

# 2014 STRATEGIC PLAN



**Evergreen Fire Protection District**

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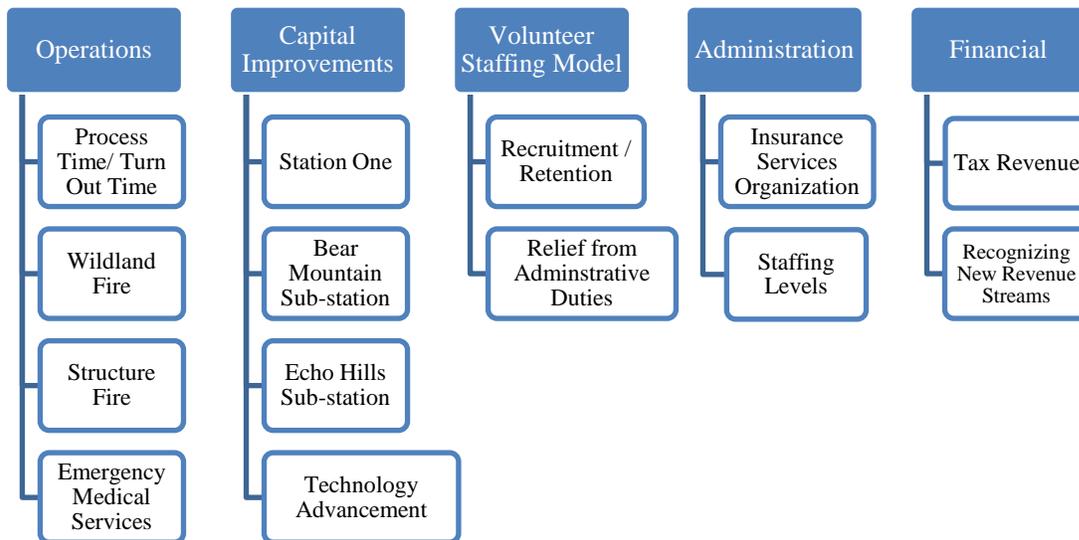
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## Introduction

Evergreen Fire Rescue (EFR) is pleased to release the 2014 Strategic Plan. This document was developed to guide the organization into the future with a strategy that will allow EFR to adapt to the changing environment of our community, our employees and volunteer firefighters and the needs of our residents and visitors. As the demographics, population and the residential and commercial properties change, this Strategic Plan must continually be revisited to ensure the needs of the community are met.

Within the following document, a Standard of Cover (SOC) and a Risk Assessment (RA) have been developed to help us identify how well we are providing emergency services to the community and what our risks are within the community. Emergency response times have been tabulated and rated against National Fire Protection Association (NFPA) standards to help us identify how well we are covering the Fire Protection District, and to allow us to set benchmarks for improvement.

A focus group was organized which was made up of a variety of representatives within the District, including Home Owners Association representatives, business owners, Special District representatives, insurance and real estate representatives, media representatives and citizens from throughout the District. We defined for them how EFR was organized, where our funding comes from and how we planned to measure our emergency response performance. We then asked the group what they felt were the challenges facing EFR in the future and what they would like us to concentrate on moving forward. The chart below shows the result of this discussion. Each of these topics is included in the final document as EFR values the input of the community.



Within the Strategic Plan we will recognize our strengths, our areas for improvement, and our focuses for the future. Each division will build a detailed plan taking into consideration timelines, cost/benefit analysis, budgetary constraints and the feasibility of implementation. We will then make decisions on each item based on their respective benefit to the district and return on investment. Progress reports will be presented to the Evergreen Fire Protection District Board as progress is made on each initiative. Evergreen Fire Rescue wishes to thank all the individuals who helped generate this document, including the community focus group, the EFR division managers and the volunteer firefighter leadership.

## What is a Standard of Cover?

Center for Public Safety Excellence (CPSE is an accreditation agency for the fire service; parent organization is the Center for Fire Accreditation International (CFAI)) defines the Standard of Cover (SOC) as “deployment analysis,” *a written procedure which determines the distribution and concentration of fixed and mobile resources*<sup>1</sup>

The purpose of the SOC is to assist the Evergreen Fire Protection District in ensuring a safe and effective response force for fire suppression, Emergency Medical Services (EMS), and other responses. For this document the Evergreen Fire Protection District (EFPD) and the Evergreen Volunteer Fire Department (EVFD) may be referred to as “District”, as Evergreen Fire Rescue or EFR. The SOC is a baseline tool for defining emergency performance standards, provides a basis for continually measuring performance improvements over time, and is a guide to policy decisions dealing with resource procurement and allocation. Also it provides a basis to evaluate the risk assessment and ensure there are adequate resources to address those risks.

As the community changes, District leaders will have a valuable tool to assist with defining appropriate levels of service. There have been many attempts in the fire service to create a standard methodology for determining the exact number of firefighters, configuration of firefighters (career, combination or volunteer), fire stations, or fire inspectors for the community needs. However, the differences in fire service challenges in each community have made it clear that there is not a “one-size-fits-all” solution. The variety of risks and levels of hazards that exist in the Evergreen community will determine the evaluation, design and development of an “all hazards” response system that identifies service levels that are safe, efficient and effective. The emergency response capabilities should be evaluated using National Fire Protection Association’s Standard 1720 *Standards for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operation to the Public by Volunteer Fire Department* as a guideline.

Attempts to control an emergency before it has reached its maximum intensity requires geographic dispersion and clustering of resources near service delivery points for maximum effectiveness against the greatest number and types of risk.

Not all areas of exposures within the District are equal. Some types of emergencies, such as multiple car collisions or hazardous materials incidents, require a prompt arrival of adequate resources to control the scene, perform rescue operations, and provide medical care. High-risk occupancies require timely arrival of fire companies to rescue occupants or to control the emergency. More resources are required to rescue people trapped in a high-risk building with a high occupancy load than would be needed in a low-risk building with a low occupancy load. More resources are required to control fires in large, heavily loaded structures than are needed for fires in small buildings with limited contents. Remote areas of the District are outside the ability to provide adequate response time, due to the locations of risks, but emergencies in these areas are a small percentage of the incidents. The SOC defines these risks and will assist the District in developing plans to mitigate them.

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<sup>1</sup> Center for Fire Accreditation International (CFAI); Fire and Emergency Service Self-Assessment Manual (FESSAM); 8<sup>th</sup> Edition; 2009

It is also understood that there is a cost to improving the deployment system. It is not financially feasible to put a fire station in every subdivision, but the SOC will determine the level of services that are within the present capability of the District.

