Delivery of Fire Suppression and Emergency Medical Services

March 15, 2016

CITY OF PRESCOTT
ARIZONA
Everybody's Hometown

Presentation Topics and Discussion

I. Fire Department Historical Perspective
- ❑ Evolution of fire departments into “all-risk” response
- ❑ Interdependency within the local Fire/EMS systems
- ❑ Systems and models elsewhere in AZ and the US
- ❑ Personnel resources of the Prescott Fire Department in relation to calls for service

II. The Deployment Model – why and how we do what we do
- ❑ Current priority-based dispatching model
- ❑ Why a fire truck responds; performance of critical tasks
- ❑ Governmental rules and regulations affecting service delivery
- ❑ The 56-hour work week

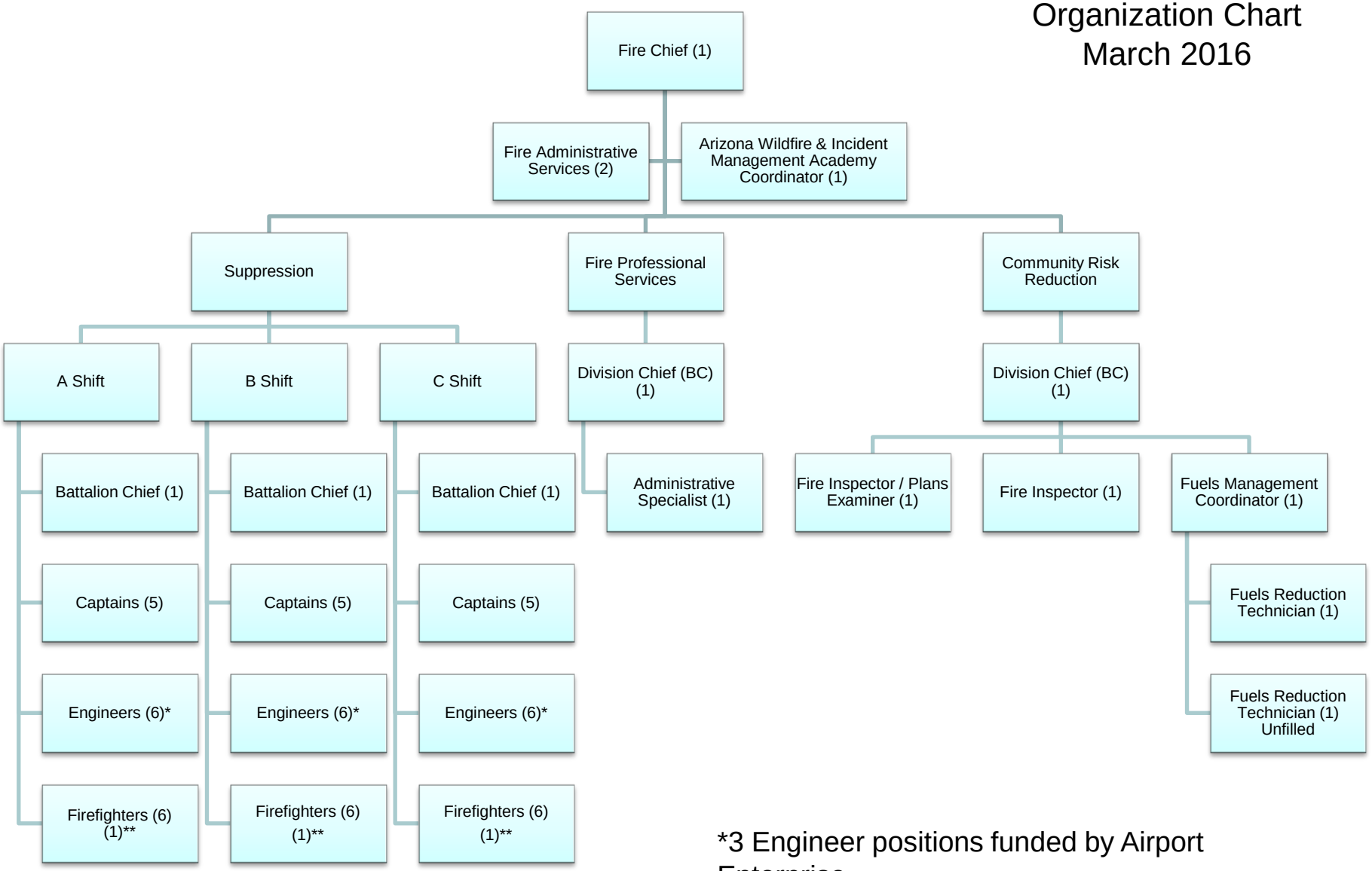
III. Systematic Changes to the Current Model
- ❑ Expansion and Improved Use of Emergency Medical Dispatching
- ❑ Relocation of physical resources toward more suitable deployment locations
- ❑ Outsourcing or contracting for certain services (ARFF and Fuels Reduction)

IV. Service Reduction Options and Impacts

What's Driving this Discussion?

