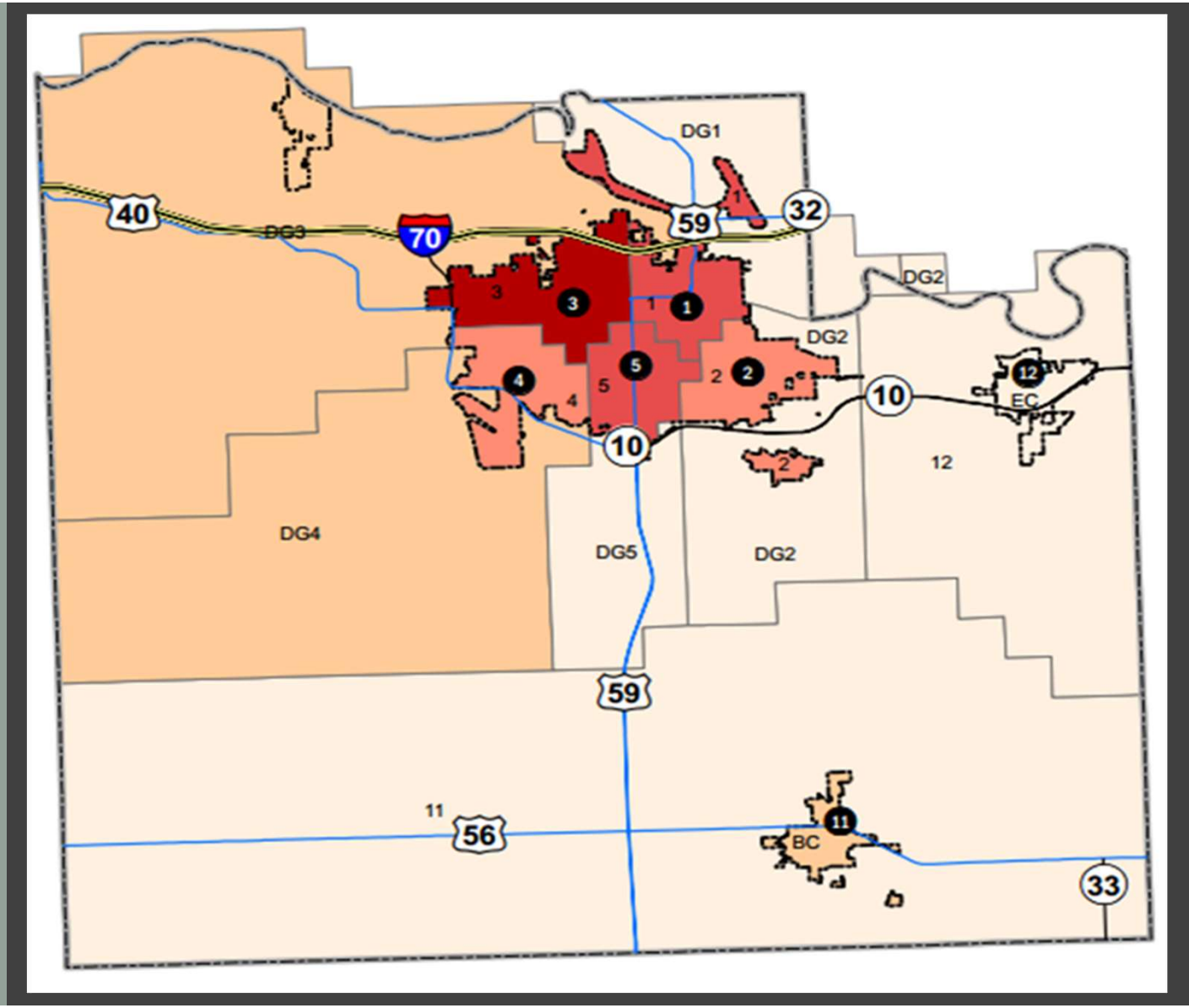
13% of incidents occurred in the rest of the County.