Therefore, creating a SOC consists of an evaluation of the placement of resources (number, type and location) in relation to the potential demand placed on them by the type of risk and historical needs in the community. Furthermore, if the SOC is to be meaningful to the community, the outcome must demonstrate that lives are saved and properties are protected.

The SOC is a living document and will need to evolve over time. As the data becomes available, the changes should be tracked to ensure effectiveness.

### What is a Community Risk Assessment?

Community Risk Assessment is an in-depth look at the community’s risk in terms of fire, Emergency Medical Services (EMS) and other emergencies. The factors that drive the service needs are examined in a precise manner to determine the capabilities necessary to adequately address the risks. The assessment of risk is critical to the determination of the number and placement of resources, and to mitigation efforts. Based upon risk categories and the establishment of service management zones, the District can begin to build a system of objectively determining the capability to provide service at the level the citizens expect.

An important part of risk assessment is based on determining what the risks are and evaluating them on how frequently they may occur and their consequences. The evaluation will look back over the past five years at the types of incidents and the number of times they occur. From this information the probability of an event will be determined.

Chart 1 is used to determine the distribution and concentration of the resources throughout the District. The different quadrants require a different commitment of resources. Resources should be distributed around the District (fire stations with engines, brush engine, etc.) to intervene as individual stand-alone resources in the low and moderate risk incidents. Additional resources (water tenders, tower, etc.) should be concentrated near areas with higher or a unique risk in order to complement the individual first-due company’s operations. For instance, a single engine company can suppress a dumpster fire, but multiple resources are necessary for suppressing a structure fire or large red-flag day wildland fire.

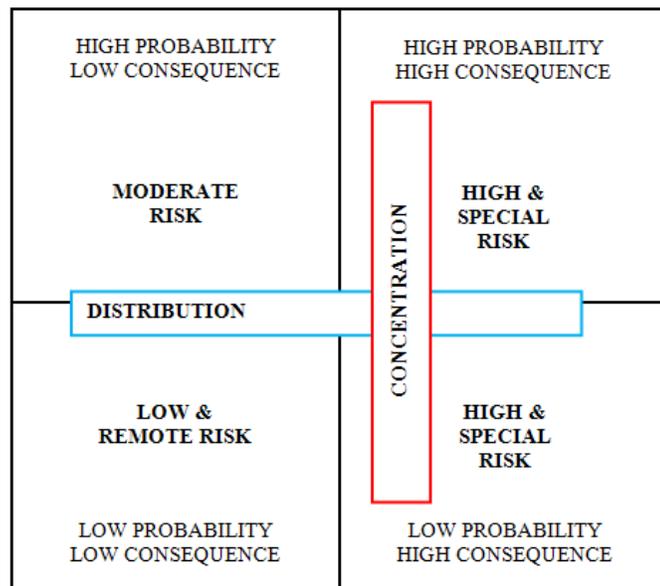
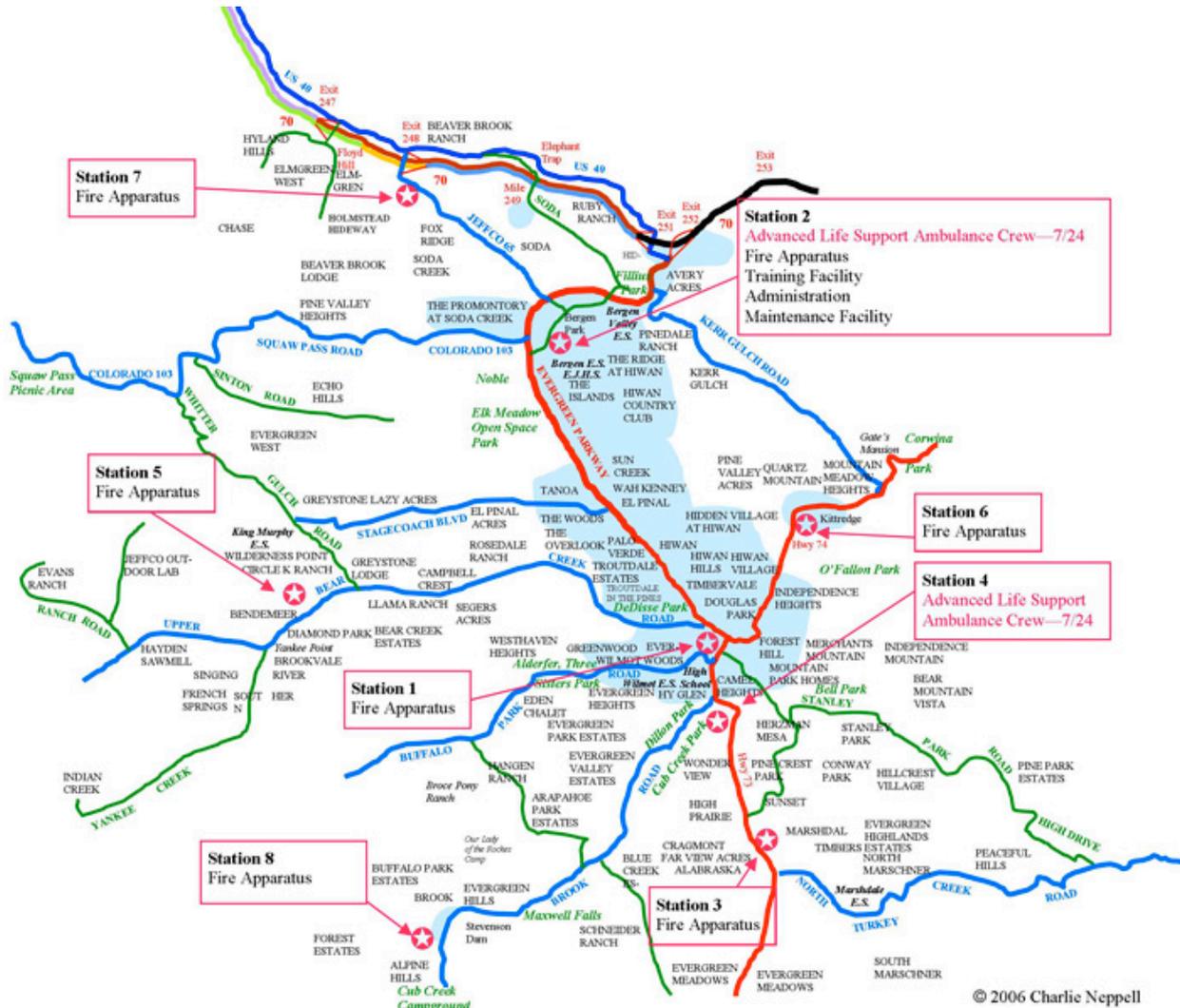


Chart 1

It is recognized that there are events that are beyond the scope of the incidents that occurred in the last five years. The risk assessment process will look at incidents that have a low probability but a high consequence (large wildland fires, commercial structure fires, etc.) and determine the threat and through the strategic planning process develop mitigation efforts. The Standard of Cover (SOC) will provide performance information on the “all risk” operations that threaten the community to propagate goals and objectives in the Strategic Plan.