- Continuous improvement of service delivery – identifying and implementing best practices that make sense for Prescott, Arizona
- General Fund Financial Challenges
  - Expenditures increasing faster than revenues
  - Public Safety Personnel Retirement System (PSPRS) annual costs and paying off accumulated unfunded liabilities
  - Implementation of market compensation plan – $650,000 additional expense in FY17 for the Fire Department, most or all of which may have to be absorbed by a corresponding reduction in personnel expenses (reduction in force)

Prescott Fire Department Organization Chart March 2016



*3 Engineer positions funded by Airport Enterprise

**3 FF positions frozen January 1, 2016

Fire Department Historical Perspective

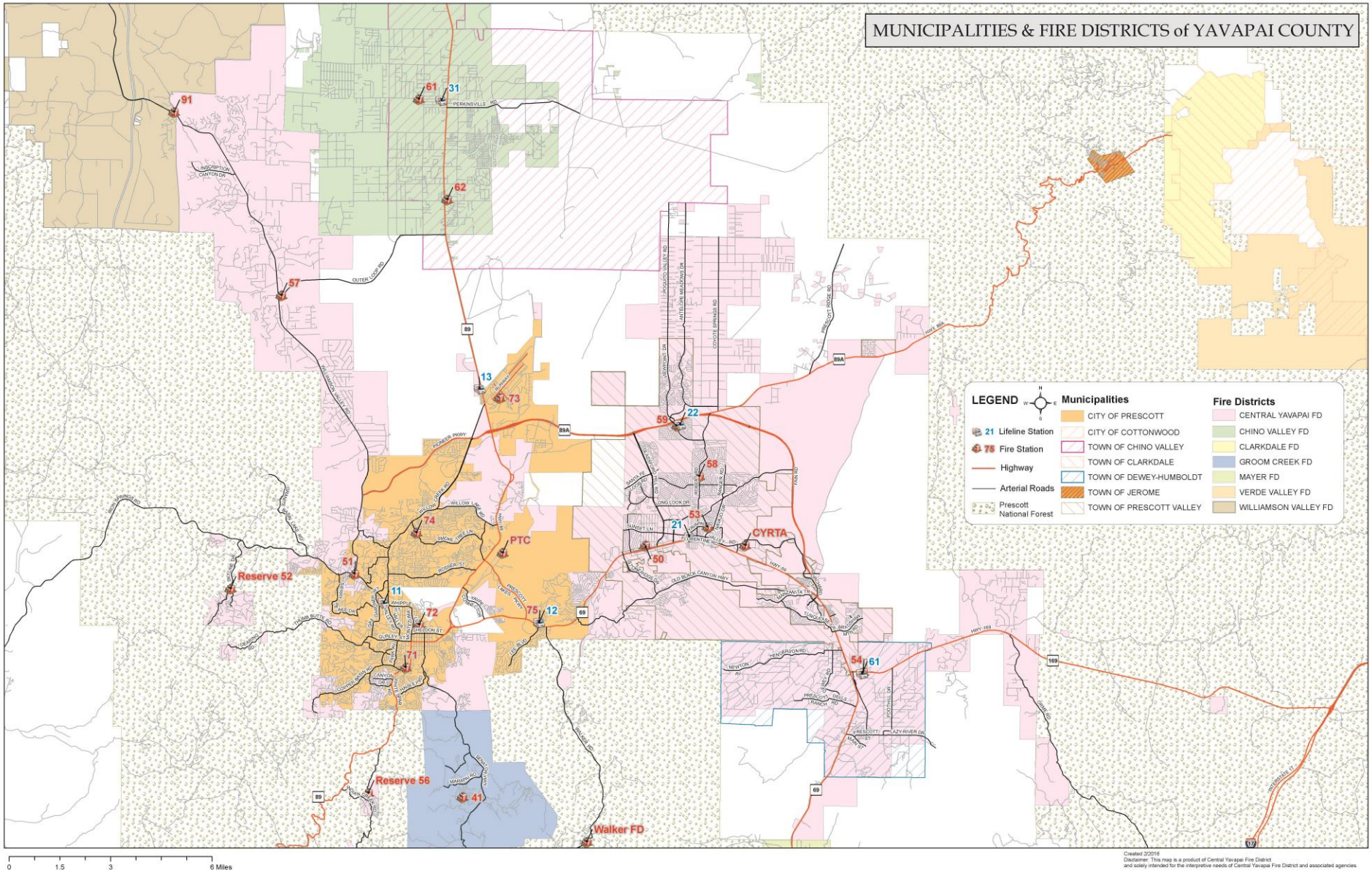
Fire Service Evolution

- 1960s – Fire suppression relatively unchanged from the turn of the century approach, and little to no provision of regular pre-hospital care or emergency medical services
- 1970s – Ascent of fire-based emergency medical services (EMS) and ambulance services
- 1980s – Hazardous material response added to the fire department role
- 1990s – Technical specialist teams began to accomplish complicated rescues
- 2000s – In the aftermath of terrorism, the fire service expanded into bio-terrorism and weapons of mass destruction responses working more closely with law enforcement
- 2010s – Healthcare reform brought about expansion of community paramedicine

Key Factors Contributing to the Quality of Services

- **Concentration:** Spacing of multiple resources arranged so that an initial "effective response force" can arrive on-scene within the time frames desired by a community.
- **Deployment:** The strategic assignment and placement of fire agency resources such as fire companies, stations, and specific staffing levels for them.
- **Distribution:** Geographical location of all "first-due" resources for initial intervention. Generally measured from fixed response points, such as fire stations, and expressed as a measure of time.
- **Effective Response Force (ERF):** The "minimum" amount of staffed equipment that "must" reach a emergent event to adequately respond to the circumstances faced.
- **First due area:** A portion of a jurisdiction that a specific company(s) is assigned to arrive on scene first.
- **Response reliability:** The probability that the "required amount of staffing and apparatus that is assigned will be available when an emergency call is received and dispatched."

Interdependency Among Local Fire & EMS Forces



CY2015: **Automatic Aid by PFD to CYFD = 603 calls**
Automatic Aid by CYFD to PFD = 1,118 calls