	City of Lawrence	Rest of county
2013	9,429	1,438
2014	9,879	1,495
2015	10,249	1,528
2016	10,380	1,535
2017	10,903	1,633

Where calls have increased between 2013 - 2017

Zone	Count 2013	Count 2017	Difference	Percent Change
1	3492	3823	331	9.5%
11	149	174	25	16.8%
12	72	85	13	18.1%
2	1211	1298	87	7.2%
3	1601	2221	620	38.7%
4	925	983	58	6.3%
5	2200	2578	378	17.2%
BC	371	399	28	7.5%
DG1	63	86	23	36.5%
DG2	68	72	4	5.9%
DG3	168	209	41	24.4%
DG4	67	103	36	53.7%
DG5	50	61	11	22.0%
EC	434	444	10	2.3%



High Risk Event Outcomes 2013-2017

High Risk Fire (Structure Fires)

- Confined Flame Spread (NFIRS)
  - Object of origin 7.9%
  - Room of origin 34.7%
  - Floor of origin 10.7%
  - Building of origin 37.8%
  - Beyond the building of origin 8.9%
  - N=360

High Risk EMS (Cardiac Arrest)

- Cardiac Arrest with return of spontaneous circulation
  - **31.42**%
  - Represents all cardiac arrests
    - Not using Utstein criteria.

Time is CRITICAL

Whether it is a fire, emergency medical call, rescue, or hazardous materials release, time is critical to rapidly changing factors associated with incident mitigation and its outcome.

The **OUTCOMES** of these events correlate to the condition of the hazard or illness upon the arrival of fire medical.

- Strategies, tactics, and tasks for mitigation are correlated to conditions upon arrival in an organized incident action plan.
- Numerous factors affect conditions upon arrival, some of them are controllable, others are not.

High Risk Fire
"Structure Fire"

2 fire trucks (8 personnel)
2 Ambulances (4 personnel)
1 Rescue (3 personnel)
1 Chief (1 person)

Effective Response Force

The **minimum** amount of staffing and equipment that must reach a specific emergency zone location within a maximum prescribed total response time and is capable of initial fire suppression, EMS, or other hazard mitigation

Table 19 Critical Tasks - High Risk Fire

Common Critical Tasks for High-Risk (Structure) Fire	
Task	**Firefighters**
Attack Line	2
Backup Line	2
Search and Rescue	2
Water Supply	1-2
Ventilation	2
RIT Team	4
Engineer	1
Command/Safety	1-2
Total	**16**

Total response time quality methodology

Response time quality is measured at the **90th percentile of the data set**.

- Benchmarks are established on the industry consensus standards and internal studies; National Fire Protection Association (NFPA), station turnout study.
- *NFPA 1221 Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*
- *NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*

Response time
it starts with 9 -1- 1

Alarm handling
- Starts when the dispatcher answers 9-1-1 and end when fire medical units are dispatched.
  - (Benchmark 60 seconds; 90% of the time)

Turn out
- Starts when fire medical units are notified and ends when they are responding.
  - (Benchmark 90 seconds; 90 % of the time)

Travel time
- Starts when fire medical units are responding and ends when units arrive on scene.
  - (Benchmark 4 minutes in urban zones, 10 minutes in rural zones; 90% of the time)

Total response time
- The sum of alarm handling, turn out, and travel time.
  - (Benchmark 6:30 in urban, 12:30 in rural zones; 90% of the time)

Response Time Benchmarks urban areas

Total Response Time Components	Urban Benchmark
Alarm Handling	1:00
Turn out	1:30
Travel time 1st unit (distribution)	4:00
Total Response Time 1st Unit	6:30
Travel time ERF (concentration)	8:00
Total Response Time ERF	10:30

Urban benchmarks are applied in urban density planning zones:

- City of Lawrence
- City of Eudora
- Baldwin City

Benchmarks are based on consensus standards, such as the National Fire Protection Association (NFPA) and an internal study.

Turn out benchmarks are based on an internal study, as documented in the 2017 SOC.

