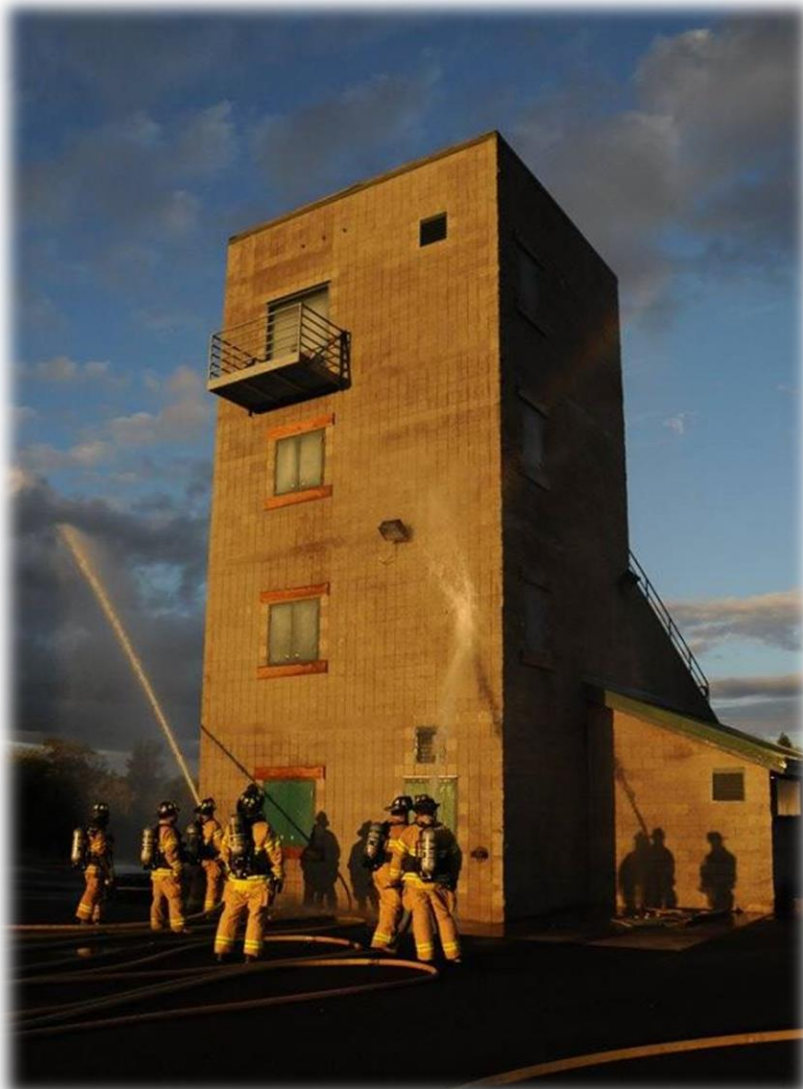


2020

Polk County  
Fire District No.1



# Polk County Fire District No.1



## STANDARD OF COVER

Adopted by Polk County Fire District No.1 Board of Directors  
October 8, 2020

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# PURPOSE

The purpose of this Standard of Coverage for Community Emergency Service Response document is to provide the following for our community:

- ❖ A tool for defining baseline emergency response performance standards.
- ❖ A descriptive tool for validating station location decisions.
- ❖ A management tool for determining apparatus type, staffing level, and staffing patterns.
- ❖ A predictive tool for helping to determine workload and ideal unit utilization.
- ❖ A basis for continually measuring performance improvements over time.
- ❖ Policy guidance when dealing with resource procurement and allocation as the District plans for the next 5-10 year period.

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# INTRODUCTION

Polk County Fire District No.1 is a combination Career and Volunteer Fire District comprised of four fire stations covering 185 square miles serving a population of approximately 26,000 people in Southeast Polk County and Western Marion County. Designated land uses are varied ranging from urban and suburban areas of Monmouth and Independence, to rural, farm and forestlands in surrounding unincorporated areas. The cities of Monmouth (Pop. 9,920) and Independence (Pop. 9,530) form the heart of the District, with the communities of Buena Vista, Suver, Airlie, and Pedee forming the rural areas. Some of the major features of the District include Western Oregon University, Independence Airport, the Willamette River, small downtown areas, and city parks that host events.

The Fire District is an Emergency Service delivery system providing Fire Suppression, Fire Inspection, Fire Education, Fire Investigations, Fire and EMS Training, and Advanced and Basic Life-Support Ambulance Service. During 2019, the District answered 2,734 calls for service including; 2,006 Medical/Rescue, 49 Fire, 69 Hazardous Condition, 232 Public Service, 306 Good Intent, 70 False Alarms, and 1 Special Incident Type.

## ***STAFFING***

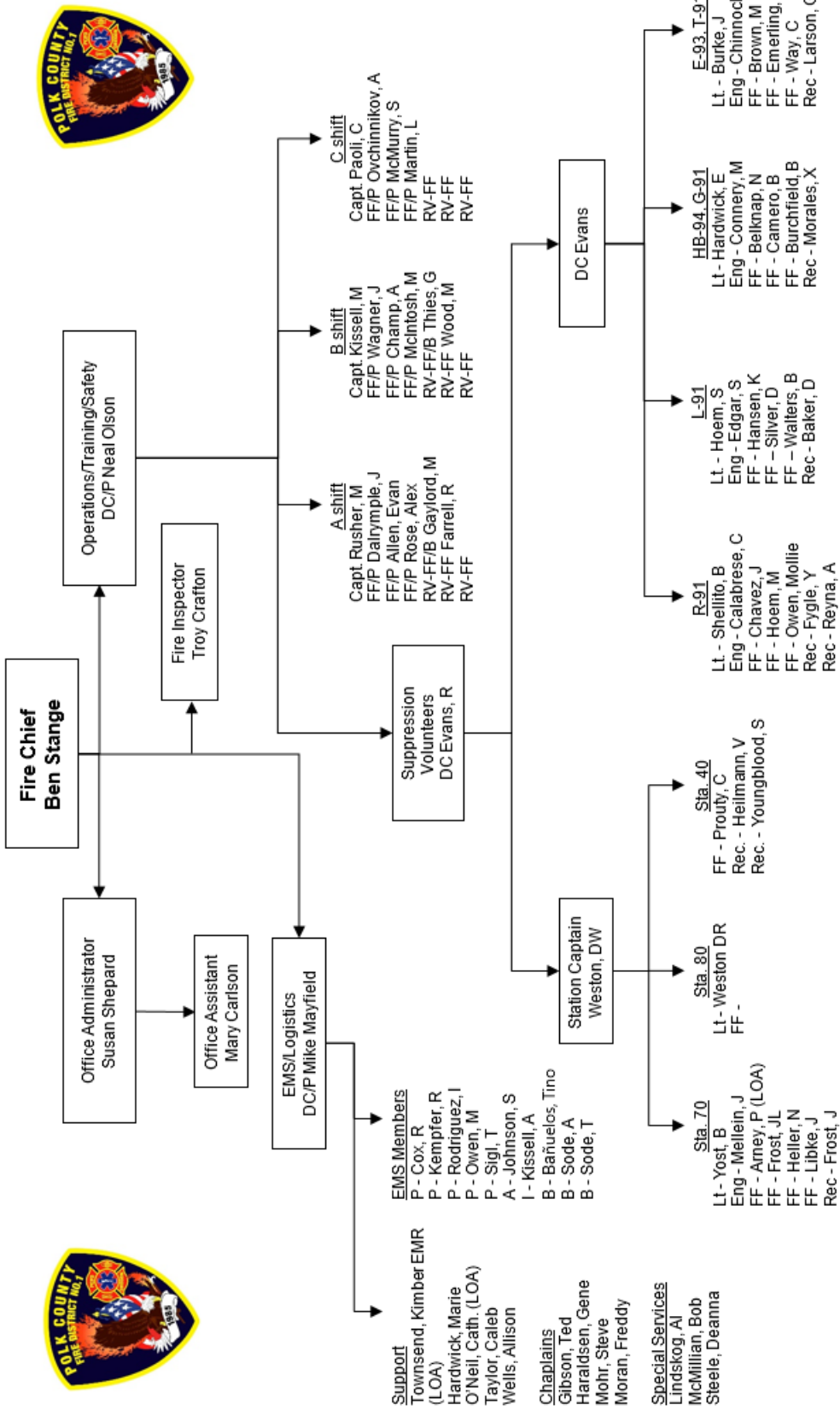
Polk County Fire District No.1 has four fire stations. Volunteers staff three of these stations completely. Station 40 is located in Buena Vista, Station 80 is in Airlie, Station 70 is in Pedee, and Station 90, (the Central Station) is located in Independence. The District also has Support, Special Services, and EMS only Volunteers.

Station 90 is the only station in the District that is staffed 24/7 with three shifts. Each shift is comprised of a Captain/Paramedic, and three Firefighter/Paramedics on duty for 24 hours a day. Not only are there career personnel and home responding volunteers at Station 90, but there are also Resident Volunteers who are students pursuing careers in fire and EMS and are assigned rotating schedules when they are not in class. The administrative office is also housed in Station 90.

The District has three full-time Chief Officers, the Fire Chief, a Deputy Chief of Operations and Training, and a Division Chief of EMS and Logistics. A part-time Fire Inspector handles most of the fire prevention activities. A Volunteer Division Chief is in charge of the Volunteers. The District also has an Office Administrator and an Office Assistant.

## ***GOVERNANCE AND BUDGET***

Polk County Fire District No.1 is organized as a Special District under ORS 478. It is the result of the merging of Independence Fire Department, Monmouth Fire Department, Southeast Polk Rural Fire Protection District, and the Pedee Community Volunteer Fire Department. The District is governed by an elected five-member Board. The District's permanent tax rate is \$1.5038 per \$1,000 of assessed value, an operating levy of .19 cents and a General Obligation Bond.



**Bullpen**  
 Capt. Johnson, J  
 Lt - Nisbet, J  
 FF - Stutzman, M  
 FF - Nelson, A

# MISSION, VISION, VALUES, & STRATEGIC PLANING

## ***DISTRICT MOTO***

*“Serving Because We Care”*

## ***DISTRICT MISSION***

Committed and dedicated to providing professional fire and life safety and environmental protection to the community.

## ***DISTRICT VISION***

We strive to provide a safer community by being a leader, grounded in teamwork, commitment, and compassion.

## ***VALUES STATEMENT***

- We respect our community and understand that serving them is a privilege.
- We strive for excellence in personnel recruitment, retention, training, and career development.
- We recognize the importance of balancing the needs of the individual, family, and Fire District.
- We are all vital members of a family that values honesty, integrity, equality, respect, open communication, and one’s limitations and abilities.
- We will conduct ourselves in such a manner that will enhance the image and reputation of Polk County Fire District No.1.

## ***STRATEGIC PLAN***

In March of 2019, the Board of Directors approved a Strategic Plan to help guide the District over the coming years. The process involved career and volunteer members of the organization as well as one member of the Board of Directors. There were three phases in the creation of the Strategic Plan:

- Evaluating and update the District’s “guiding principles” (noted above)
- Performing a SWOT exercise
- Creating goals and objectives to complete over the next three year period

The goals and objectives are as follows:

**GOAL ONE:** To provide consistent, skill level appropriate training.

- OBJECTIVE 1: To expand on and improve the task book for career Firefighter/Paramedics.
- OBJECTIVE 2: To create an introductory task book for residents and home responding volunteers.
- OBJECTIVE 3: Host advanced firefighter classes taught be outside instructors 1-2 per year.
- OBJECTIVE 4: Create a how-to video catalog applicable to Polk Fire operations.

- OBJECTIVE 5: Form group to create comprehensive annual training calendar.
- OBJECTIVE 6: Create library of consistent lesson plans.
- OBJECTIVE 7: Set up Wednesday night drills in a way that volunteers run a majority of first out calls and career staff is able to mostly stay at the station to drill with the remaining volunteers.
- OBJECTIVE 8: Ensure all responders meet annual benchmarks with established remedial training for those who do not.
- OBJECTIVE 9: To ensure all personnel, including volunteers, receive annual evaluations with the opportunity to set goals.

**GOAL TWO:** To expand and enrich community relationships.

- OBJECTIVE 1: Create media outreach strategy for response and prevention messages to include target audiences, forms of communication, frequency, and content.
- OBJECTIVE 2: Create informational and recruitment brochures to distribute at events.
- OBJECTIVE 3: Create video introducing public to the Fire District.
- OBJECTIVE 4: Create working relationships with high frequency medical needs facilities.
- OBJECTIVE 5: Remove all excess clutter from areas of the station accessible by the public.
- OBJECTIVE 6: Hold bi-annual open house.
- OBJECTIVE 7: Expand involvement in industry organizations.
- OBJECTIVE 8: Create emergency services introduction class/club with Central High School.
- OBJECTIVE 9: Create a facility plan for maintenance.