Each type of incident is evaluated based on life safety (the amount of personnel and equipment required to rescue or protect the public and firefighters from life-threatening situations), economic impact (loss of properties, income or irreplaceable assets), and other impacts to the community (historic buildings or community infrastructure).

## Description of the Community



\*The area shown in light blue is the hydrant zone of the Evergreen Metro Water District.

The Evergreen Fire Protection District is a Special District organized under Colorado Revised Statutes Title 32 to provide fire protection for the community of Evergreen. The District is in the foothills west of Denver, Colorado and is 120 (74,254 acres) square miles. The District is responsible for an additional area that is within the Mount Evans Wilderness Area and is approximately 20 square miles. The terrain is the most dominant feature of the community. The district resides within the Bear Creek Basin with an altitude beginning (lower Bear Creek east of Kittredge) of 7,000 feet to the summit of Squaw Pass at over 11,000 feet in elevation.

## History

The beauty of the Colorado Foothills has always been a draw from the Arapahoe and Ute Indians to modern day residents. The area is mountainous, but is still considered foothills by Coloradans, who call the higher terrain the mountains. The area was first settled after gold was discovered in Idaho Springs and became a resting spot on the journey from Denver. From that exposure more settlers came and homesteaded the area into ranches. The Evergreen community was started in the 1860's and grew when the train came to Morrison. Evergreen became a destination and resorts were started throughout the community. These resorts supported the community along with ranching until 1950's when the resorts began to fail. More people moved in and Evergreen evolved into a bedroom community of Denver. This has led to the modern day community of Evergreen with its population of 26,334 (2010 US Census).

The development of the community was first started in the town of Evergreen along the confluence of Little Cub Creek and Bear Creek. The dam was constructed in 1922 and the community grew up in its shadow. The majority of the development was near the downtown area with small summer cabins constructed within a few miles during the 1920's and through the 1950's. This was the heyday of the resorts with a summer population of around 5,000 and a winter population of around 500. These structures were built without any building codes. A good number of these homes and structures still exist and most have been modernized. These structures provide a challenge to fire protection, as they tend to have many hidden spaces that can hide fire and can be dangerous to firefighting operations. Access to the community was along canyons from the Denver area (Bear Creek from Morrison; along US Highway 40 in Mount Vernon Canyon to the Bergen Park area; Turkey Creek Canyon to North Turkey Creek Canyon) and is still true today. Another feature of the community is the proximity to the multiple ski resorts. The resorts have always had a high impact on the economy. In the 1960's and 1970's the community began to modernize with the improvements of the roads. With Interstate 70 and State Highway 285 making the commute to Denver easier, Evergreen evolved into the community it is today.

On November 9, 1926, Riel Mercantile on Main Street started on fire. The Mountain Parks Protective Association (MPPA) was notified and a bucket brigade from the creek was assembled. MPPA was a non-profit group of community members who pledged their time and resources to patrol the collection of homes that had developed in the valleys north and south of Bear Creek in Jefferson, Clear Creek and Park Counties. Following this fire, members of the MPPA acquired a fire truck and some equipment to support their efforts.

Evergreen's residents decided to establish an official fire department in 1948. "We met at the schoolhouse, and we all chipped in to buy some equipment ...We started out with a pump and a hose and a Dodge power wagon," A.R. Clark, one of Evergreen Fire/Rescue's founding members said. Mary Quaintance donated land on Main Street for a firehouse and the new firefighters built their new home.

The Evergreen Fire Protection District (EFPD) was formed in 1950. The Board of Directors consists of five community members elected by the community to serve four-year terms. They serve as custodians of the tax payer dollars collected to support Evergreen Fire Rescue (EFR) and are ultimately responsible for EFR operation.

The Evergreen Ambulance Service (EAS) was incorporated in September of 1952 as a nonprofit organization. They were minimally equipped with modified station wagons and volunteer drivers. Most volunteers became Emergency Medical Technicians, with specific training for the 'pre-hospital' setting. The Evergreen Volunteer Fire Department became involved in providing emergency medical care through the Fire Rescue Squad. The Rescue Squad provided initial on-scene care and EAS transported the patient to the hospital. In 1984, through a coordinated fund drive and the support of the Evergreen community, a new ambulance facility was completed.

By 1985, emergency medical calls had doubled to over 600 per year. With an active membership under 20, EAS found it increasingly difficult to adequately cover all calls with strictly volunteer personnel. Emergency Medical Technicians were hired on a part-time basis for daytime coverage. In October 1985, negotiations began between EAS and EFPD to provide 24 hour per day Advanced Life Support (paramedic) coverage. On January 1, 1986, Evergreen Emergency Medical Services (EMS) came into being.

The EFPD Emergency Medical Services Division and Fire Operations Division (EVFD) presently provide emergency Medical Services to the community.

The EFPD with the support of the community has seen substantial growth in the last 66 years. Today the EFPD covers 120 square miles, has 49 pieces of apparatus, eight stations, a 911 communications center, a fleet maintenance facility, a fire training building and an administration building. The EFPD employs thirty-one full time employees and 15 part time employees, with over 75 volunteer firefighters.

### Topography and Weather

The terrain provides many challenges for the provision of fire protection. The roads generally follow the creek beds and then branch off into subdivisions. These access points were developed over the past 80 years when there were no road standards. These roads can be in poor condition, can be steep and have multiple switchbacks that make apparatus access difficult. Coupled with poor weather conditions, response to the stations by the volunteers and response from the stations to the scene can be delayed. The altitude reduces the power of engines and with the need for all wheel drive the power is further reduced slowing the ability of apparatus to arrive on scene in a timely manner.