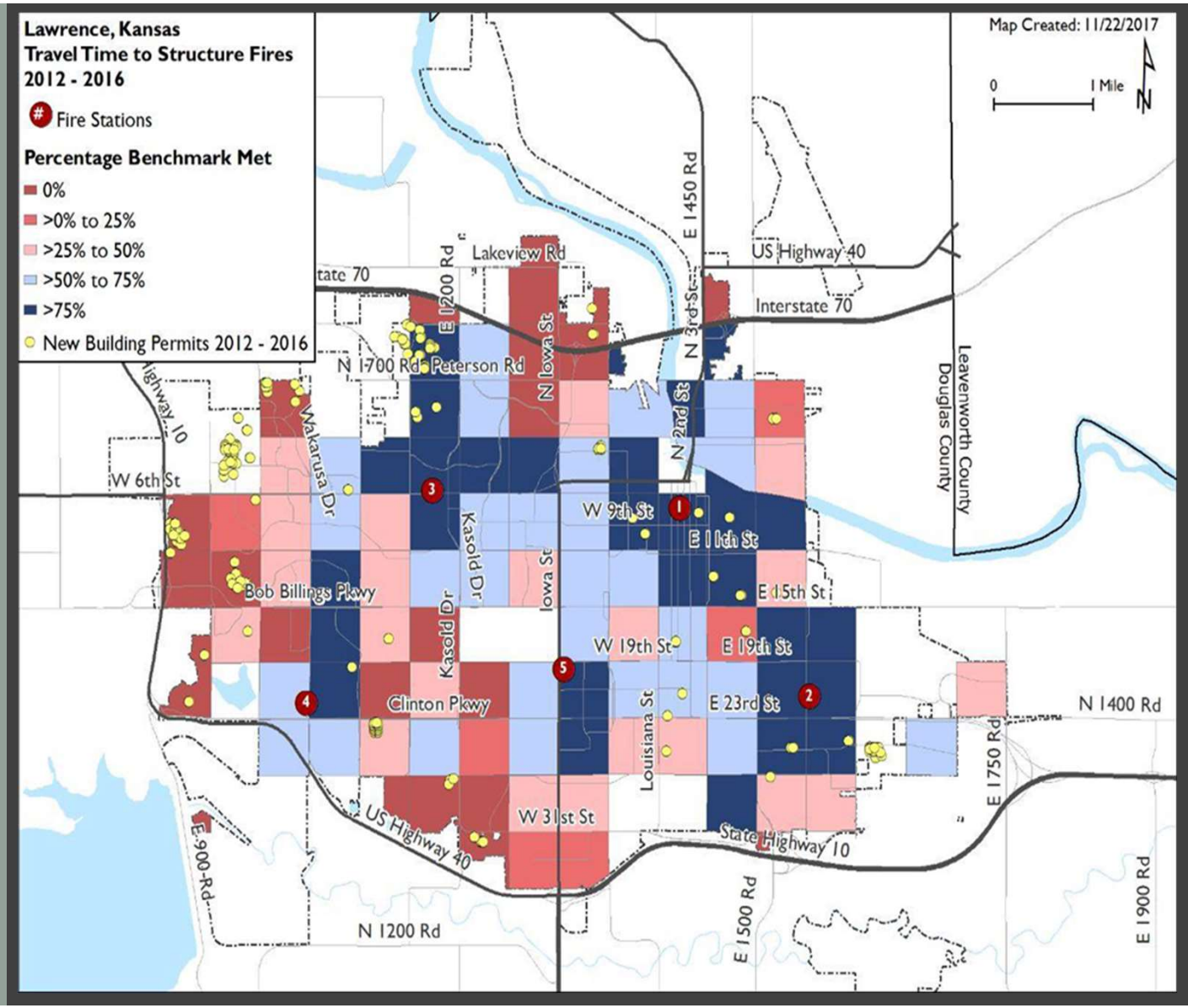
Response time actuals: structure fires (urban)

Structure Fire Response Times	Benchmark	2017	Performance Trend SOC-SOC	2012-2016 SOC	2008-2011 SOC
Alarm Handling	1:00	2:37	0:52 slower	2:36	1:54
Turn-out	1:30	1:37	0:48 faster	1:38	2:19
Travel 1st Unit	4:00	5:59	1:09 slower	5:41	4:37
Travel Effective Response Force	8:00	10:52	3:02 slower	10:41	7:35
Total Response Time 1st Unit	6:30	8:58	1:05 slower	8:31	7:36
Total Response Time Effective Response Force	10:30	14:21	2:34 slower	13:05	10:43