**GOAL THREE:** To enhance the overall morale of the organization.

- OBJECTIVE 1: Create a recognition program for distinguished acts by personnel.
- OBJECTIVE 2: Increase frequency of communication between Fire Chief and shift personnel.
- OBJECTIVE 3: Have reoccurring Captain's meetings.
- OBJECTIVE 4: Find way to incentivize or reward volunteers.

**GOAL FOUR:** Provide an efficient, consistent, and realistic response model.

- OBJECTIVE 1: Review and update the District's Standard of Cover.
- OBJECTIVE 2: Analyze the organizational structure and determine any changes that may improve response, workflow, or workplace satisfaction.
- OBJECTIVE 3: Reduce the number of lift assist calls.

**GOAL FIVE:** Convene EMS committee to ensure all aspects of EMS response remain efficient and effective.

- OBJECTIVE 1: Convene EMS committee to conduct annual review of EMS protocols.
- OBJECTIVE 2: Convene EMS committee to consider other charting programs or what may be done to improve efficiency of ERS.
- OBJECTIVE 3: Provide and accurately track initial and annual vaccines for all personnel.

**GOAL SIX:** Ensure investments in stations, apparatus, and equipment are tracked, cared for, and replaced responsibly.

- OBJECTIVE 1: Maintain an up to date apparatus replacement plan.
- OBJECTIVE 2: Complete inventories of equipment for all apparatus.
- OBJECTIVE 3: Complete inventories of all PPE with inspections logged in ERS.
- OBJECTIVE 4: Apply for more grants.

# RISK ASSESSMENT

## ***GEOSPATIAL CHARACTERISTICS***

- The boundaries of the Fire District extend beyond the cities of Monmouth and Independence and include the communities of Buena Vista, Suver, Airlie and Pedee. The District boundaries also extend a little bit into Marion County covering residential & farming properties off of River Rd. S. and Riverside Dr. S.
- There are changing urban growth boundaries and zoning ordinances in the cities of Monmouth and Independence.

## ***TOPOGRAPHY***

- Waterways: The Willamette River divides Polk and Marion County. There is only one access across the river in Independence. Ash Creek runs through the town of Independence which results in several roads being broken up into multiple segments.
- Mountains: The Pedee area has several mountains owned by private and public entities. Many are only navigable by logging roads.

## ***TRANSPORTATION NETWORKS***

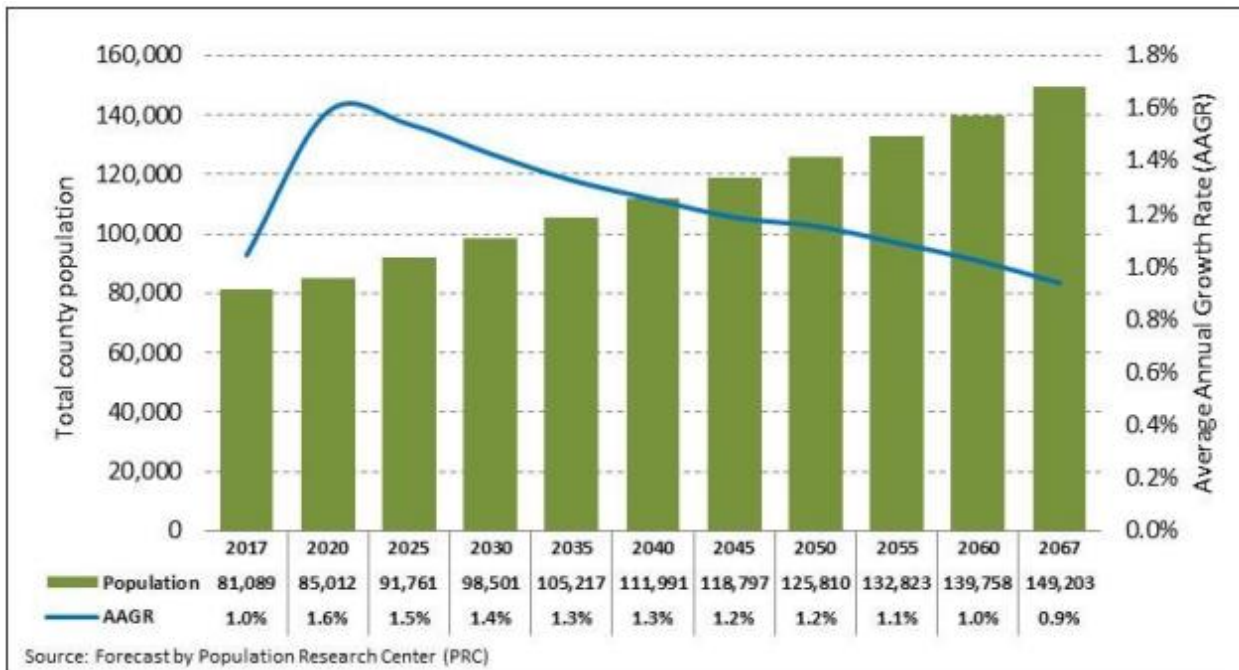
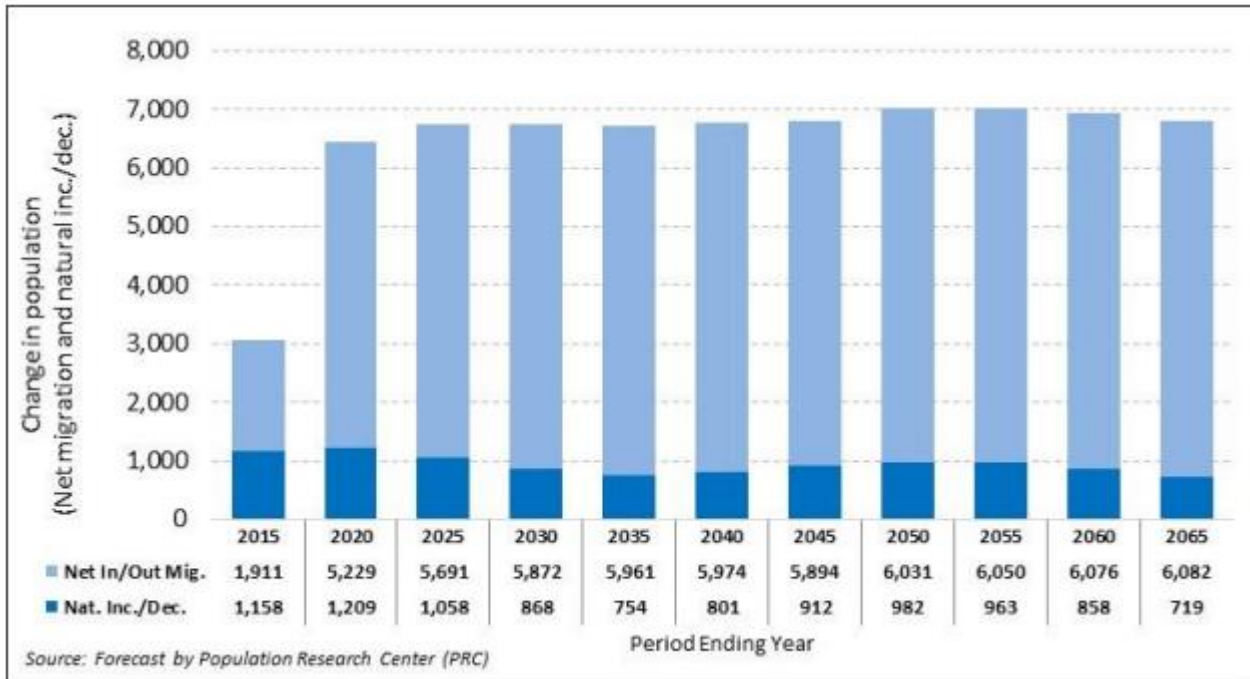
- Highways: Highway 99W, 51, and 223 all go through the Fire District. The most significant is Highway 99W which experiences not only local traffic, but many commercial trucks as well.
- Railway: There are two railways within the District. One is in Marion County and parallels River Rd. S. The other runs north-south in Polk County traversing across Independence further limiting the number of continuous roads that reach the East side of Independence.
- Airports: Independence State Airport is in Independence with a 3,000' runway. There are various fields in the District that serve as small private runways.

## ***DEVELOPMENT AND POPULATION GROWTH***

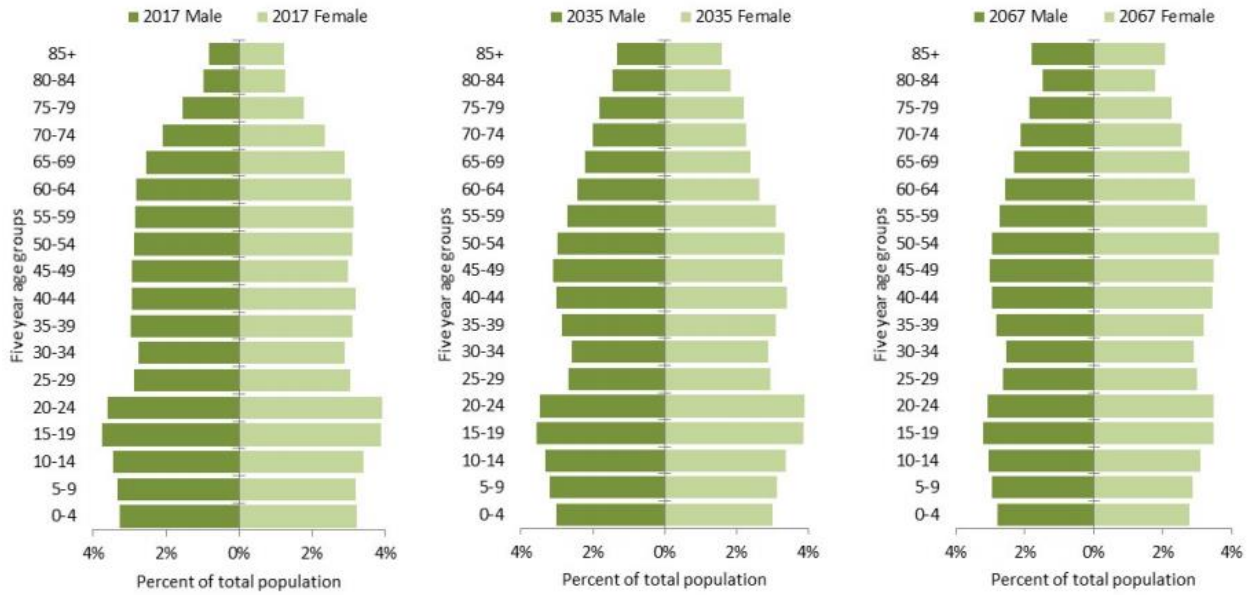
*The following information is from the Population Research Center at Portland State University. It is important to note that much of the information is compiled for the County as a whole and not specific to the boundaries of Polk County Fire District No.1. The most recent report is the 2017 Final Forecast Report for Polk County, its Urban Growth Boundaries, and other Area Outside UGB's. An updated report will be available in 2021. The report noted the following:*

- In general, as the economy continues to strengthen we assume an increase in net in-migration and a corresponding growth in housing construction.
  - Despite a slow down towards the end of the last decade, recent net in-migration will accelerate in the nearer-term and then decline a bit.
  - Net in-migration will occur over the entire forecast horizon.
- We incorporate national trends into our assumptions for fertility and mortality rates.
  - As a result of aging Baby Boomers, deaths increase and peak in 2040, with total deaths slowing thereafter.
  - Total fertility rates decline throughout the entire forecast period.