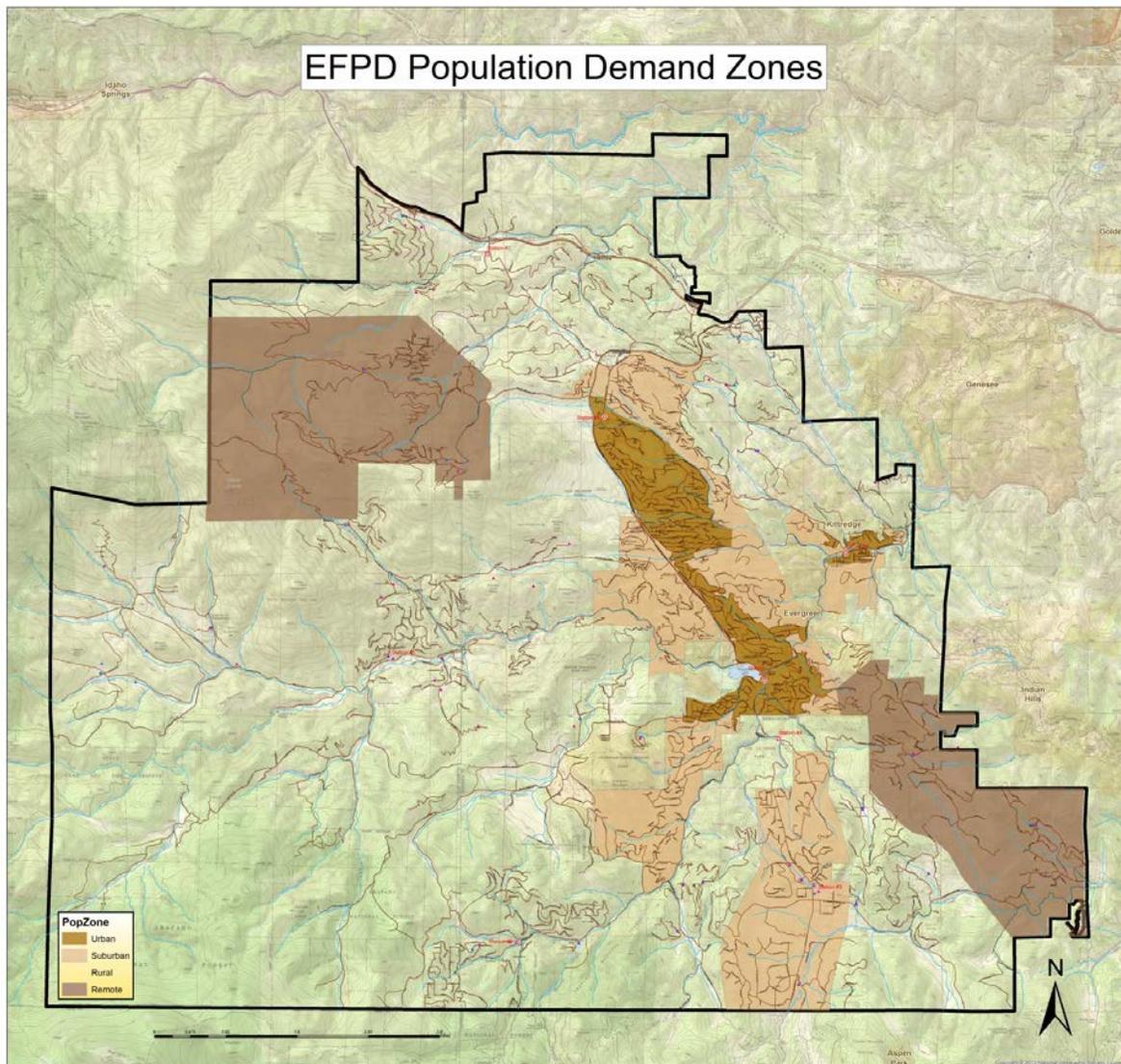
The Front Range of Colorado is a timber moraine. The combination of heavy fuels, steep terrain, poor access and the increase in the number of homes has provided a combination of a high probability and a high consequence of devastating wildland fires. Evergreen and the surrounding communities in the foothills are the Wildland Urban interface (WUI). The WUI is defined as homes and communities built in areas that are prone to wildfires. Five wildfire incidents stand out as examples: Hayman Fire (June 2002); Lower North Fork (March 2012); Waldo Canyon Fire (July 2012); High Park Fire (July 2012; map provided) and the Black Forest Fire (June 2013). There are multiple other examples of large devastating wildland fires in the area. The Lower North Fork was the first wildland fire with civilian deaths in Colorado. Over the past 10 years the western United States have experienced the advent of a new type of

wildland fire, called Mega fires. The fires in 2011 and 2012 in New Mexico and Arizona of more than 300,000 acres, the Hayman Fire in Colorado 138,000 acres, and the Mustang Complex in Idaho 335,000 acres are becoming more common. The Colorado Front Range had the High Park fire in 2012, with 87,284 acres.

The weather can vary from dry windy red flag days with extreme wildland fire conditions to extreme snow storms that paralyze the community for a number of days, sometimes all in just a couple of days' time. Structure fires generally occur during poor weather. Civilians are using wood stoves, heat tape, and heating systems that increase the probability of fires.

### Population

Using the 2010 US Census data the population of the District is 26,334, and there are just fewer than 12,000 homes. The demographics are predominately white middle/upper class families. The older areas generally are neighborhoods with predominately blue collar and the newer developments tend to be white collar professional.



The Urban Demand Zone is defined as having a population greater than 1,000 per square mile and is generally within the water district. The Suburban Demand Zone has a population of 500 to 1,000 per square mile and generally surrounds the water district. The Rural Demand Zone has a population of less than 500 per square mile and makes up the largest demand zone in the district. The Remote Demand Zone is defined by NFPA 1720 as areas farther than eight miles from a fire station. The District has no areas farther than eight miles from a fire station, but for this plan, EFR has chosen to recognize two areas as remote due to terrain and road conditions affecting response time. These areas are Bear Mountain and Echo Hills.

## The Divisions

### Administration

The Administration Division currently includes four paid staff members and three contract partners. Full time employees fill the rolls of Fire Chief, Fire and Life Safety Educator /Public Information Officer, Staff Accountant and Office Manager. Internet Technology services and Human Resources are outsourced under a contract that is renewed yearly. Likewise, Financial Management is outsourced to an independent public accounting firm that specializes in the financial needs of Special Districts such as the EFPD.

The Fire Chief is the administrative head for the fire protection district and the head line officer for operations. He is responsible for supervising the division managers/supervisors, budgeting, and the daily operations of EFR. The Chief reports to the District Board of Directors. The Fire and Life Safety Educator /Public Information Officer provides oversight of all department training for pertinent certifications to be maintained, provides community education opportunities for fire prevention and safety, assists Fire Prevention with inspections and serves as the spokesperson for EFR to the media and press when necessary. The Staff Accountant is responsible for all accounts receivable /payable, payroll, and ambulance billing. The Office Manager provides administrative support as needed to each division and manages the use of the classrooms for internal meetings and area nonprofit groups.