Response time actuals: EMS (urban)

EMS Response Times	Benchmark	2017	Performance Trend SOC-SOC	2012-2016 SOC	2008-2011 SOC
Alarm Handling	1:00	2:46	0:41 faster	2:54	3:21
Turn-out	1:30	1:30	0:31 faster	1:37	2:01
Travel 1st Unit	4:00	5:49	2:07 slower	6:35	4:21
Travel Effective Response Force	8:00	6:52	2:33 slower	7:46	5:07
Total Response Time 1st Unit	6:30	9:39	2:19 slower	10:20	7:58
Total Response Time Effective Response Force	10:30	10:30	2:33 slower	11:07	8:33

Where we meeting our benchmarks – and where we are Not



Reliability of benchmark response time by planning zone

Reliability of Structure Fire Benchmark Travel Times by Planning Zone

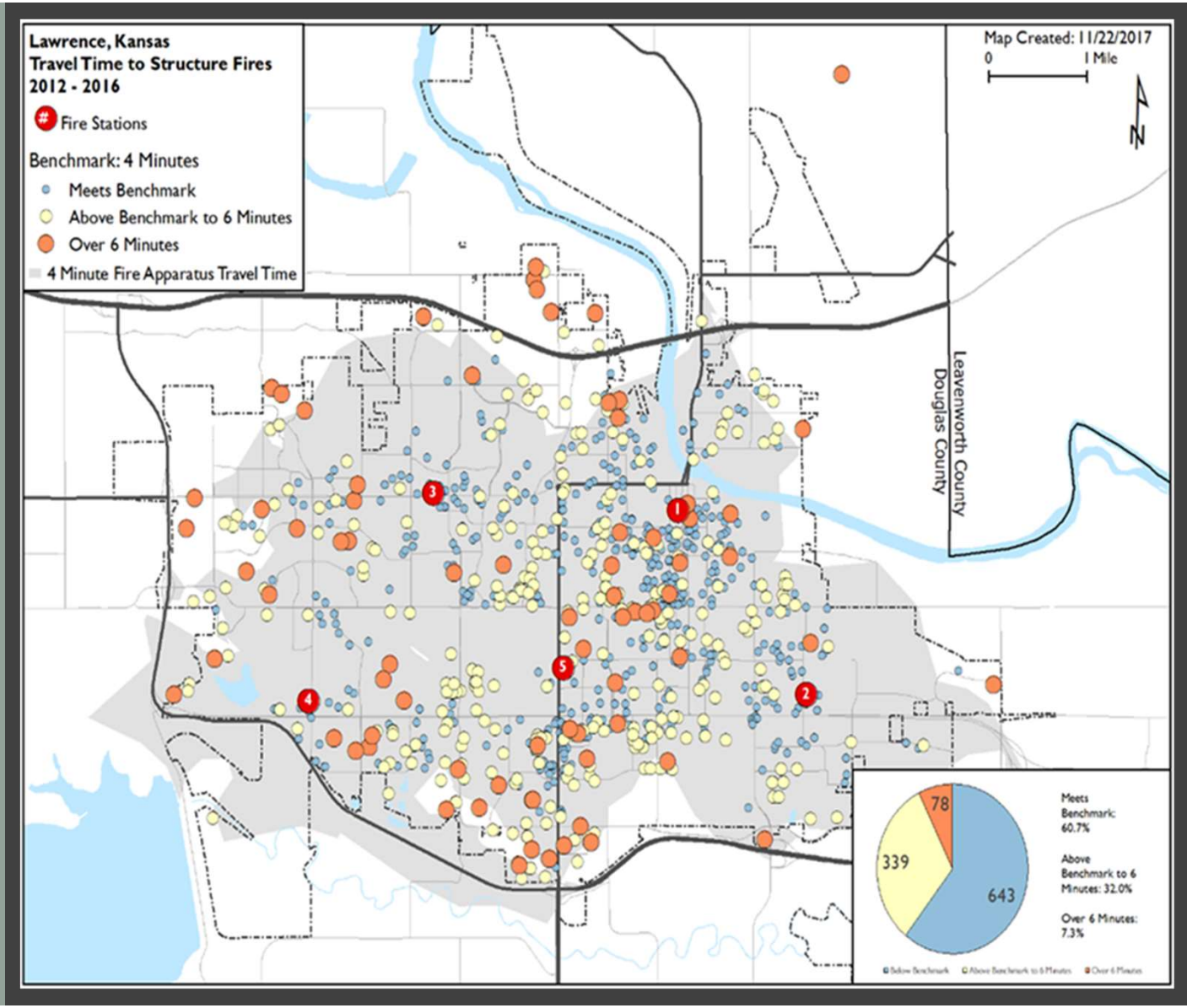
Structure Fires	Planning Zone 1	Planning Zone 2	Planning Zone 3	Planning Zone 4	Planning Zone 5	City-wide
Reliability 2013-2017	72% (-1%) N=297	59% (-2%) N=114	52% (even) N=145	46% (-1%) N=94	50% (-6%) N=314	58% (-3%) N=964