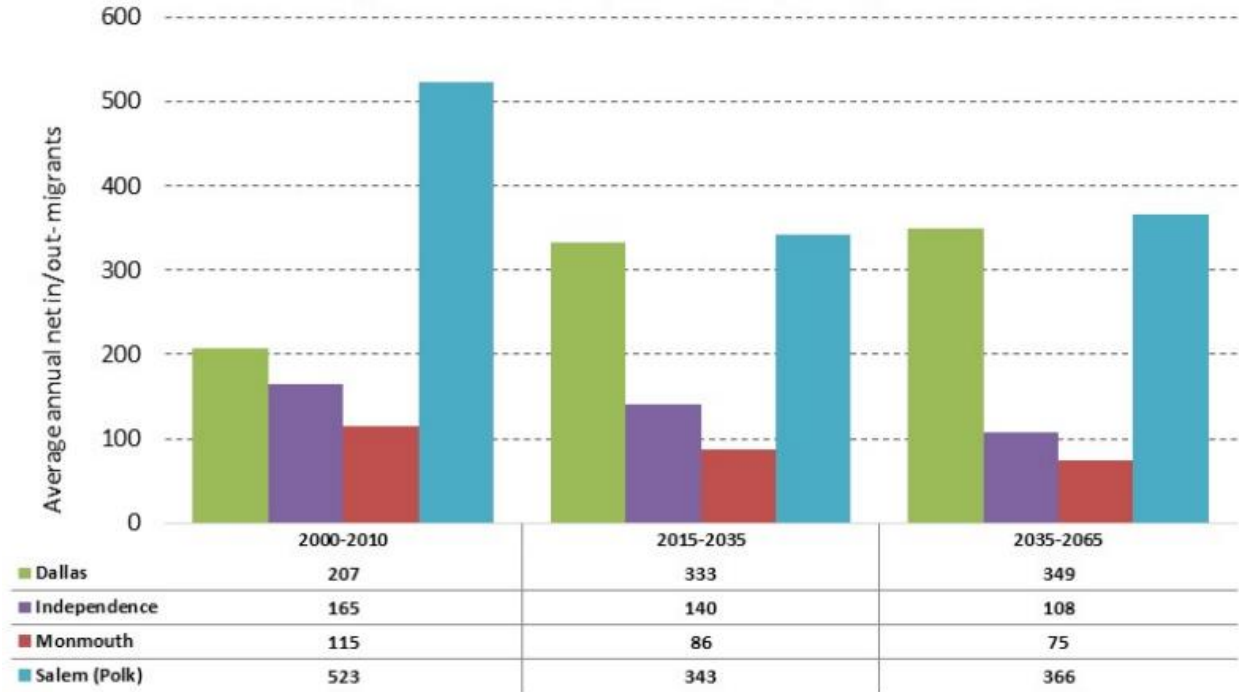
- As a result the County will continue to experience natural increase but at a diminishing magnitude.
- Population increases will become more dependent on net in-migration.



### Polk County—Age Structure of the Population



### Larger Sub-Areas—Average Annual Net In/Out-Migrants





## Historical and Forecast Populations for Monmouth and Independence

	Historical			Forecast				
	2000	2010	AAGR (2000-2010)	2017	2035	2067	AAGR (2017-2035)	AAGR (2035-2067)
Independence	6,248	8,696	3.4%	9,326	13,803	21,741	2.2%	1.4%
Monmouth	7,834	9,598	2.1%	9,944	12,943	17,708	1.5%	1.0%

- Areas outside the Urban Growth Boundaries should see a 0.4% annual increase through 2035 and 0.6% from 2035-2067.

In the Report, the City of Monmouth responded to a survey with the following:

- Demand for multi-family housing remains strong.
- Infrastructure capacity and condition are both adequate to accommodate growth.
- Preliminary data shows that about fifty additional acres of high-density residential land will be needed to meet the City's needs through 2040.
- No UGB expansion is anticipated.
- Buildable land is available within the UGB but owners of larger parcels are not interested in annexation and development.

The City of Independence did not respond to the survey but in late 2019 the City annexed 70 acres of land between Talmadge Rd and S 13<sup>th</sup> St.

### ***PERSONNEL RESOURCES***

Career personnel work schedules consisting of a 48-hrs on/96-hrs off (2 days on and 4 days off), 365 days a year. Typically the shift personnel, consisting of career staff along with Resident Volunteers, are able to staff the first medic and either an additional medic or the first out engine out of the Central Station in Independence. The shift staff is augmented by available volunteer fire, EMS, and support personnel.

Day time response is difficult with many of the Volunteers working and most Resident Volunteers at school. It is often necessary to rely on Chief Officers to respond not only for large calls, but also for overlapping calls that occur.

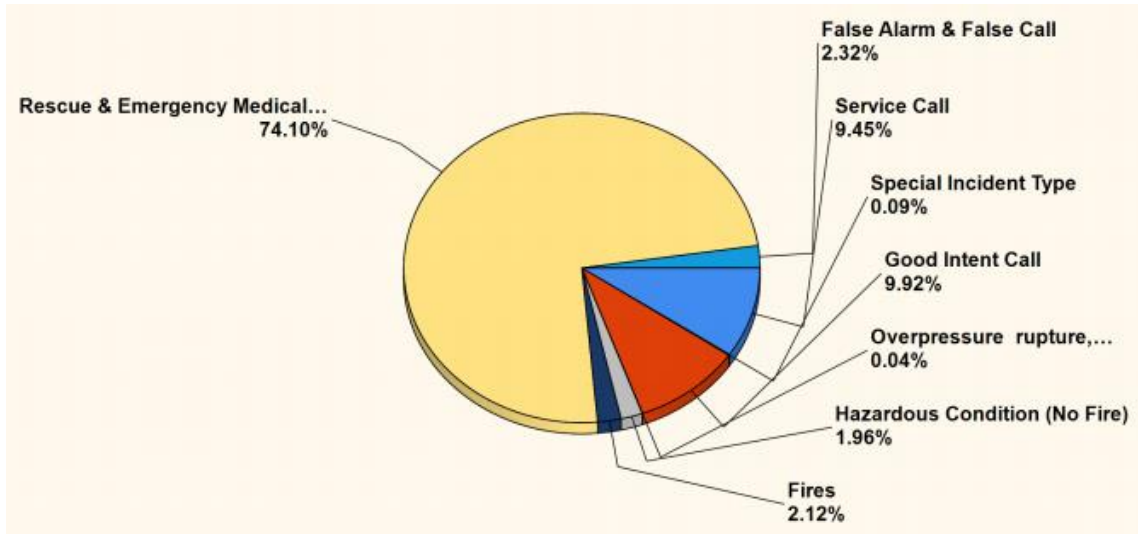
It is difficult for the District to keep enough Volunteers engaged particularly at the rural stations. While Station 70 has maintained a consistent volunteer force, both Station 40 and 80 struggle to maintain more than a couple volunteers.

The District utilizes Resident Volunteers as a part of response. There are no requirements as to what certifications they must have. There are times when nearly all residents are certified FF's and EMT-Basics. Typically these periods will last for a few months and are followed by a mass exodus of Residents with new ones taking their places at the start of their educations. For that reason there will often be several months with improved staffing, particularly of first-out apparatus followed by several months of difficulty achieving goal response times.

## PROBABILITY

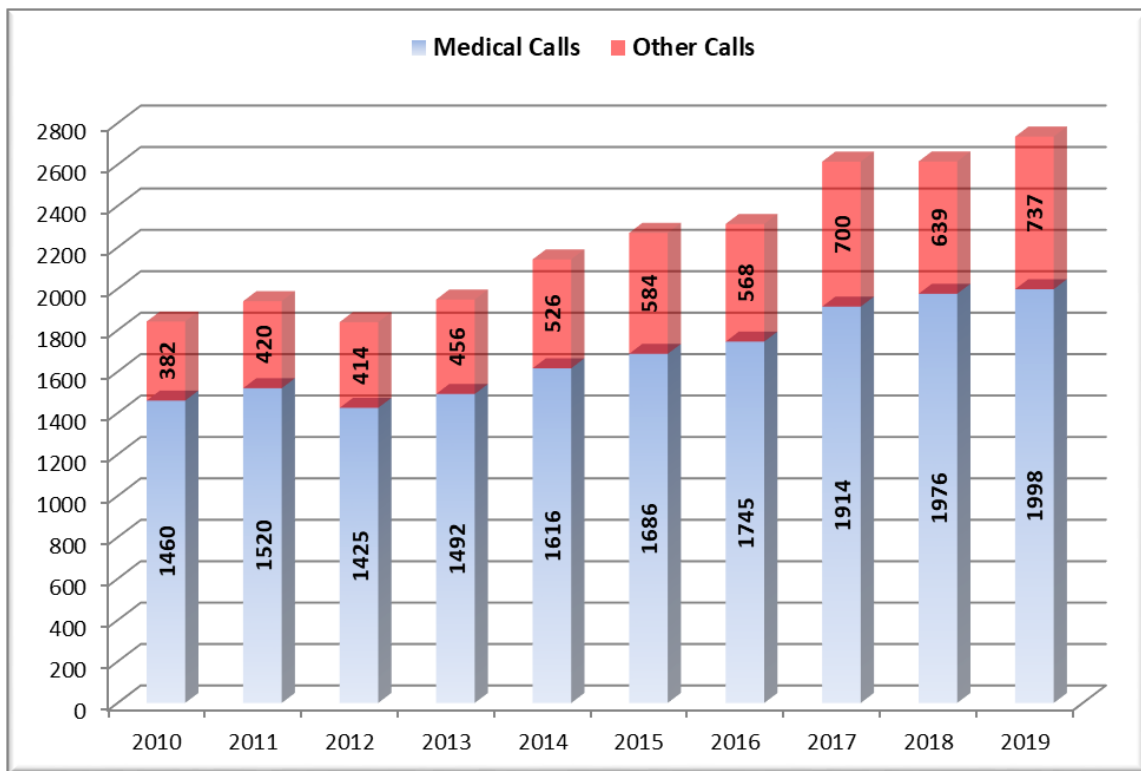
### CALL TYPES

Makeup of call responses 2017-2019

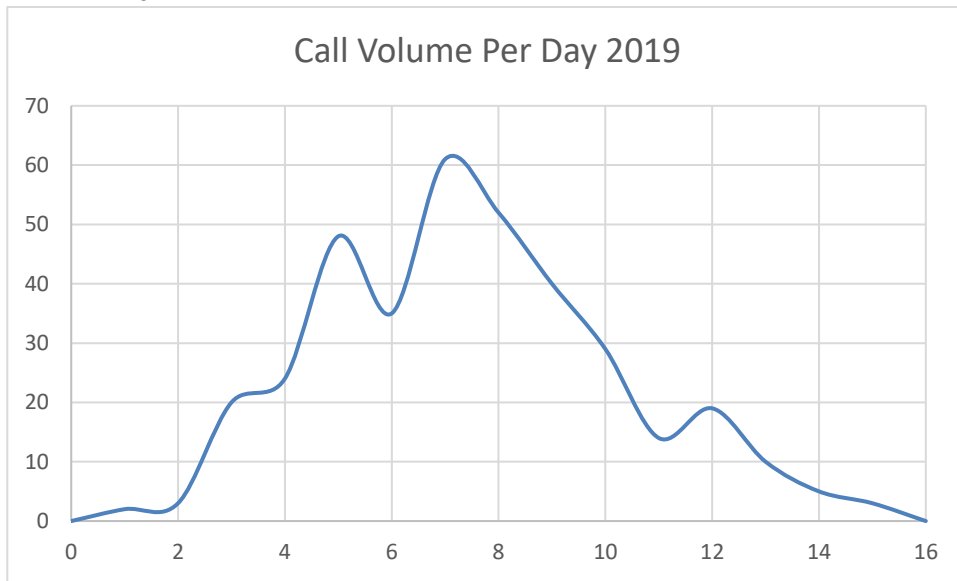


### CALL VOLUME

Historical Call Volume



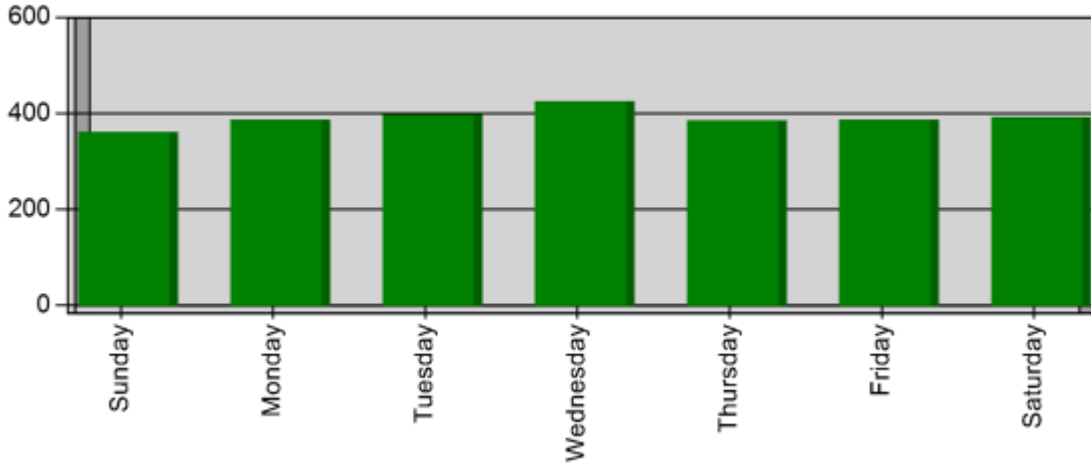
### Average Calls Per Day



- The average number of calls per day in 2019 was 7.5.