### Communications

The Communications Division is a 911 Fire and Emergency Medical call center. It is staffed with a minimum of two communications specialists at all times under the direction of a Communications Supervisor. In addition to dispatching for Evergreen Fire Rescue the division also provides 911 services to surrounding fire districts. These additional services were started in 2014 as part of a regionalization plan for Jefferson County communications. EFR dispatches fire and emergency medical calls for the Foothills, Indian Hills, Inter Canyon, Elk Creek, and North Fork Fire Protection Districts. All of the EFR communications specialists are certified for emergency medical dispatch, which enables them to provide life saving instructions over the phone while the responders are in route to the scene.

### Emergency Medical Services

The Emergency Medical Services division provides Advanced Life Support (ALS) ambulances and paramedics. At present there are four ambulances available and four paramedics on duty at all times. All four ambulances can be sent out on calls with one paramedic and a Firefighter/EMT as a driver when needed. The EMS Coordinator directs the paramedic supervisors and the paramedics in their daily duties

and in their adherence to accepted protocols. The paramedics are quartered at Station 2 and Station 4 for coverage of both the north and south sides of the district.

### Fire Operations

The Evergreen Volunteer Fire Department (EVFD) is a 501c4 non-profit corporation that was organized in 1948 to provide a fund raising capability for fire protection. They are lead by the Deputy Chief of Fire Operations with a Volunteer Board of Directors governing compliance under the EVFD By Laws. The Line Officers, including the Deputy Chief, and the Volunteer Board of Directors, are elected positions, voted on by the firefighter membership. The volunteer firefighters are required to maintain a Colorado State Firefighter I certification, which includes Hazardous Materials Operations as well as a Cardio Pulmonary Resuscitation (CPR) certification. To be a member of the Rescue Squad, they are required to maintain a minimum of Emergency Medical Responder certification. For wildland fire response, they are required to maintain a National Wildfire Coordinators Group (NWCG) Red Card certification. All of these certifications are obtained through the ten-month Fire Academy, held each year for new members, and maintained with monthly training.

### Fire Prevention

The Fire Prevention Division includes the Fire Marshal and a Fire Inspector, with part time support from the Fire and Life Safety Educator, doing inspections of the schools. This division is responsible for construction drawing reviews, driveway inspections and commercial building inspections for the EFPD, Elk Creek Fire Protection District and the Foothills Fire Protection District. Elk Creek and Foothills are done under contract. Fire Prevention also is responsible for the operations pre-plans of commercial buildings.

### Maintenance

The Maintenance Division consists of a Maintenance Manager, a Lead mechanic and a Mechanic. Their responsibilities include preventative maintenance and repair of the apparatus and facilities. They also contract maintenance for the surrounding districts apparatus. These include Elk Creek Fire, Indian Hills Fire, Highland Rescue, Foothills Fire, Inter Canyon Fire, Genesee Fire and Evergreen Metro District.

## Driving Factors of this Strategic Plan

### Revenue and Expenses

In 1950 the Evergreen Fire Protection District (EFPD) was incorporated to help provide funding to the Evergreen Volunteer Fire Department. The EFPD collects property taxes to fund capital outlays; staffing (including dispatcher, EMS transport paramedics, mechanics, and administration); building and apparatus maintenance, fire prevention and training etc. The 2014 mill levy is 9.135. This includes a 1.46 mill for bond repayment voted on and approved by the district in 2002 to fund the construction of fire stations and purchase of apparatus. The EVFD acts as a work force foundation for fire suppression and rescue operations. They may collect donations to be used to pay for additional continuing education and for expenses supporting the volunteers training or response.

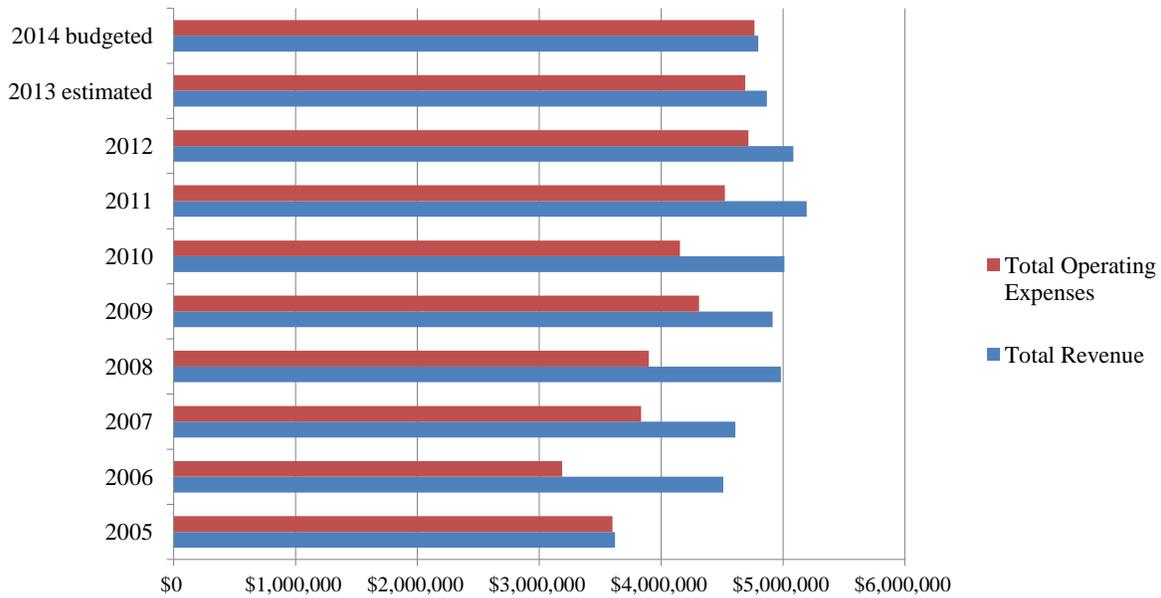


Chart 2: Total Operating Expenses vs. Total Revenue 2005 - 2014

The last mill levy increase for the District was approved in 2005. The graph above shows the District revenue and operating expenses increasing until 2011, when the economy's downturn started to affect property evaluations, reducing revenue. In 2012, the operating budget was stabilized to keep pace with the reduced revenue. The EMS and Administration divisions make up a large percentage of the budget, with payroll and benefits comprising 65% - 75% of the budget as shown in the graph below.