Travel time on structure fires between 2012 and 2016

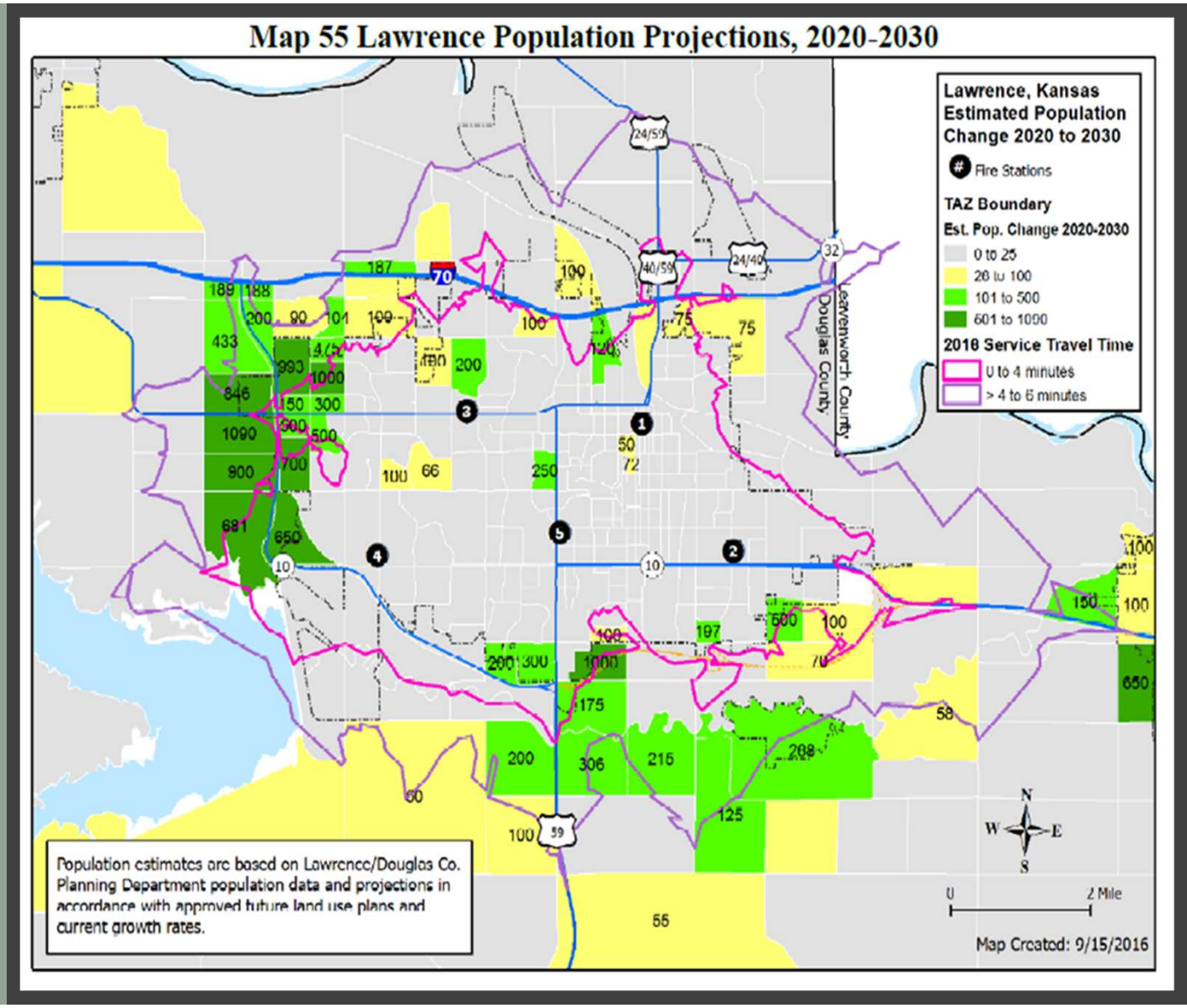
A fire truck's travel time arrived on scene in **4 minutes (benchmark) or faster, 60.7%** of the time.