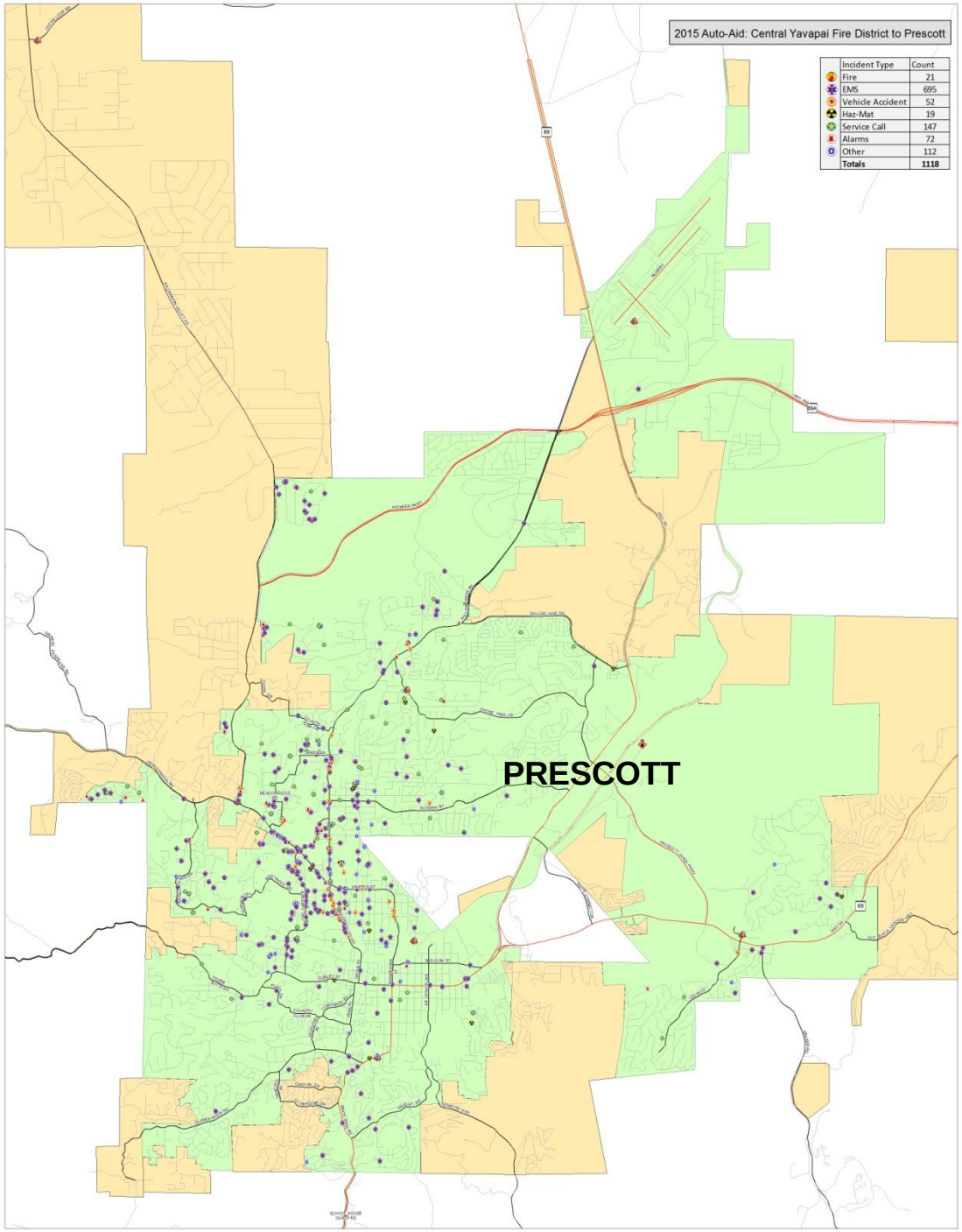
PRCC Partners

YRMC

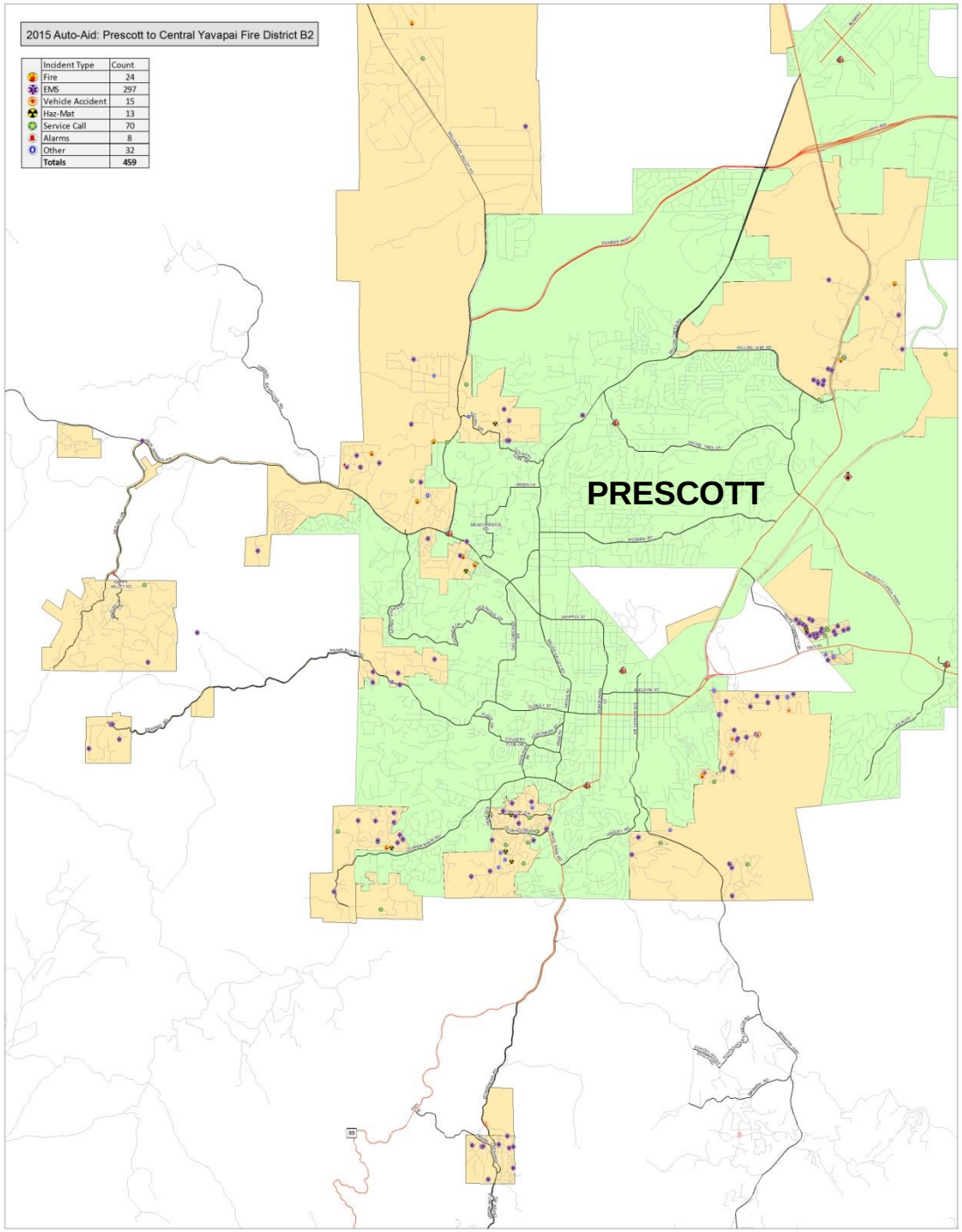
Citizens

PFD

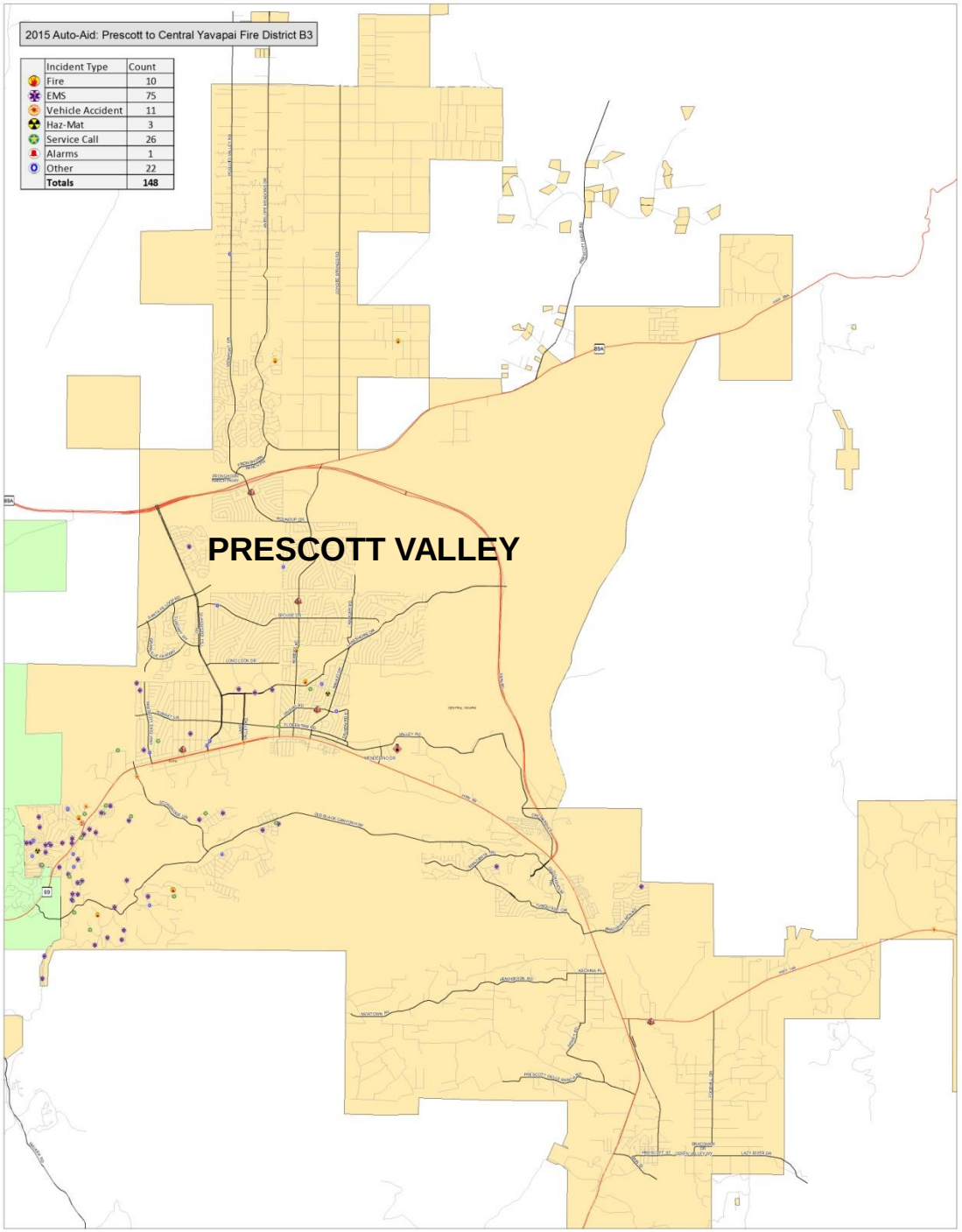
LLA



2015 CYFD Auto-Aid to Prescott



2015 Prescott Auto-Aid to CYFD (Area B2)



2015 Prescott Auto-Aid to CYFD (Area B3)

System Reliability Within City of Prescott

RELIABILITY REPORT

First Due ZONE

STATION 71		STATION 51		STATION 73		STATION 74		STATION 75		STATION 72 (6TH ST)		
Z01	**%**	**Z02**	**%**	**Z03**	**%**	**Z04**		**Z05**	**%**	**Z06**	**%**	**TOTAL**
1	0.06%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1
2	0.11%	5	0.43%	0	0.00%	1	0.06%	26	3.22%	2	0.10%	36
56	3.17%	914	78.52%	6	1.28%	69	4.21%	4	0.50%	131	6.68%	1,181
0	0.00%	3	0.26%	0	0.00%	0	0.00%	3	0.37%	2	0.10%	8
0	0.00%	2	0.17%	0	0.00%	1	0.06%	1	0.12%	0	0.00%	4
0	0.00%	5	0.43%	2	0.43%	1	0.06%	0	0.00%	0	0.00%	8
1	0.06%	1	0.09%	0	0.00%	0	0.00%	1	0.12%	1	0.05%	4
0	0.00%	1	0.09%	6	1.28%	0	0.00%	0	0.00%	0	0.00%	7
0	0.00%	0	0.00%	0	0.00%	1	0.06%	0	0.00%	0	0.00%	1
2	0.11%	2	0.17%	1	0.21%	2	0.12%	0	0.00%	1	0.05%	8
0	0.00%	2	0.17%	1	0.21%	0	0.00%	0	0.00%	0	0.00%	3