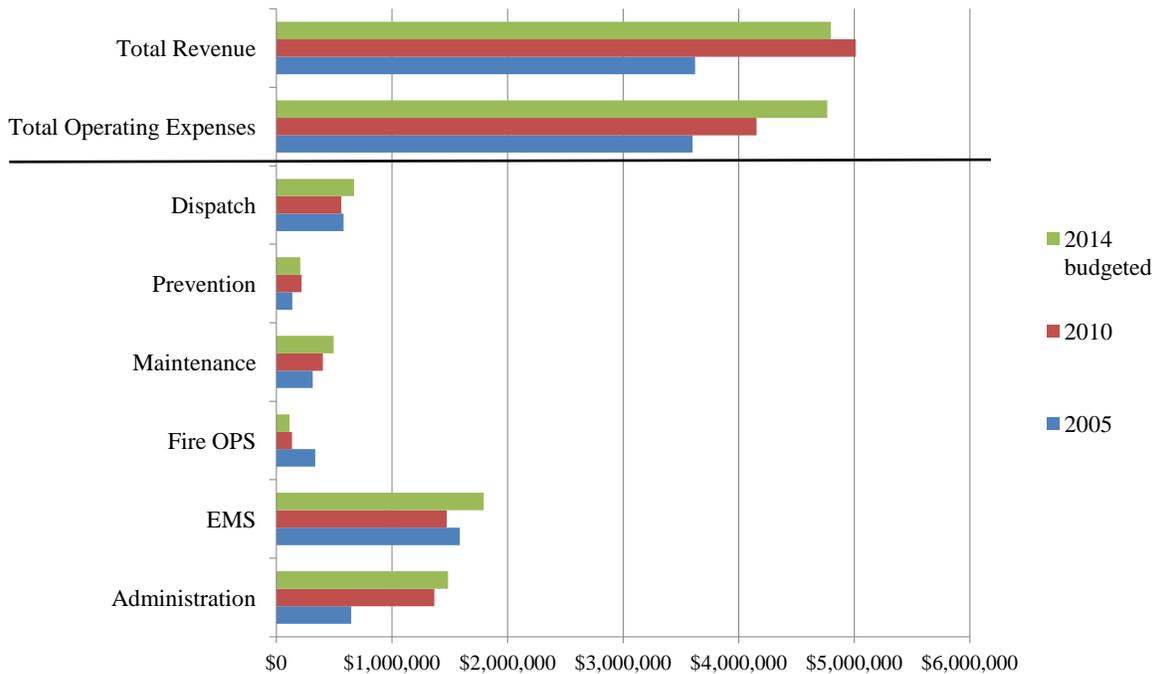


Chart 3: Expenses by Division 2005, 2010, and 2014

The EFPD mill levy is the seventh highest out of ten surrounding agencies. The bond was refinanced in 2013, resulting in a savings of over \$600,000 over its ten-year life. When the bond is paid in full, EFPD will have the second lowest mill levy at 7.675. As of September 2014 the surrounding districts mill levies were:

Elk Creek Fire	7.415
Coal Creek Fire	8.000
Genesee Fire	8.000
Fairmont Fire	8.636
Golden Gate Fire	9.016
Evergreen Fire Rescue	9.135 (-1.46 = 7.675)
Foothills Fire	9.196
Inter-Canyon Fire	10.592
North Fork Fire	12.000
Indian Hills Fire	12.141

### Insurance Services Office Rating (ISO)

In 2010 the District conducted an ISO audit. ISO collects and evaluates information from communities on their structure fire suppression capabilities. ISO analyzes the data using their Fire Suppression Rating Schedule (FSRS™) and then assigns a Public Protection Classification (PPC™). The fire department, the fire alarm and communications system and the water districts are evaluated during this audit.

Although not all insurance companies use this rating system when calculating insurance rates on a property, we have selected this as a standard of measure.

Evergreen improved their PPC from a split rating of 5, 9, and 10 to a split rating of 5, 6, and 10. The first number, 5, applies to properties within 5 road miles of a recognized fire station and within 1,000 feet of a fire hydrant or alternate water source. The second number, 6, takes into account the alternate water source applying to properties within 5 road miles from a recognized fire station with no fire hydrant distance requirements. ISO has recognized the fire departments water shuttle capabilities, meaning the ability to truck water to a fire scene. This was a substantial improvement from the previous PPC of 9, which is defined as a fire suppression system that includes a creditable dispatch center and fire department but no FSRS creditable water supply. The last number, 10, applies to properties over 5 road miles from a recognized station.

ISO reports their findings on two separate reports. One report is for the hydrant district and includes the Metro Districts and Water Districts in its determination. The second report excludes the hydrant districts and includes the fire departments water shuttle capabilities. The three components of the reports and the scoring are:

10% of Rating from Fire Alarm and Communication System:

Rating our dispatch center

50% of Rating from Fire Department:

Rating our equipment, personnel and training

40% of Rating from the Water Supply System:

Rating the supply system made up of the hydrants, the hydrant inspection or condition, and the water shuttle.

**5/10 Rating for Hydrant District**

FSRS Item	Earned Credit	Credit Available
Receiving & Handling Fire Alarms:		
Credit for Telephone Service	1.8	2
Credit for Operators	1.62	3
Credit for Dispatch Circuits	3.5	5
<b>Credit for Receiving and Handling Fire Alarms</b>	<b>6.92</b>	<b>10</b>
Fire Department:		
Credit for Engine Companies	7.69	10
Credit for Reserve Pumpers	0.56	1
Credit for Pumper Capacity	5	5
Credit for Ladder Service	3.95	5
Credit for Reserve Ladder and Service Trucks	0.45	1
Credit for Distribution	2.15	4
Credit for Company Personnel	1.52	15
Credit for Training	1.71	9
<b>Credit for Fire Department</b>	<b>23.03</b>	<b>50</b>
Water Supply:		
Credit for Supply System	25.22	35
Credit for Hydrants	2	2
Credit for Inspection and Condition	0.53	3
<b>Credit for Water Supply</b>	<b>27.75</b>	<b>40</b>
Divergence:		
Divergence	-4.66	
<b>Total Credit</b>	<b>53.04</b>	<b>100</b>

*Chart 4: Public Protection Summary Report, Evergreen Fire Protection District, Colorado, November 15, 2010*

**6/10 Rating for Water Shuttle**

FSRS Feature	Earned Credit	Credit Available
Receiving & Handling Fire Alarms:		
Credit for Telephone Service	1.8	2
Credit for Operators	1.62	3
Credit for Dispatch Circuits	3.5	5
<b>Credit for Receiving and Handling Fire Alarms</b>	<b>6.92</b>	<b>10</b>
Fire Department:		
Credit for Engine Companies	5.33	10
Credit for Reserve Pumpers	0.38	1
Credit for Pumper Capacity	5	5
Credit for Ladder Service	3.16	5
Credit for Reserve Ladder and Service Trucks	0.39	1
Credit for Distribution	1.29	4
Credit for Company Personnel	0.48	15
Credit for Training	1.71	9
<b>Credit for Fire Department</b>	<b>17.74</b>	<b>50</b>
Water Supply:		
Credit for Supply System	16.96	35
Credit for Hydrants	2	2
Credit for Inspection and Condition	0.53	3
<b>Credit for Water Supply</b>	<b>19.49</b>	<b>40</b>
Divergence:		
Divergence	-2.65	
<b>Total Credit</b>	<b>41.5</b>	<b>100</b>