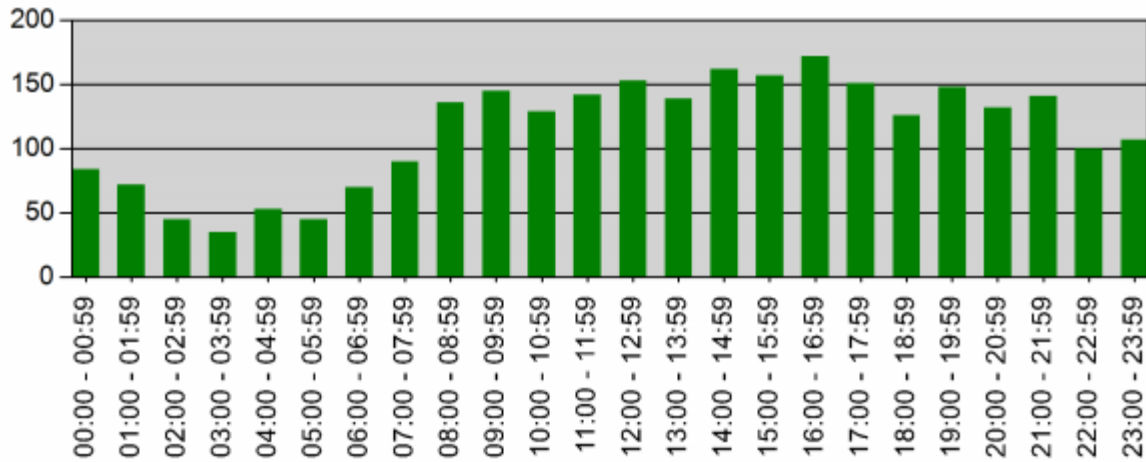
### Incidents by Day of the Week for Date Range

Start Date: 01/01/2019 | End Date: 12/31/2019

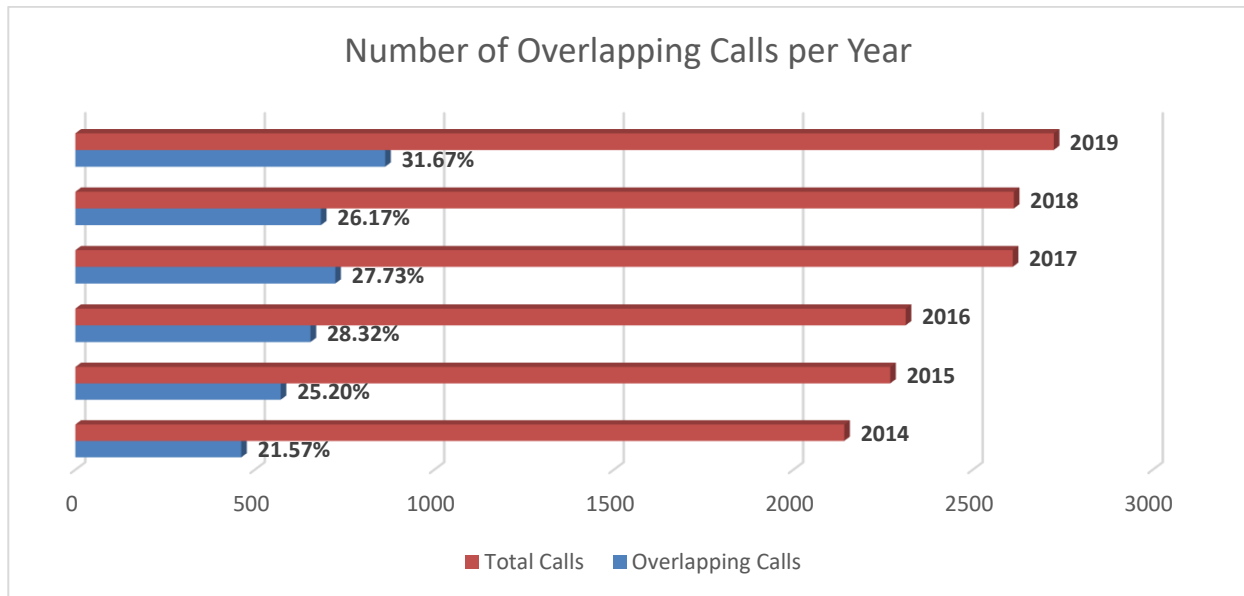


### Incidents by Hour for Date Range

Start Date: 01/01/2019 | End Date: 12/31/2019



### Overlapping Calls

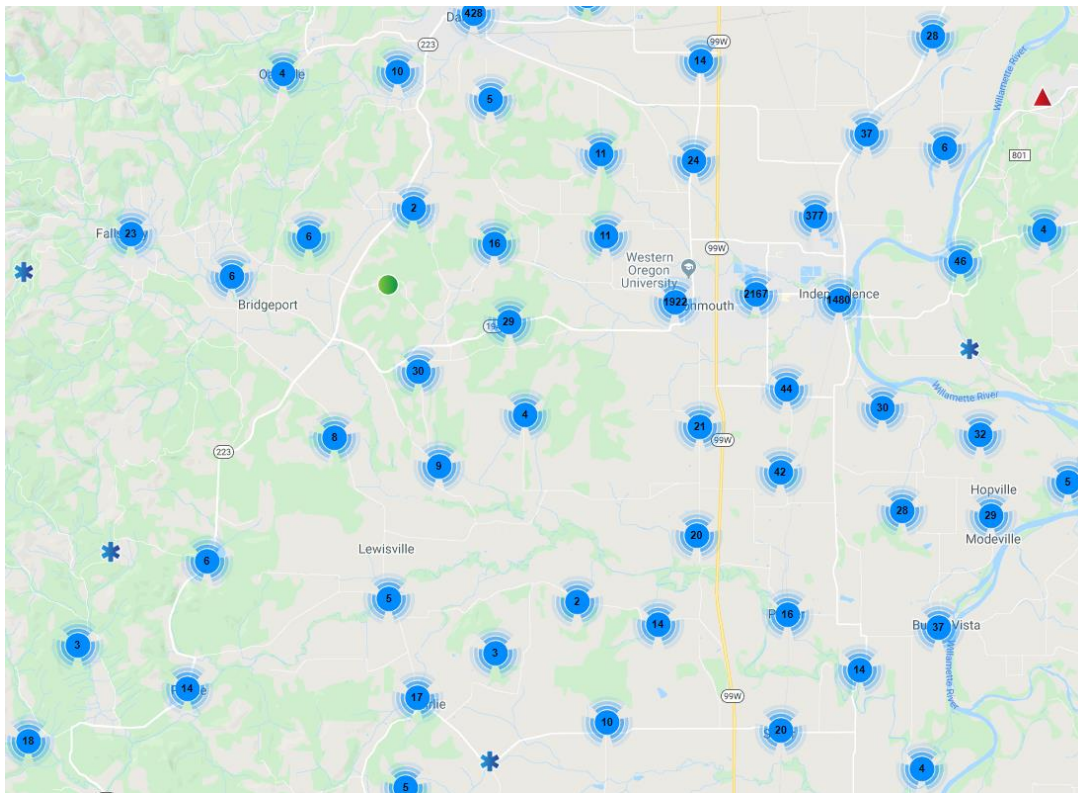
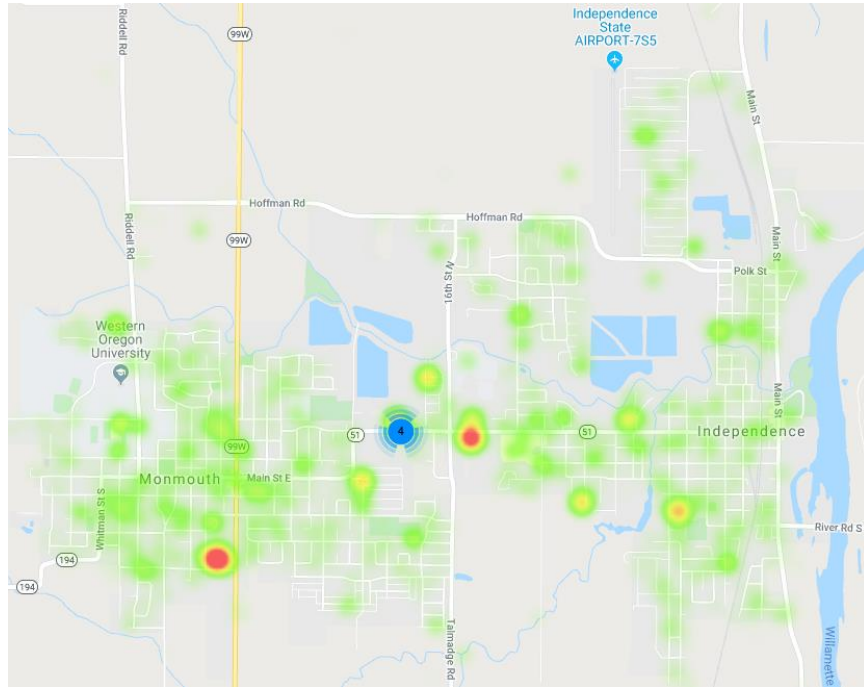


The more hours that are spent on call responses, the higher likelihood that these responses will overlap with one another. The number of calls that overlapped increased by 86% from 2014 to 2019. The proportion of the total call volume that was overlapping increased by 47% during this same time period.

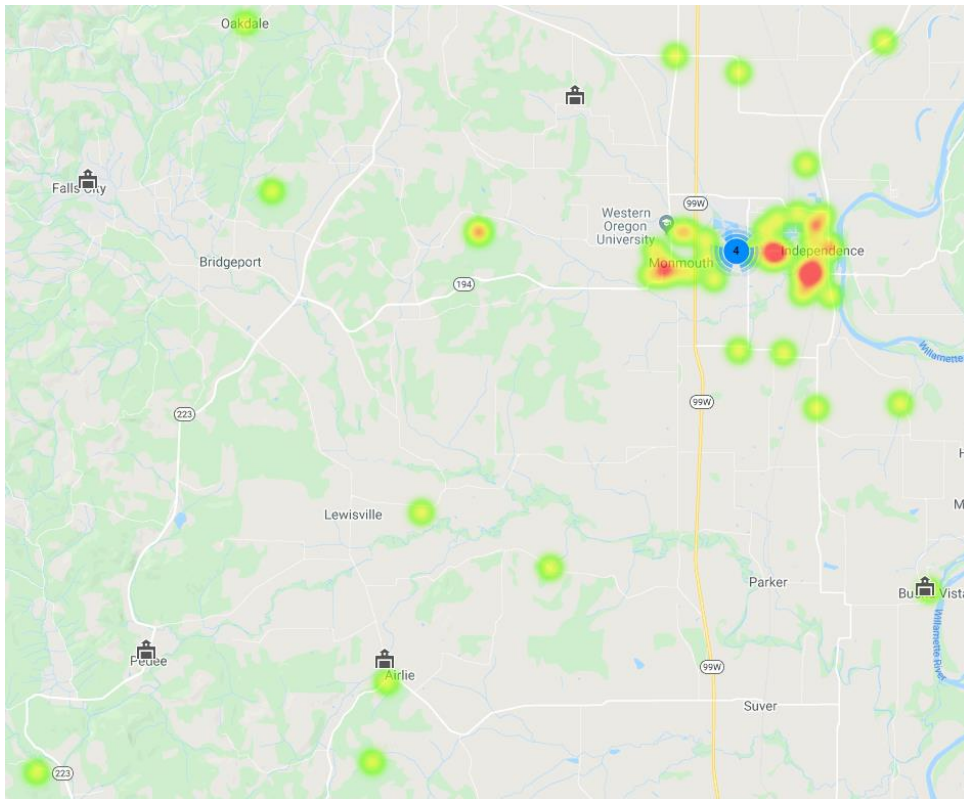
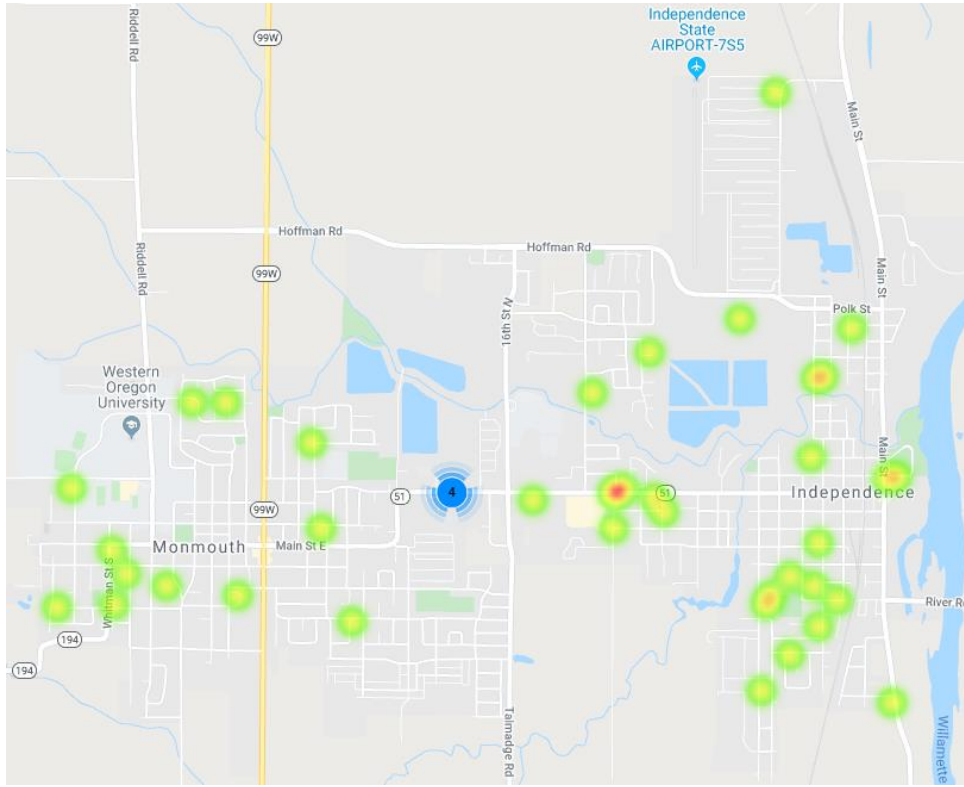
# CONCENTRATION