1,420	80.50%	33	2.84%	0	0.00%	12	0.73%	16	1.98%	245	12.50%	1,727
243	13.78%	148	12.71%	3	0.64%	44	2.69%	52	6.44%	1,503	76.68%	1,993
4	0.23%	3	0.26%	419	89.15%	187	11.42%	8	0.99%	5	0.26%	627
13	0.74%	37	3.18%	28	5.96%	1,228	74.97%	31	3.84%	26	1.33%	1,364
21	1.19%	7	0.60%	4	0.85%	92	5.62%	666	82.43%	44	2.24%	835
1	0.06%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1
0	0.00%	1	0.09%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1
1,764	100.00%	1,164	100.00%	470	100.00%	1,638	100.00%	808	100.00%	1,960	100.00%	7,809
	19.50%		21.48%		10.85%		25.03%		17.57%		23.32%	

The percentage of time that the “required amount of staffing and apparatus assigned was available when an emergency call was received and dispatched in 2015”

Systems Elsewhere in AZ and Across the USA

- "Dual silo" systems consisting of separate fire and EMS governmental units (common to major metro areas located primarily east of the Mississippi River)
- All-volunteer systems (a few in AZ, although primarily serve rural communities with a population base of 5,000 or less)
- Combination systems (limited number in AZ; use paid on-call, reserves, and or volunteers to supplement and round out the available career force to provide needed critical tasks in support of emergent events)
- Career systems (majority type in AZ; use an all-career, professional force to provide all-risk services within most suburban, urban, and metropolitan areas, and some rural locations)

History of Personnel Resource Levels

- In 1991 operations staffing was established at 18 personnel per crew
  - Minimum staffing of 16 personnel on-duty
- The number increased to 19 in 2008 when an Aircraft Rescue Firefighter (ARFF) Engineer was added, with minimum staffing of 16 personnel, including 1 FTE to provide ARFF coverage
  - Minimum staffing of 17 personnel on-duty, including 1 FTE for 24-7 ARFF coverage
- Three (3) firefighter positions are currently vacant (frozen), resulting in 18 personnel per crew
- Current (2016) staffing for operations is 18 personnel per crew
  - Minimum staffing of 16 personnel on-duty to provide all-risk response coverage, including 1 FTE to provide ARFF coverage at the Prescott Airport 24/7/365
  - With fewer personnel to call back, on days when 2 personnel are on approved time off, a temporary brown-out occurs at the affected station, and a rapid response vehicle with 2 personnel is activated
- Calls for emergency service increased 186% from the 2,803 in FY1991 to 8,014 in FY 2015

The “All-Risk” Deployment Model
Why and How We Do What We Do

Priority-Based Dispatching of PFD and Regional Partners by the Prescott Regional Communications Center (PRCC)

- Computer-aided dispatching (CAD) identifies the closest, most suitable type of emergency response unit to send based upon a pre-determined "response package". Calls to the E-911 system are processed by a PRCC call-taker who "prioritizes the call" for either fire or police, and then "hands it off" to a dispatcher. The dispatcher assigns it to the most suitable available and closest unit(s), and maintains communication with the responding forces throughout the call for service.
- All response protocols have some sort of "tiered-approach" to minimize (optimize) the number of responders for a given "risk-category" (EMS, motor vehicle accidents, fires, hazmat, technical rescue, wildfire, public assists, etc.).