*Chart 5: Public Protection Summary Report, Evergreen Fire protection District, Colorado, January 13, 2011*

The ISO rating system is based on a standard this organization feels is a minimum a fire department should have based on fire load in the community. The rating system does not account for volunteer fire department systems that do not staff stations, so EFR lost points that cannot be achieved with a volunteer neighborhood response system. Examples of this are:

- ISO requires any overflow emergency call to transfer to an administrative line. Our overflow emergency calls transfer to another communications center.
- ISO standards state EFR should have 8 dispatch operators on at all times due to our call volume. This was calculated after reviewing call answering and dispatching times relative to NFPA 1221, which recommends that 95% of emergency calls be answered within 15 seconds and 99% of emergency calls be answered within 40 seconds. In addition, NFPA recommends that 95% of emergency calls be dispatched within 60 seconds and 99% of calls be dispatched within 90

seconds of answering the call. These were the recommendations of NFPA at the time of this ISO audit and have since been updated. (*See Chart 8, Page 23*).

- ISO requires that each firefighter receive 20 hours per month in structure fire training. EVFD offers 15.10 hours per month with 15% participation.
- ISO requires two days of leadership, management, supervisory and incident management system training per year as outlined in NPFA 1021. EFR offers 0.86 hours per year with 100% participation.
- ISO requires each driver operator receive four half-day sessions of training per year in accordance with NFPA 1002 and NFPA 1451. EFR offered four half-day sessions with 30% participation. This will be further studied and goals established for improvement in participation. New drivers are required to complete 40 hours per year of driver/operator training in accordance with NFPA 1002 and 1451. EVFD offers 6.20 hours with 100% participation.
- ISO requires the firefighters to conduct pre-planning inspections of commercial, industrial, institutional and other similar type building twice per year. We have a Fire Prevention division doing these inspections once per year with a follow up. EFR had 34% of buildings inspected at a yearly frequency of 1.00 with 7.31% participation. The alternative method of inspections completed by our Fire Prevention staff rather than by fire department company members reduces the participation of the volunteer firefighters significantly.
- ISO requires twelve on-duty and call members for each engine and ladder company and six members for each service company. The FSRS recognized an average of 0.00 on-duty personnel and 15.50 volunteers responding on first alarm to structure fires. This score is then reduced for the water shuttle rating to 5.50 volunteers responding on first alarms to structure fires as ISO takes into account that firefighters will no longer be available for fire attack in a service, ladder or engine company as they are committed to driving for the water shuttle operation. Credit for Engine Companies and Company Personnel significantly reduced the overall Fire Department Credit due to fire stations not being staffed.

The Evergreen Metro District received a significant reduction in points for the Water Supply System because ISO requires all hydrants to be inspected twice a year to include operation of the fire hydrant, leak testing and a flushing of the hydrant. The Metro District does not currently do these inspections.

ISO has since taken steps to remedy these inconsistencies. They have changed their format in 2012 from rating fire districts on the ISO standard that says what they should have to rating fire district on what they have and how well they use it. ISO also had proposed changing the audit cycle from full audits every ten years to updated audits every five years. The updated audit would review changes to the fire districts systems rather than the full audit.

The improvements to the fire protection district through the previous strategic plan cycle resulted in the significant change in the ISO rating for the District. EFPD will continue to evaluate operations and will team with the Evergreen Metro District to recognize areas where the ISO rating can be improved as it applies to the new 2012 ISO FSRS.

All the above information was taken from:

\*Public Protection Summary Report, Evergreen FD, Colorado January 13, 2011 and

### Water Supply

In the early 1950's a couple of insightful individuals started a water district and purchased very senior water rights. As a result of this action part of the District is covered by a fire protection hydrant system. The Evergreen Metro District has developed a solid and reliable hydrant system through the core of the District and in upper Kittredge. The lower Kittredge hydrant system consists of small diameter water lines, delivering low flow. The EVFD considers these hydrant flows too low for a large fire attack and relies on water shuttle operations in the interior of lower Kittredge. The Brook Forest Water District also has an organized water system with hydrants. A 125,000-gallon water tank feeds this system and its pressure is generated by the height of the tank above the system, or head pressure. Most of this system generates too low of a pressure/ volume to be considered usable during a fire attack. The water districts only cover 9.6% of the District (10.85 square miles compared to 120 for the District). The balance of the District's fire protection is accomplished by hauling water using tenders filled at cisterns, lakes, ponds and creeks. The District has developed a water cistern/water supply system that provides a two-hour water supply at 250 gallons per minute over a five-mile distance (Insurance Services Office (ISO) requirement). The actual capability for water supply is dependent on the number and capacity of the water tenders and the location of the fire in relationship with the water supply. Evergreen has 41 cisterns and dry hydrants throughout the district, both privately owned and District owned.

1	125,000 gal.	34937 Forest Estates Rd.	Brook Forest Estate Water Tower
2	40,000 gal.	EVFD Station 8	EVFD Station 8
3	3 ponds	Pvt.7982 Gray Fox Dr.	Evergreen Meadows Pond
4	1M gal.	Pvt. 7963 Brook Forest Rd.	Stevenson Dam
5	10,000 gal.	Pvt. Blue Creek Rd. & Lynx Lair Rd.	Blue Creek Estate Cistern
6	10,000 gal.	Pvt. Blue Creek Trl. & Red Tail Trl.	Blue Creek Trail
7	10,000 gal.	Pvt. 6871 Hwy 73	Evgn Professional & Tech Center
8	30,000 gal.	EVFD Station 3	EVFD Station 3
9	60,000 gal.	Pvt. NW corner Hwy 73 & NTCR	Bus Barn Cistern
10	Small Pond	Pvt. Timbers Dr. & NTCR	The Timbers
11	Small Pond	Pvt. Alabraska Ln. & Kiem Rd.	Alabraska Pond
12	1.5M gal.	Pvt. Little Cub Crk Rd & Lost Creek Rd	Lost Creek Ranch
13	30,000 gal.	Turkey Ln.	Turkey Lane Cistern
14	10,000 gal.	Pvt. 5340 Three Sisters Cir.	Evergreen Heights Cistern
15	20,000 gal.	Bear Mtn. Dr. & Stanley Park Rd.	Bear Mountain Cistern
16	20,000 gal.	Pvt. 24500 block of Chris Dr.	Chris Drive Estate – Auto-barn & House
17	Bear Creek	Golden Willow & UBCR	Golden Willow Dry Hydrant
18	XX	Pvt. 151 Fox Hollow Ln.	Fox Hollow Cistern
19	10,000 gal.	Pvt. Ranch Rd. & Elk Crossing Ln.	Ranch Rd. & Elk Crossing
20	10,000 gal.	Pvt. 32422 Buffalo Creek Rd.	Buffalo Creek Cistern
21	25,000 gal.	Pvt. 91 Evans Ranch Rd.	Mount Evans Outdoor Lab School
22		Pvt. 187 Fox Ridge Rd.	Fox Ridge Rd.
23	4,000 gal.	Pvt. 997 UBCR	Tallgrass Spa
24	40,000 gal.	EVFD Station 5	EVFD Station 5
25	30,000 gal.	Pvt. Songbird Rd./Hilltop Rd.	Songbird Cistern
26	40,000 gal.	2450 Witter Gulch Rd.	Witter Gulch Cistern