Geographical Distribution of Responses – The following is a “heat map” of call volume from 2017-2019.

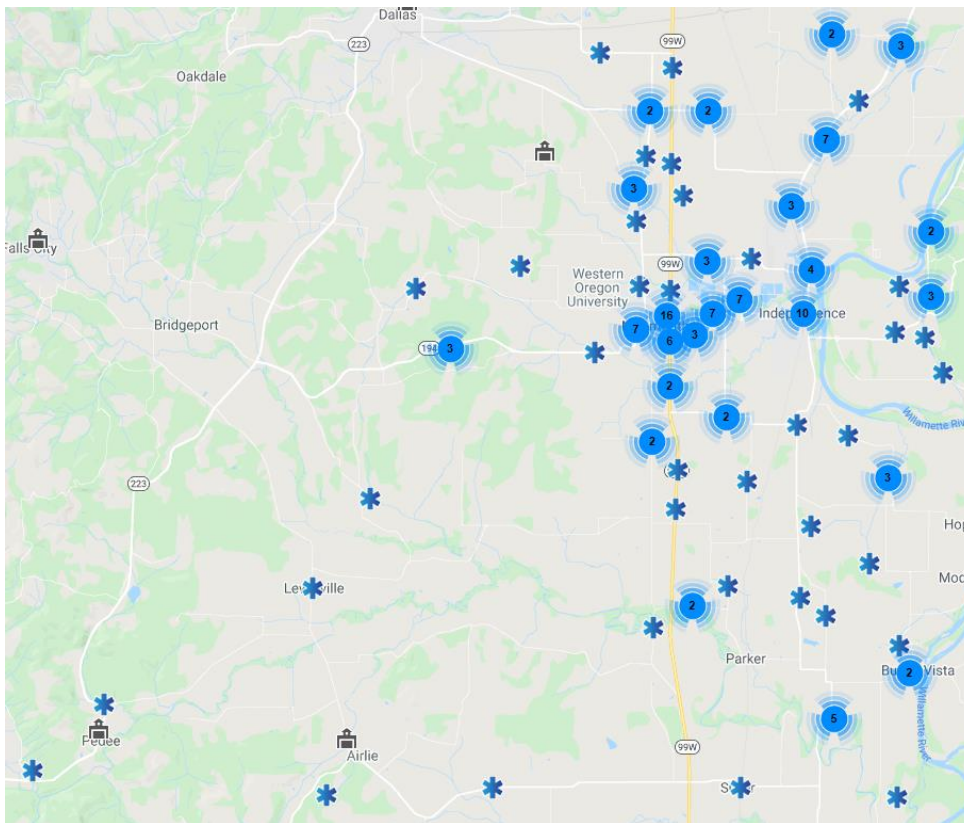
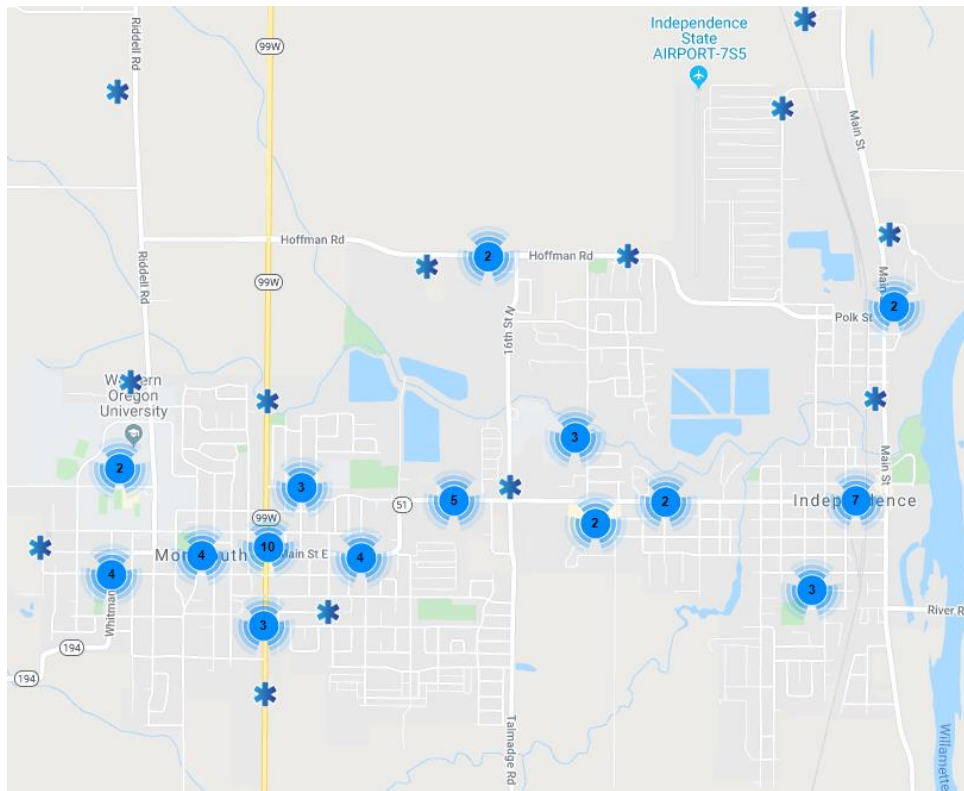
All Calls



# Structure Fires

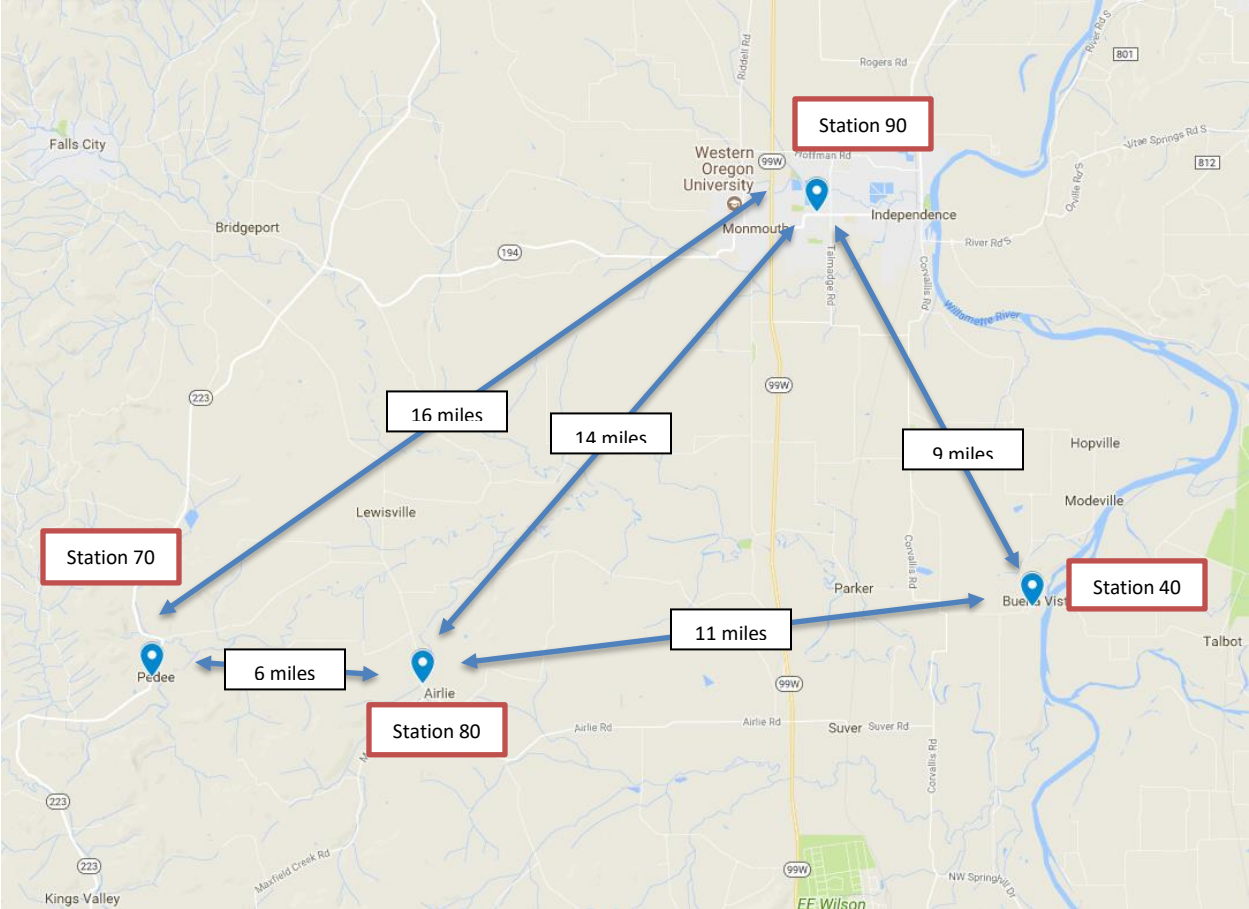


# Motor Vehicle Accidents with Injuries



# DISTRIBUTION OF RESOURCES

## STATION LOCATIONS



## DISTRIBUTION OF VEHICLES

	Station 40	Station 70	Station 80	Station 90
<b>Water Tenders</b>	1	1	1	1
<b>Interface Engines</b>	1	1		1
<b>Type 6 Light Brush</b>			1	1
<b>Structural Engines</b>				2
<b>Ladder Truck</b>				1
<b>Heavy Rescue</b>				1
<b>Ambulances</b>				3



**Station 90 – Central Station**



1800 Monmouth St., Independence Oregon, 97351

**M-91: ALS Ambulance**

**M-92: ALS Ambulance**

**M-93: ALS Ambulance**



**E-92: Type 1 Structural Engine**



**E-93: Type 1 Structural Engine**



**L-91: Ladder Truck**



**HB-94: Type 1 Interface Engine**



**R-91: Heavy Rescue**



**G-91: Type 6 Light Brush**



**T-91: Water Tender**

***Station 40 – Buena Vista Station***



11350 Church St., Independence Oregon, 97351

**T-41: Water Tender**



**E-41: Type 1 Interface Engine**

***Station 80 – Airlie Station***



14775 Airlie Rd., Monmouth Oregon, 97361



**E-81: Type 6 Light Brush**

**T-81: Water Tender**



**Station 70 – Pedee Station**



12485 Kings Valley Highway, Monmouth Oregon, 97361

**E-71: Type 1 Interface Engine**



**T-71: Water Tender**

# TIME & ON-SCENE PERFORMANCE

## ***RESPONSE PERFORMANCE STANDARDS***

### **Cascade of Events - the Response Time Continuum**

Response time elements are a cascade of events. This cascade is similar to that used by the medical community to describe the events leading up to the initiation, mitigation, and ultimate outcome of a cardiac arrest. It is imperative that you keep in mind that some of the intervals described can be directly influenced by the fire service (reflex interval and travel interval), while others can be influenced indirectly (through public education, engineering initiatives, and standards).