Fire “All-Risk” vs. Ambulance-Only Operations

- Fire stations, and associated apparatus, are routinely stationed at strategic locations in a community, and Prescott is no exception. These locations take into account the topography, roads, and other infrastructure, Insurance Services Offices (ISO) recommendations on time/distance requirements for ratings. Over time, city boundaries change, and the station locations may or may not have also changed.
- In contrast, ambulances are provided and deployed by the method of systems status management (SSM), which uses “posting locations” in lieu of static station locations, to cover the geographical area(s) they serve, consistent with the Certificates of Necessity (CONs). Sometimes, the same ambulance company covers more than one CON, expanding their actual coverage across hundreds of miles.


PRESCOTT FIRE DEPT.
PRC
E71
PARAMEDIC
ENGINE CO.
"Excellence in Service"
STIHL


"your EMS experts"
LIFE LINE
AMBULANCE
ACCREDITED
PARAMEDIC UNIT
AMR
LIFE LINE
AMBULANCE
lifelineaz.com
Moore medical
LIFE LINE
LIFE LINE

Critical Tasks that Determine the Type(s) of Responding Unit(s)

- The ability to deliver the critical tasks needed for emergencies to which a fire department responds is determined by personnel and apparatus, how many sets of hands, and the equipment that can be made available.
  - Fire suppression call (based on a 2,000 square ft. house and contents fire) requires13 personnel
  - Advanced Life Support EMS call (based on management of cardiac arrest patient) requires 2 paramedics and 2 emergency medical technicians (EMTs)
  - Basic Life Support EMS call requires a minimum of 2 EMTs
  - Special operations (based on elevated call for service for hazardous materials or technical rescue) also require 13 personnel
  - Wildfire (based on initial attack assignment) requires 13 personnel supplemented by other response parties (USFS/State Fire, etc.)

Regulations and Standards that Impact Services, Response, and Operating Models

- A vast array of legislative action reinforced the operational models and critical task matrix described earlier. Many of these actions were driven by response outcomes which placed added risk on the population and/or first responders.
- Codes of Federal Regulations (CFR). CFR 29 1910 series deals primarily with employee safety and was promulgated by the efforts undertaken by the Occupational Safety and Health Administration (OSHA). CFR 40 series, although not as broad in scope for governance, deals with environmental protection as administered by the Environmental Protection Agency (EPA).
- Under the OSH Act, employers are responsible for providing a safe and healthy workplace. OSHA's mission is to assure safe and healthy workplaces by setting and enforcing standards that require/mandate training, outreach, education, and assistance. Employers must comply with all applicable OSHA standards. Employers must also comply with the General Duty Clause of the OSH Act, which requires employers to keep their workplace free of serious recognized hazards.

Regulations and Standards that Impact Services, Response, and Operating Models

- The National Response Framework is a guide for national and local responses to all types of disasters and emergencies. It is built on scalable, flexible, and adaptable concepts identified in the National Incident Management System (NIMS) to align key roles and responsibilities across the nation. This framework describes specific authorities and best practices for managing incidents that range from the serious, but purely local, to large-scale terrorist attacks or catastrophic natural disasters; and prescribes the establishment of incident command role for "all-risk" response.
- The Bureau of Emergency Medical Services & Trauma System, a division of the AZ Dept. of Health and Human Services, is responsible for coordinating, establishing and administering a statewide system of emergency medical services, trauma care, and a trauma registry.
- National consensus standards and best practices (NFPA, etc.) do not have the force of law, but do provide criteria for service delivery and personnel protection, as determined by consensus of stakeholder groups.

56-hour vs. 40-hour Work Week for Operational Personnel

- The Fair Labor Standards Act of 1938 (FLSA) is a federal statute. FLSA introduced the forty-hour work week, established a national minimum wage, secured time-and-a-half for overtime in certain jobs, and limited the employment of minors in “oppressive child labor” as defined in the Act.
- A 12-hour shift normally provides 42 hours of work per week or 2,184 hours per year. A typical 8 hour day shift provides 2,080 hours per year. Each of those shifts isusually staffed with a four-platoon/shift system to provide 24-hour coverage. The 24-hour shift with a 56 hour work week (allowable by FLSA) affords 2,912 hours per year. This allows the City to staff for 24/7/365 coverage with 3 platoons versus the 4 necessary for either 12 or 8 hour tours, at one-fourth less personnel.
- In order to calculate staffing for any of the shift types, the starting point is the number of hours that are required for coverage per year. If a minimum daily staffing is seventeen personnel and there are 24 hours in a day and 365 days in a year, the base requirement for coverage is148,920 hours. Dividing the hours by 2,912 hours per year indicates a need for 51.140 personnel. Provision of time for training, and leave for vacation and illness, require additional “unscheduled” overtime to maintain coverage.