A fire truck's travel time arrived on scene between **4 minutes and 6 minutes, 32.0%** of the time.

A fire truck's travel time arrived on scene in **6 minutes or longer, 7.3%** of the time.



Lawrence Population Projections 2020-2030



2018 Accreditation Report Strategic Recommendations From the CFAI

CC 2C.5 It is recommended that the department continue working collaboratively with DCECC to establish time-based performance objectives for alarm answering and alarm processing.

CC 2C.5 It is recommended that the department continue its ongoing efforts to add a second line operations chief officer that is included in daily minimum staff to manage city-wide emergency resources.

CC 2C.5 It is recommended that the department continue its ongoing efforts to replace the rescue unit with three members to a rescue-engine with four members.

CC 2C.5 It is recommended that the department continue its ongoing efforts to add a station in the northwest area of the city.

2018 Accreditation Report Strategic Recommendations From the CFAI cont.

CC 3D.2 and CC 9C.1 It is recommended that the department conduct a staffing review of the administrative division to ensure adequate staffing is available to meet the current and future demands of the department.

CC 5A.3 It is recommended that the prevention division conduct an evaluation of current human power to determine if additional full-time employee(s) are needed to effectively mitigate required duties.

2018 Accreditation Report Strategic Recommendations From the CFAI cont.

CC 8C.1 It is recommended that the department continue their efforts in capital planning to identify a larger training center, drill field, and additional classroom spaces.

CC 8C.2 It is recommended that the department continue the current process of plan development to ensure consistent technical rescue education delivery.

CC 8C.8 It is recommended that the process utilized to evaluate training material be formalized and documented.

2018 Accreditation Report Recommendations From the CFAI

5D.3 It is recommended that the department secure all plan agreements in writing

5D.7 It is recommended that the department continue to ensure adequate management, review, and updating of the continuity of operations plan.

5F.8 It is recommended that the current program for identification of distribution of automatic external defibrillation (AED) units throughout the City of Lawrence be expanded to include Douglas County.

2018 Accreditation Report Recommendations From the CFAI

6D.2 It is recommended that the department work with the public works division to obtain a larger repair facility that is capable of providing sufficient space.

6F.2 It is recommended that the department consider the acquirement of a second set of firefighter turnout gear for those situations when the primary set is damaged, contaminated, or out for advanced cleaning.

2018 Accreditation Report Recommendations From the CFAI cont.

7D.6 It is recommended that the department develop a formal leadership development program.

8B.4 It is recommended that the department institute a training evaluation system to capture student feedback for fire training offerings.

10A.4 It is recommended that all agreements have a conflict resolution process formalized.

10B.2 It is recommended the department evaluate the cooperation agreement between the City of Lawrence and Douglas County for providing ambulance, hazardous materials, technical rescue, and emergency communications services.

Annual Compliance Report (ACR)

Annually, the department is required to publish an ACR and submit it for review to CFAI.

- The ACR documents organizational progression towards CFAI recommendations which are validated by exhibits.
- The ACR includes organizational changes, the most recent years performance related to response time by risk category and classification.
- The ACR documents all annual organizational program appraisals.
- The ACR is due to the CFAI in July of every year.

Questions