## ***MEASURES***

### **Time Points and Time Intervals**

The response performance continuum is composed of the following time points and time intervals:

- **Event Initiation Point** – the point at which factors occur that may ultimately result in an activation of the emergency response system. Precipitating factors can occur seconds, minutes, hours, or even days before a point of awareness is reached. An example is the patient who ignores chest discomfort for days until it reaches a critical point at which he/she makes the decision to seek assistance (point of awareness). It is rarely possible to quantify the point at which event initiation occurs.
- **Emergency Event Awareness** - the point at which a human being or technology (i.e., smoke detector, infrared heat detector, etc.) becomes aware that conditions exist requiring an activation of the emergency response system. This is considered the point of awareness.
- **Alarm** - the point at which awareness triggers an effort to notify the emergency response system. An example of this time point is the transmittal of a local or central alarm to a public safety answering point. Again, it is difficult to determine the time interval during which this process occurs with any degree of reliability. An interval which we shall call the alarm transmission interval lies between the awareness point and the alarm point. This interval can be significant, as where the alarm is transmitted to a distant commercial alarm monitoring organization which then retransmits the alarm to the local 9-1-1 and dispatch facility.
- **Notification** - the point at which an alarm is received by the public safety answering point (PSAP). This transmittal may take the form of electronic or mechanical notification received and answered by the PSAP.
- **Call Processing Interval** - the interval between the first ring of the 9-1-1 telephone at the dispatch center and the time units are dispatched. This can, if necessary, be broken down in to two additional parameters: call taker interval (the interval from the first ring of the 9-1-1 telephone until the call taker transfers the call to the dispatcher) and dispatcher interval (the interval from the time when the call taker transfers the call to the dispatcher until the dispatcher (CAD operator) dispatches units.
- **Dispatch time** - the time when the dispatcher, having selected appropriate units for response, initiates the notification of response units.
- **Reflex or Turnout Interval** - the interval between units being dispatched and the time when the responding crew activates the responding button on the mobile computer terminal or notifies dispatch by voice that the company is responding. During the reflex interval, crews cease other

activities, don appropriate protective clothing, determine the location of the call, and board and start the apparatus. It is expected that the responding signal will be given when personnel are aboard the apparatus and the apparatus is beginning to roll toward the call. For volunteers, this is also the time that it takes to respond to the station from their daily activities.

- **En route Time** - the point at which the responding apparatus signal the dispatch center that they are responding to the alarm.
- **Travel Interval** begins at the termination of the reflex interval, and ends when the responding unit notifies the dispatcher unit that it has arrived on scene (again, via voice or MDC notification).
- **Response Interval** - Reflex time plus travel time.
- **On-Scene Time** - the point at which the responding unit arrives on scene.
- **Initiation of Action** - the point at which operations to mitigate the event begin. This may include size-up, resource deployment, etc.
- **Termination of Incident** - the point at which unit(s) have completed the assignment and are available to respond to another request for service.

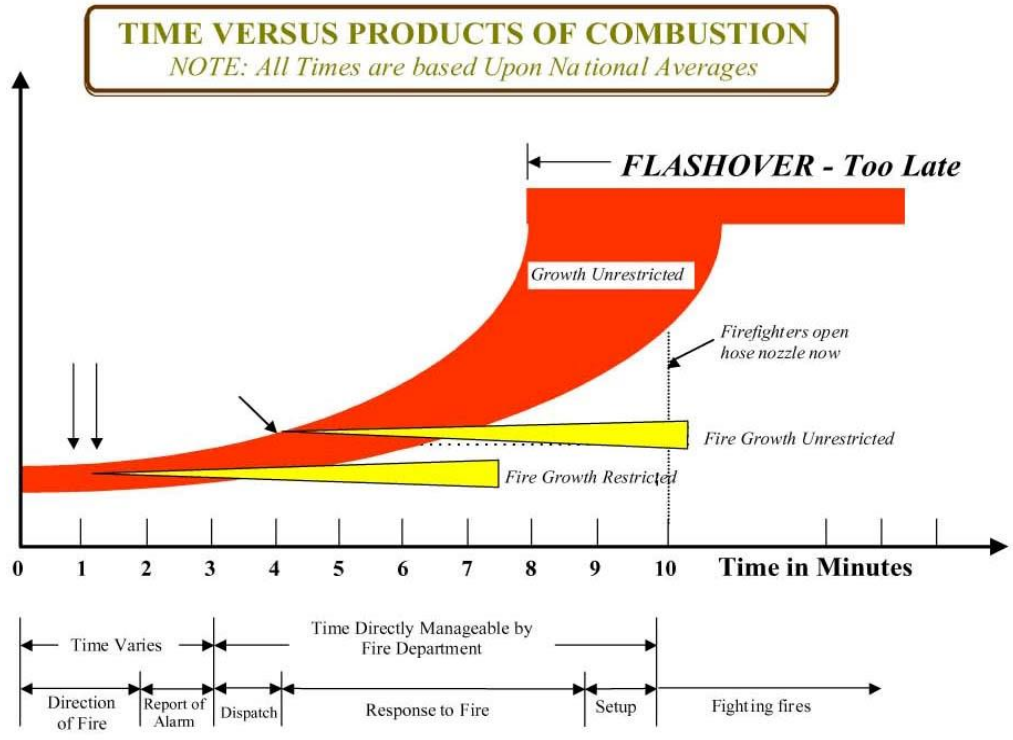
## ***VALIDATION OF HISTORICAL INDUSTRY STANDARDS***

### **Time – Temperature Curve**

The “time-temperature curve” standard is based on data from the National Fire Protection Association (NFPA) and the Insurance Services Organization (ISO), which have established that a typical point source of ignition in a residential house will “flash over” at some time between 5 and 30 minutes after ignition, turning a typical “room and contents” fire into a structural fire of some magnitude.

The utility of the time-temperature curve for fire station placement is limited by a number of factors.

1. It does not account for the time required for the existence of a fire to be “discovered” and reported to the fire department via the 9-1-1 system.
2. The time from ignition to flashover varies widely (5-30 minutes depending on building characteristics); thus it cannot provide a valid basis for the allocation of resources.
3. The curve is constantly shifting, given the numerous changes in building construction, built-in suppression systems, the increase use of fire-resistive materials for furniture and other items typically found in the interior of occupied buildings. Although these factors are true, there is considerable evidence that early intervention is critical to limit property loss and save lives.



### Elements of Response Time

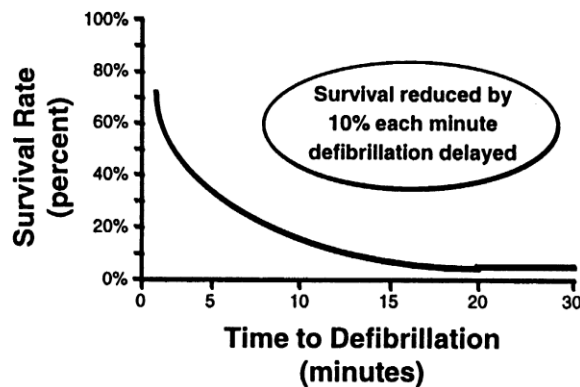
The recommendation for response time is based on time standards set by local and professional standards (NFPA 1710, 1720). This information suggests that intervention at a structure fire prior to the flashover stage is crucial. Smoke alarm activation or awareness of a fire in progress does not occur until approximately 18-20 minutes after initiation of the event. From this point of awareness and time until notification occurs, conditions deteriorate rapidly with maximum temperatures and flashover occurring within an 8-10 minute period. Flashover is that point of a fire's growth at which there is a significant shift in its threat to life and property. From an emergency medical perspective, the American Heart Association cites a survival rate below 20% if external defibrillation is not provided within 8 minutes.

The Federal Occupational Health and Safety Act (Federal – OSHA) and State of Oregon OSHA rules dictate firefighter safety and have established minimum standards for communications, safety officers, incident command, equipment, and most significantly, parameters on when firefighters can enter immediately dangerous to life and health (IDLH) environments. The IDLH staffing requirements from OSHA, known in the fire service as “2-in, 2-out” is the primary reason for the development of fire apparatus staffing that can meet search and rescue objectives with the first-due fire apparatus.



### Cardiac Arrest Survival Data

In Districts like Polk County Fire District No.1, where the fire service is the principal provider of EMS first response, the “chain of survival” standard developed by the American Heart Association often is used to provide guidance for station locations. The chain of survival suggests that basic life support (CPR and defibrillation) should be available to the victim of a cardiac arrest as soon as possible. Without defibrillation, after 5 minutes a victim’s odds of survival are 50%. They continue to reduce by 10% for each additional minute. Early notification of emergency response services is thus paramount to successful resuscitation efforts.



It is worth highlighting that this external standard refers to cardiorespiratory arrest calls. This call type constitute a very small percentage of the District’s emergency responses.

### Responders and Prehospital Response Times (ORS Chapter 333):

Trauma system patients shall receive prehospital emergency medical care within the following prehospital response time parameters 90 percent of the time:

- Urban area, an incorporated community of 50,000 or more population — 8 minutes;
- Suburban area, an area which is not urban and which is contiguous to an urban community. It includes the area within a 10-mile radius of that community's center. It also includes areas beyond the 10-mile radius which are contiguous to the urban community and have a population density of 1,000 or more per square mile — 15 minutes;
- Rural area, a geographic area 10 or more miles from a population center of 50,000 or more, with a population density of greater than six persons per square mile — 45 minutes;
- Frontier area, the areas of the state with a population density of six or fewer persons per square mile and are accessible by paved roads — 2 hours;

# ON-SCENE OPERATIONS, CRITICAL TASKS, & ESTABLISHING AN EFFECTIVE RESPONSE FORCE

On-scene operations, critical tasking, and effective response force are the elements of a standards of cover study that determine staffing levels, number of units needed, and duties to be performed on the fire ground. A fire district must be able to determine what tasks need to be completed in order to have a positive influence on the outcome of the situation, and the number of personnel and apparatus required to complete those tasks.

## **Call Types and Assigned Apparatus**

Incident scenes are unpredictable in many ways. While it is possible to state what critical tasks must be accomplished in order to mitigate the incident, it is not always possible to predict how many fire fighters it will take to accomplish those tasks. The number of personnel and the amount of equipment necessary to accomplish the critical tasks listed will vary due to the following factors:

- a) delayed response;
- b) building construction;
- c) number of occupants;
- d) physical and emotional condition of occupants;
- e) extent of fire upon arrival (flashover);
- f) built-in fire protection;
- g) area of fire involvement;
- h) firefighter or civilian injuries; and
- i) equipment failure

## **Progression of Emergency Situations**

It is recognized that not all emergencies will be handled by the initial response force. Specifically, a major incident within the district will quickly deplete our resources. During situations that exceed the capabilities of the first due apparatus. The I/C or resource officer will request for additional resources, first from within the fire district, then from the mutual-aid agreements that are in effect. Request for outside assistance will be made by the I/C on-scene.

## ***RISK STATEMENT OF POLK COUNTY FIRE DISTRICT NO.1***

- We will risk a lot, in a calculated manner, to save savable lives.
- We will risk a little, in a calculated manner, to save savable property.
- We will risk nothing to save lives or property that are already lost.

“Actions “in a calculated manner” require:

- Incident Command established
- Proper personal protective equipment
- Accountability system established
- Safety procedures in place
- Continuous risk assessment by all members

## ON-SCENE OPERATIONS - FIRE

### Critical Tasks

These are the most important and immediate tasks that must be completed in a timely manner by personnel on scene at any type of incident to prevent escalation of the incident to a catastrophic condition that threatens life loss and/or property destruction. In this section the critical tasks are identified that are necessary to be performed at each type of incident, and the minimum number of personnel to be effective is specified. Allocation of personnel assumes that crews are committed to those assigned tasks, and are not available for re-assignment until the incident has been mitigated sufficiently to allow their release. The following charts show the minimum personnel needed to complete the critical tasks. These show our first alarm assignment only. Greater alarms will generally require resources from our mutual aid partners.

### Firefighter Safety is our first priority

The three Strategic Priorities are: **Life Safety** for the public and our own firefighters, **Incident Stabilization**, and **Property Conservation**, considered in that order.