A Systematic Approach To Model Evolution

Expanded Use of Emergency Medical Dispatching

- Implementation requires a regional approach as inter-system dependency between the different fire/EMS partners is an essential element of the "total system strengths" among YRMC, Fire (Department and Districts), and Life Line Ambulance. Any sort of "unilateral move" by the City of Prescott would impact all the partners and jeopardize current agreements.
- Any shift in the model is predicated upon solid system status management by the transport company (Life Line) to ensure sufficient advanced life support (ALS) ambulances. If fire responds with an ALS level of service they are not allowed by state and base hospital protocols to "turn over" patients in those instances where patient interventions have occurred.
- Expansion of the current two-tiered EMS dispatching system would result in a net reduction to some calls for service. Specifically, it may remove an estimated 500 calls for low level care from the overall call volume. This requires stability of personnel and an upgrade of the current CAD system utilized by the PRCC before implementing the new protocols

Redeploying Physical Resources to Maintain or Enhance Response

- Fire Stations 71 and 72 carry much of the call volume load. In theory, their reliability could be enhanced by consolidating the two stations into one “super station” more centrally located “downtown.”
  - Although the downtown area could be provided more optimal deployment by repositioning a fire station, this isn’t logistically or fiscally viable.
  - Secondary issues would result during any road closures for events that today are minimized by having responding forces on both sides of downtown.
- Remaining stations are properly located to address community needs. The use of the ISO diamond was likely the primary methodology used to site those locations. This remains the preferred approach for determining station location needs because it has proven effective from a risk mitigation/loss reduction perspective.
- Relocating stations is very costly and highly unlikely to significantly reduce personnel, apparatus, or infrastructure for operation.

Outsourcing or Contracting for Services

Some operations are more suited to outsourcing/contractual arrangements. Aircraft Rescue Fire Fighting (ARFF) duties and fuels reduction are the primary services being reviewed.

ARFF

- Per FAA Part 139, the Prescott Municipal Airport is classified as an “Index A” airfield. As such, a “dedicated apparatus and single person staffing” is required in order to provide coverage during “commercial aviation scheduled take-offs and landings.”
- Other communities have successfully procured contractual ARFF services while maintaining FAA requirements.

Fuels Reduction

- This City function currently uses variable hour employees to complete grant work and chipping services, along with permanent employees to provide enforcement of the Wildland Urban Interface (WUI) Code.
- A procurement process to contract with a private vendor for like services, with compliance monitoring provided by the Fire Department, is in review

What FY17 is Looking Like

Absorbing $650,000 in reductions to implement the market compensation plan will require one or more of the following:

- Reduction of approximately 6 personnel, and continued freeze of 3 vacancies, would necessitate full closure of one of the five operating locations.
- This would reduce levels of customer service currently provided, including elimination of assistance service call types, e.g., snake removals, non-fire related water breaks, non-injury lift assists to assisted care facilities and private residences, and reduction of company based inspection program in smaller commercial properties.
- This may require adjustment to the Automatic Aid Agreement with Central Arizona Fire and Medical Authority (Central Yavapai and Chino Valley Fire Districts).

Means of Reducing/Deferring FY17 Service Impacts to the Community

- SAFER Grant Application
  - Application to fund 9 Full Time Equivalents (FTEs) as part of the Staffing for Adequate Fire Emergency Response (SAFER) Assistance to Firefighter Grant Program.
  - If awarded, the grant would provide approximately two years to make adjustments to the response models in a systematic approach in consultation with the impacted system partners.
  - The SAFER Grant does not require the City to maintain the positions after the grant expires.
- Eliminate or contract chipper services for city-wide fuels reduction and other partially grant funded fuels reduction projects
- Delay/eliminate implementation of the Market Pay Plan for Fire Personnel
- Implement a lesser or timed reduction in force and occasionally deploy a rapid response vehicle from another fire station (anticipated attrition will diminish reduction in force)

Evaluation of Other Models for Continuous Improvement and to Bring Resolution to the Longer-Term Approach

- Implement operational changes required based on funding available after the FY 2017 Budget Process
- Work with Fire Districts to determine necessary changes to Automatic Aid Agreement based on operational changes
- Conduct Standards of Cover Assessment based on remaining operational model, after FY 2017 cost reductions are made, and update in subsequent fiscal years
- Conduct procurement processes to contract out services
  - ARFF, Fuels Reduction (large property clearing and residential chipping)
- Complete review, selection, procurement, and implementation of a new CAD system to allow for medical dispatching. Work with partners to revise protocol while system is implemented.

Council Discussion

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