An **offensive attack** is used when the first arriving company officer determines that they have sufficient resources to combat the fire and mitigate the incident. This strategy is a decision process based on size of the fire, material burning, safety of our personnel, and resources available. In this action fire crews enter the building and combat the fire.

A **defensive attack** is used when the first arriving Company Officer determines that the resources are not sufficient to combat the fire from inside the building, or the building is clearly lost, or safety factors that pose a threat from collapse of the structure, heat or products involved in the fire. In this action, fire crews fight the fire from outside the building with the idea that the building will be a total loss. The incident commander will direct efforts to reducing the hazard, protection of adjacent property, and protection of the environment.

**Transitional attack** is a combination of defensive tactics to contain and hold the fire until enough resources arrive to be able to change tactics to offensive.

### Command/ISO/Accountability

The first arriving officer is responsible for Incident Command. As the Incident Commander (IC), this person fulfills all command staff duties until he/she delegates them. This function includes:

- sizing up the situation
- assessing available resources and identifying the problem
- setting the objectives of the operation
- deciding on and communicating a plan of action
- coordinating the activities of the crew for maximum effectiveness
- monitoring the safety of the operation (see ISO, below)

- monitoring the location of all personnel (see Accountability, below)

### **ISO (Incident Safety Officer)**

This position, required by the State of Oregon Occupational Safety and Health Administration (OR-OSHA) on every fire, monitors the safety of the operation and reports directly to the Incident Commander: During the initial response, the IC is the ISO. This person must do the following:

- Continually observe the operation for potential hazards, watching for
- Potential collapse hazards
- Power line hazards
- Unsafe practices and conditions
- Required safety equipment
- Other hazardous concerns and issues
- Stop any operation which jeopardizes the lives and/or safety of personnel

### **Accountability**

The IC will be the Accountability Officer until there are enough resources on scene to assign someone to:

- Monitor the location, position and condition of every person in the hazard zone
- Keep the Passport system current
- Call for a Personnel Accountability Report when needed
- Notify the IC if any personnel are unaccounted for

### **Pump Operations/Water Supply**

The Apparatus Operator (Driver, Pump Operator or Engineer) on the initial attack engine is responsible for:

- Functioning as the designated water supply officer
- Maintaining a usable flow of water to the attack hose line
- Assisting with making the appropriate equipment available to the attack crew
- Monitoring the scene for safety issues.
- Ensuring that a stable water supply is set up.
- In an area with hydrants:
- Connect and charge the hydrant line
- In a non-hydranted (rural) area:
- Assist with setting up portable reservoir
- Coordinate water tender shuttle

### **Fire Attack**

The fire attack crew (minimum of 2 personnel) is responsible for the following tasks:

- Don full personal protective equipment (PPE), including self-contained breathing apparatus (SCBA)
- Take the necessary equipment and charged hose line to the point of entry
- Force entry to the building and advance the line to the fire
- Apply enough water to take the main heat out of the fire
- Withdraw, if deemed necessary by the IC, until more resources arrive on scene.
- In the event that a structure is untenable and there are no life safety concerns, the Attack Crew will protect adjacent properties with hose streams and will extinguish the fire from the outside.

### **Secondary (or Backup) line**

Two firefighters are required to staff a backup attack line to accomplish the following tasks:

- Assist the attack crew
- Keep the egress free of fire
- Monitor safety of attack crew

The above personnel assignments/tasks are for the situation in which no life threat exists. In the case where the initial crew arrives to find a life threatening situation, the crew will do what is necessary to rescue trapped individuals per SOP. This condition is known as operating in a rescue mode.

### **Fireground Support (“Truck Operations”)**

These duties are done by engine crews or the aerial apparatus as assigned to support the ability of the attack crew to locate and extinguish the fire. Their primary job is to make the interior environment safer for the attack crews and occupants while providing alternate means of escape as needed. Support functions include the following:

- Force open doors for attack crews to enter
- Search for victims
- Utility control (gas and electric)
- Ventilation of smoke and hot gases
- Ladder the building
- Provide safe egress for attack crews
- Check for fire extension into hidden void spaces
- Aerial operations
- Manage air resources
- Monitor air use
- Assist in changing air cylinders
- Refill empty air cylinders

### **RIT (Rapid Intervention Team)**

- This is a crew which is dedicated only to the safety of the firefighters inside the building. It is their responsibility to do the following:
- Assemble the tools and air resources needed for a potential rescue of a trapped firefighter
- Provide egress by “softening” the building
- Cut bars on windows
- Locate exits
- Place ladders in windows where the firefighters are working
- Remain immediately available to enter the building safely if a firefighter is reported trapped, down or not accounted for.

### **Secondary Support Critical Tasks**

Secondary Support functions can be accomplished by initial response personnel after completion of initial assignments, or by units which are specifically called for these tasks.

### **EMS (Emergency Medical Services)**

Responsible for the following:

- Provide medical services for either victims of the fire or firefighters
- Transport any patient to the hospital (another medic will be called to fill this assignment).

### **Rehabilitation (“Rehab”)**

Firefighting is an exceptionally strenuous and taxing job. The rehab task set is critical in extended operations, especially in adverse weather conditions such as extreme heat or cold.

- Provide a place for firefighters to rest, rehydrate, warm up or cool down as necessary, and eat
- Monitor vital signs to ensure that a firefighter is not medically unstable due to exertion.

### **PIO (Public Information Officer)**

The PIO is a vital position, which the IC will fill as soon as practical. The PIO will:

- Gather incident information for dissemination to the news media
- Set up a media area in a safe location
- Offer appropriate information to the media in a timely manner
- Protect sensitive information in a responsible manner

### **Extended Operations**

This term includes, but is not limited to, the following tasks:

- Augment the capability of the RIT (see above)
- Salvage valuable property or protecting it in place with the use of tarps
- Remove water from the building
- Open up hidden spaces to check for hot spots
- Fill SCBA bottles
- Restore apparatus and equipment to serviceable condition
- Determine area and point of fire origin, investigate cause of fire
- Tend to the immediate needs of occupants
- Drain, pick up, roll and reload hose
- Cleaning and restoring of equipment and supplies
- Relief for fatigued crews
- Assist with Rehab (see above)

## ***STRUCTURE FIRES: (INITIAL INTERIOR FIRE ATTACK)***

<b>Task</b>	<b>Minimum Personnel</b>
Command/ISO/Accountability	1
Pump Operations/Water Supply	1
Fire Attack	2
Secondary Line	2
<b>Incident Total</b>	<b>6</b>

***STRUCTURE FIRES – HYDRANTED AREA: (FULL EFFECTIVE FORCE)***

<b>Task</b>	<b>Minimum Personnel</b>
Command/ISO/Accountability	2
Pump Operations/Water Supply	1
Fire Attack	2
Fire Ground Support	4
RIT	3
Secondary Line	2
<b>Incident Total</b>	<b>14</b>

**Hydrant**

__ 1st alarm:	4 Engine, 1 Rescue, 1 Ladder, 1 Medic, 1 Duty
__ 2nd alarm:	2 Engine, 1 Ladder, 1 Medic
__ 3rd alarm:	2 Engine, 1 Ladder
__ 4th alarm:	2 Engine

***STRUCTURE FIRES – NON-HYDRANTED AREA: (FULL EFFECTIVE FORCE)***

<b>Task</b>	<b>Minimum Personnel</b>
Command/ISO/Accountability	1
Pump Operations/Water Supply	2
Fire Attack	6
<b>Incident Total</b>	<b>9</b>

**Non Hydrant**

__ 1st alarm:	4 Engine, 1 Rescue, 3 Tender, 1 Medic, 1 Duty
__ 2nd alarm:	2 Engine, 1 Tender, 1 Medic
__ 3rd alarm:	2 Engine, 1 Tender
__ 4th alarm:	2 Engine, 1 Tender

***CRITICAL TASKS FOR SINGLE RESOURCE RESPONSES***

<b>Task Minimum</b>	<b>Minimum Personnel</b>
Incident Command / ISO	1
Pump Operator	1
Firefighter	1
<b>Total</b>	<b>3</b>
__ 1st alarm:	1 Engine

Single resource responses include lower risk incidents such as priority 4 medical calls, small grass fires, dumpster fires, vehicle fires, chimney fires, low risk wildland fires, smoke investigations, and automatic alarms. If conditions are found that warrant additional resources, the Incident Commander can request additional units.

## ***CRITICAL TASKS FOR WILDLAND FIRE INITIAL ATTACK: (High Risk Response)***

<b>Task</b>	<b>Minimum Personnel</b>
Incident Command / ISO	1
Pump Operations, Water Supply	4
Fire Attack	8
<b>Total</b>	<b>13</b>
__ 1st alarm:	2 Engine, 1 Brush, 2 Tender, 1 Medic, 1 Duty
__ 2nd alarm:	2 Engine, 1 Brush, 2 Tender
__ 3rd alarm:	2 Engine, 1 Brush, 2 Tender
__ 4th alarm:	2 Engine, 1 Brush, 2 Tender

A high risk response is based on the size of the fire and its proximity to structures. These alarm assignments may not include adequate structure protection resources. Geography and span of control may require additional overhead support including a dedicated safety officer.

### **Structure Protection Operations**

Resource needs multiply quickly when structures are threatened by wildland fires. In areas of low density and widely scattered homes, one engine company is needed to protect each home. In high density areas, one engine company may be able to protect 3-5 homes. Structure protection resource needs should be in addition to the resource needs for perimeter control of the wildland fire. Moving resources needed for perimeter control to protect structures defeats the opportunity to mitigate the fire threat and puts the entire operation in a defensive posture.

### **Secondary Support for Wildland Fire Responses**

Secondary support needs for extended operations vary by the size of the fire and the fuels involved. Mopping up a wildland fire can take from several hours to several days and require a large number of people and equipment. Logistical support such as water, food and fuel become critical. Relief crews are usually needed to relieve the fatigued initial attack resources. Polk County Fire District No.1 has a mutual aid agreement with all other agencies in Polk County and can also be assisted through State (ODF) and Federal (USFS and BLM) agencies. Incidents that deplete local mutual aid capabilities can receive support from the State Mobilization Plan. This includes firefighting and logistical resources and Incident Management Team support.



## ON-SCENE OPERATIONS - EMS

### Critical Tasking For EMS Responses

#### ***CRITICAL TASKING LIFE THREATENING MEDICAL RESPONSE: (Priority 1)***

<b>Task</b>	<b>Minimum Personnel</b>	
Primary Medic / Incident Commander	1	
Driver/ Information	1	
Treatment and Care	2	
<b>Total</b>	<b>4</b>	
	<b>Hydrant</b>	<b>Non Hydrant</b>
__ 1st alarm:	1 Medic, 1 Support (Self-Dispatched if needed)	1 Medic, 1 Engine
__ CPR:	1 Medic, 1 Engine, 1 Rescue, 1 Duty	1 Medic, 1 Engine, 1 Rescue, 1 Duty

#### ***CRITICAL TASKING NON-LIFE THREATENING MEDICAL RESPONSE: (Priority 2 & 3)***

<b>Task</b>	<b>Minimum Personnel</b>	
Primary Medic / Incident Commander	1	
Driver/ Information	1	
<b>Total</b>	<b>2</b>	
	<b>Station 90 Zones</b>	<b>Station 40, 70, and 80 Zones</b>
__ 1st alarm:	1 Medic	1 Medic, 1 Engine

If the medic crew needs any additional personnel for assistance in providing care or lifting/carrying patients, they can request additional resources as needed on a case by case basis. If the number of patients begins to exceed the initial assignment in terms of patient care, the IC can implement an MPI/MCI response.

#### ***CRITICAL TASKING MOTOR VEHICLE CRASH WITH INJURY MVA/HIGH MECHANISM/ENTRAPMENT: (Priority 1 & 2)***

<b>Task</b>	<b>Minimum Personnel</b>
Incident Commander / ISO	1
Scene Control / Hazard Mitigation	1
Driver / Information	1
Patient Triage, Treatment, and Care	3
Extrication	3
<b>Total</b>	<b>9</b>
__ 1st alarm:	1 Engine, 1 Rescue, 1 Medic, 1 Duty
__ 2nd alarm:	1 Engine, 1 Rescue, 1 Medic

***CRITICAL TASKING MOTOR VEHICLE CRASH INJURY MVA/LOW MECHANISM: (Priority 3)***

**Injury MVA/Low Mechanism**

<b>Task</b>	<b>Minimum Personnel</b>
Incident Commander / ISO	1
Scene Control / Hazard Mitigation/Safety	1
Driver / Information	1
Patient triage, Treatment, and Care	2
<b>Total</b>	<b>5</b>
__ 1st alarm:	1 Engine, 1 Medic
__ 2nd alarm:	1 Rescue, 1 Medic, 1 Duty

Extrication is defined as patient removal either by means of manual or mechanical methods. If the number of patients begins to exceed the initial assignment in terms of patient care, the IC can implement a multi-patient or multi-casualty incident response.

**ON-SCENE OPERATIONS – SPECIAL RESCUE AND HAZMAT**

***CRITICAL TASKS FOR HAZARDOUS MATERIAL RESPONSE***

<b>Task</b>	<b>Minimum Personnel</b>
Incident Command	1
Dedicated ISO	1
Fire Protection	4
Medical standby	2
Spill control / leak detection / isolation	6
<b>Total</b>	<b>14</b>
__ 1st alarm:	2 Engine, 1 Rescue, 1 Medic, 1 Duty
__ 2nd alarm:	2 Engine, 1 Medic, 1 Tender

A full hazmat response is used for incidents that escalate into an unknown product release, when perimeters and evacuations need to be established, or when the need for specialized personnel or hazardous materials team needs to be called in. The Fire District resources typically are a first response to a hazmat incident. Mitigation cannot take place until the product can be identified and options are reviewed. The Fire District does not typically do any clean up unless it is small fuel spills or containers that can easily be handled within our training and resource limitations. The biggest risk to our community is from a commercial product spill, railroad emergency, or highway transportation accident. In these instances it is likely that a technical hazardous materials response team will be called in to assist. The hazmat team that covers Polk County Fire District No.1 is the Benton County team, however, Salem Fire often initiates contact with a verbal consultation. In most cases, hazmat incidents are very time consuming. Resources are usually needed to remain on scene in standby mode for protection of the scene.

# STANDARD OF COVER GOALS & SERVICE OBJECTIVES

This section identifies response time performance goals and service level objectives for the Fire District. Tracking the District’s capability to meet the targeted goals provides a method to evaluate staffing levels, apparatus, and future station location needs. These standards are monitored, evaluated, and updated as necessary.

## ***TURNOUT TIMES***

The Turnout Time is the interval between the receipt of an alarm by the District and initial response. We measure code 3 responses. Our first and second out medics should be able to go en route within 90 seconds. Apparatus primarily staffed by volunteers have turnout times which account for a 60 second response to their vehicle, 5:45 for a 3 mile drive (based on ISO’s RAND calculation), and 90 seconds to dawn gear and get to apparatus at their assigned station. (report #1106)

<b>Apparatus</b>	<b>Goal Time</b>	<b>Compliance Goal</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>M-91</b>	1:30	80%	80%	69%	59%
<b>M-92</b>	1:30	80%	64%	68%	39%
<b>E-92</b>	2:00	80%	56%	61%	59%
<b>R-91</b>	8:15	70%	81%	80%	76%
<b>L-91</b>	8:15	70%	83%	100%	75%
<b>E-41</b>	8:15	70%	N/A	100%	N/A
<b>E-71</b>	8:15	70%	88%	67%	100%
<b>E-81</b>	8:15	70%	20%	100%	N/A

Analysis: The District has a solid base of volunteers who respond within Station 90’s zone. It is worth noting that the response time for R-91 includes all calls it is dispatched on. Since it is typically the last apparatus to leave Station 90 on structure fires, it will likely never meet the compliance goal when it is dispatched on a fire. The rural stations have very small sample sizes which makes this difficult to measure. The speed of turnout times for the first out units has dropped slightly despite continuing to consistently comply with total response times. This suggests that the crews might just be slow to get logged on to the computer rather than being slow to actually get to the apparatus and respond on the call.

## ***RESPONSE TIME FOR EMS CALLS***

By ORS definition, the communities of Monmouth and Independence both constitute “suburban areas” requiring EMS response for trauma within 15 minutes 90% of the time. The areas outside of town are “rural areas” and require a 45 minute response 90% of the time. We have elected to set a goal of achieving an “urban area” response within the city limits of Monmouth and Independence which requires an 8 minute response 90% of the time. We comply with having a medic on scene outside of the city limits within 45 minutes over 99% of the time. In addition to the medic requirement within 45

minutes outside of the city limits, our goal is to have some type of resource on scene anywhere in the District outside of the cities within 15 minutes 70% of the time. This could be a medic, volunteer engine, or duty officer. Only code 3 response are measured. (reports #1144, 1659, 1682)

**Calls within the City Limits of Monmouth and Independence**

Apparatus	Goal Time	Compliance Goal	2017	2018	2019
M-91	8:00	90%	91%	97%	95%
M-92	8:00	90%	92%	94%	93%
M-93	8:00	90%	100%	100%	100%
<b>Cumulative</b>			<b>91%</b>	<b>93%</b>	<b>92%</b>

**Personnel on Scene of EMS Call Anywhere in District Within 15 Minutes**

	2018	2019
<b>Compliance Goal 70%</b>	70%	69%

Tracking this data was only made available using the District's software in 2018 so previous data is not available.

Analysis: In the previous Standard of Cover, the District met the in-town 8 minute response standards between 87% and 90% of the time depending on the year. In the past three years that has improved. It is worth noting that the previous statistics did not include mutual aid ambulances which would have reduced that number further. The District is now complying with the 8 minute response between 91% and 93% of the time including the instances when we utilize mutual aid. Ambulances easily reach the rural areas of our District within the State's 45 minute standard nearly 100% of the time. It can be difficult to reach all parts of our District by an ambulance or volunteer personnel within 15 minutes due to the geography.

**EFFECTIVE RESPONSE FORCE**

**Initial Attack**

Within the city limits of Monmouth and Independence, Polk County Fire District No.1 has the goal of having 6 personnel on scene to initiate interior fire attack (2 in, 2 out, 1 water supply, and 1 command) within 9 minutes 80% of the time (see section on Effective Response Force). Since turnout goals for apparatus staffed by volunteers is 8:15, a crew should know whether or not additional units are en route by the time and initial interior attack is started.

	2017	2018	2019
<b>Structure Fires In Town</b>	15	7	4
<b>Compliance with Initial Attack in Town</b>	73%	57%	100%

Outside the city limits, Polk County Fire District No.1 has the goal of having 2 personnel on scene for defensive fire attack within 14 minutes 70% of the time. The 14 minute time is referred to in NFPA 1720 for areas with populations <500 per square mile but less than 8 miles from a fire station. Times are not considered if the alarm was recalled prior to an effective initial attack arriving on scene.

	2017	2018	2019
<b>Structure Fires out of Town</b>	4	5	2
<b>Compliance with Initial Attack out of Town</b>	100%	40%	100%

### Full Effective Response Force

The Fire District has a goal of establishing an effective response force within 27 minutes of the initial alarm 70% of the time. In town where interior operations are likely, the effective response force is 14 personnel. The 27 minutes takes into consideration initiating fire attack within 9 minutes, and having an effective response force 18 minutes (average consumption of 1 air bottle) after initiating attack. Times are not considered if the alarm was recalled prior to a full effective response force arriving on scene. Out of town where most operations are defensive or transitional, the effective response force is 9 personnel within 27 minutes.

	2017	2018	2019
<b>Compliance with Full Effective Force in Town</b>	89%	75%	100%
<b>Compliance with Full Effective Force out of Town</b>	50%	100%	100%

**Analysis:** Complying with our initial attack in town is dependent on on-duty staffing since it is very rare that a volunteer will be able to leave their home, get to the station, don their gear, and respond in an apparatus to somewhere in town and arrive within 9 minutes. We averaged 56% compliance in the previous Standard of Cover analysis (2014-2016 data). In the past three years, our compliance has improved to 73%. When our first out medic was available, we had an effective initial attack on scene within 9 minutes 89% of the time. This is also an improvement from the previous analysis that showed a compliance of 81% for this scenario. A majority of this improvement is likely a result of increased staffing. When our first out medics was already committed to another response, we were only able to comply 29% of the time. This is low but an improvement from the 14% in the previous Standard of Cover. In the past three years, there was only one time when the District could not provide the full effective force in 27 minutes within the city limits. All other occasions were in the rural areas suggesting that drive time was more of a factor than total response of personnel.

### **FIRES PER CAPITA**

The District goal is to maintain a number of structure fire incidents per capita equal to or less than the State of Oregon. (report #553)

	2017	2018	2019
<b>Polk Co Structure Fires</b>	19	12	6
<b>Polk Co Fire Population</b>	26,391	26,655	26,921
<b>Fires per 1,000</b>	0.7199	0.4502	0.2229
<b>Average Rate of Structure Fires over 3 Year Period:</b>	0.6048	0.6093	0.4643
<b>State of Oregon Structure Fires</b>	4,775	3,529	3,894
<b>State of Oregon Population</b>	4,143,000	4,191,000	4,218,000
<b>Fires per 1,000</b>	1.1525	0.8420	0.9232
<b>Average Rate of Structure Fires over 3 Year Period:</b>	1.0247	0.9840	0.9726

Analysis: In each of the past three years the Fire District has had fewer structure fire incidents per capita than the State of Oregon.

***PROPERTY LOSS DUE TO FIRE***

The District goal is to maintain a property loss due to fire per capita equal to or less than the State of Oregon. (report #553)

	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>Polk Co Prop Loss</b>	915,270	488,852	123,950
<b>Polk Co Fire Population</b>	26,391	26,655	26,921
<b>Prop Loss per 1,000</b>	34,681	18,340	4,604
<b>Average Prop Loss over 3 Year Period:</b>	<b>25,982</b>	<b>21,232</b>	<b>19,208</b>
<b>State of Oregon Prop Loss</b>	169,900,000	157,800,000	142,030,000
<b>State of Oregon Population</b>	4,143,000	4,191,000	4,218,000
<b>Prop Loss per 1,000</b>	41,009	37,652	33,672
<b>Average Prop Loss over 3 Year Period:</b>	48,770	46,629	37,444

Analysis: In each of the past three years the Fire District has had a lower property loss than the State of Oregon. This is at least in part thanks to the fact that we have experienced fewer total structure fires than the State average. It is important to note that one large fire can have a great impact on our total fire loss due to our population.

***CIVILIAN INJURIES DUE TO FIRE***

The District goal is no civilian injuries due to fire. A secondary goal is to maintain a civilian fire injury rate that is less than the State of Oregon average for the reporting year. It is worth noting that we consider any medical evaluation of a person who was in a structure fire to be an “injury.” None of the persons evaluated in the last three years were transported to the hospital. (report #313)

	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>Polk Co Civilian Injuries</b>	1	1	1
<b>Polk Co Fire Population</b>	26,391	26,655	26,921
<b>Injuries per 100,000</b>	3.7892	3.7517	3.7145
<b>Average Rate of Injuries over 3 Year Period:</b>	<b>1.2631</b>	<b>2.5136</b>	<b>3.7518</b>
<b>State of Oregon Civilian Injuries</b>	262	182	225
<b>State of Oregon Population</b>	4,143,000	4,191,000	4,218,000
<b>Injuries per 100,000</b>	6.3239	4.3426	5.3343
<b>Average Rate of Injuries over 3 Year Period:</b>	6.5236	5.9173	5.3336

Analysis: The District has a fraction of injuries versus the State average. It is unclear whether or not all jurisdictions report medical assessments as “injuries.”

## ***CIVILIAN LIFE LOSS DUE TO FIRE***

The District goal is no deaths due to fire. A secondary goal is to maintain a civilian fire death rate that is equal to or less than the State of Oregon average. Because just one death has such an enormous impact on our death rate due to our population, numbers over a three year average are used. (report #313)

	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>Polk Co Civilian Deaths</b>	1	0	0
<b>Polk Co Fire Population</b>	26,391	26,655	26,921
<b>Deaths per 100,000</b>	3.7892	0.0000	0.0000
<b>Average Rate of Death over 3 Year Period:</b>	<b>1.2631</b>	<b>1.2631</b>	<b>1.2631</b>
<b>State of Oregon Civilian Deaths</b>	59	66	47
<b>State of Oregon Population</b>	4,143,000	4,191,000	4,218,000
<b>Deaths per 100,000</b>	1.4241	1.5748	1.1143
<b>Average Rate of Death over 3 Year Period:</b>	1.1560	1.3580	1.3711

Analysis: The Fire District had one fire fatality in 2017 which has put us very close to the three-year average for the State.

Passed on this, the 8<sup>th</sup> day of October, 2020

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Mike Lippsmeyer, President

Attested:

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Cord Von Derahe, Secretary