27	Small Pond	Witter Gulch Rd. @ Circle K Ranch Rd.	Witter Gulch Pond
28	30,000 gal.	Pvt. 32350 Alpine Ln.	Alpine Ln.
29	10,000 gal	Pvt. 200 block of Bear Claw Ln.	Timber Place / Echo Hills
30	10,000 gal.	Pvt. 2116 Wieler Rd.	Wieler Rd.
31	10,000 gal.	Pvt. Kerr Gulch Rd. & Silverdale Ln.	Silverdale Cistern
32	30,000 gal.	10 Block of Old Squaw Pass Rd.	Old Squaw Pass Cistern
33	10,000 gal.	Pvt. 1200 block of Silver Rock Ln.	Silver Rock Cistern
34	10,000 gal.	Pvt. 197 Hyland Dr.	Mountain Mini Storage
35	18,000 gal.	Pvt. Gray Hawk Dr./Lynx Lair Rd.	Craigmont
36	Pond	Pvt. Between Kilamanjaro Dr. and Silverhorn Dr.	Evergreen Highlands
37	10,000 gal	Pvt. Chateau V. Rd.	Golden Willow
38	Small Pond	Pvt. 3132 Evans Ranch Rd.	Evan's Ranch
39	Small Pond	Pvt. 3999 Evans Ranch Rd.	Evan's Ranch
40	30,000 gal.	Pvt. 3999 Evans Ranch Rd.	Evan's Ranch
41	Small Pond	Pvt. 2051 Evans Ranch Rd.	Evan's Ranch

Chart 6: Not each pond and creek listed has a dry hydrant connection

**Facilities and Apparatus** (see Appendix A, Page 35)

The department has eight stations plus a training center/administrative office/maintenance facility. Seven of the stations house fire apparatus and two stations house the EMS staff and ambulances. Station 4 houses only EMS staff.

Station One is the oldest station and was constructed in 1966. It is located below the dam in the historic downtown of Evergreen. It houses a structural engine, two heavy water tenders, a pump truck, a rescue truck and a utility vehicle. It was recognized in the 2001 Master Plan that the station is not at an ideal site. It is in a flood plain and the traffic that passes along Jefferson County 73 makes access to and from the station difficult. Any changes to Highway 73 could result in the station becoming unusable. The station protects the downtown area and surrounding sub divisions.

Station Two is in Bergen Park and is the second oldest station. The original station was constructed in 1977 and has been remodeled multiple times to accommodate the expanding needs of the community. It presently houses the EMS staff, two ambulances (one staffed full time), a structural engine, tower, heavy water tender, heavy rescue and a brush engine,. The station 2 campus also houses the administrative offices, training building, communications center and the apparatus maintenance facility. The meeting/training rooms in the administration building are available to the public and have a high occupancy record.

Station Three protects Marshdale Park, the southern commercial area and the school complex (Marshdale Elementary and West Jeffco bus barn) and surrounding subdivisions. The site of the station was purchased and construction was completed in the early 1990's. It houses a structural engine, water tender, brush engine, reserve structural engine and an investigations truck.

Station Four is unique in that the district did not construct the building; the Evergreen Ambulance Service constructed the building using donations. The station houses two ambulances and a utility vehicle. One ambulance is staffed full time. It was constructed in 1986 and needs to be updated. The site of the building is suitable for providing service to the downtown areas and the southern part of the District.

Station Five protects the Upper Bear Creek Area. The station was reconstructed as a part of the 2002 and 2005 mill levy increase and bond election. The station started out as a rented garage that housed a brush engine modified to fight structure fires. The District called this a SCAT engine (Self Contained Attack Truck). The concept was that this light engine could knock down the fire and hold it at bay until the heavier apparatus could come from the core area. The idea proved to be unworkable because the support apparatus were too far way. The current station houses a wildland urban interface engine and tactical water tender.

Station Six protects the Kittredge area. It houses a structure engine and a brush engine. It was constructed using the 2002/2005 mill levy increase and bond election.

Station Seven protects the Floyd Hill, Northern Soda Creek and the Interstate 70 corridor. The station houses a wildland urban interface engine, brush engine and tactical water tender. It was constructed using the 2002/2005 mill levy increase and bond election. An additional bay door was added to the structure in 2014 to improve access for the brush engine.

Station Eight protects the Brook Forest Area. The station houses a wildland urban interface engine and tactical water tender. It was constructed using the 2002/2005 mill levy increase and bond election.

Apparatus placement has changed many times over the years to accommodate the requirements of the district and the station locations. Currently, the philosophy for placement involves wild fire deployment and the needs in the core parts of town. The outlying stations are equipped with urban interface engines and tactical tenders. An urban interface engine is a structural firefighting type 1 engine, which is also equipped with wildfire hose and tools for wildland fire attack. A tactical tender is used for water shuttles and is equipped with wildfire hose and tools. Station 3, station 6 and station 7 are equipped with apparatus that can be fully staffed for wildland fire deployment out of the district. Station 7 has a type 6 brush truck and a tactical tender. Station 6 is equipped with a structural firefighting engine and a type 6, brush engine. A tactical tender or heavy tender has not been placed at station 6 as station 1 is very close and much of the Kittredge area has fire hydrants.

Station 1 and Station 2 house the heavy, or support type S1 and S2 tenders that are used for water shuttles. The type 7 brush engines are located at station 1 and station 2 for fast attack on wildland fire.

These trucks are kept in the core of the district because they are required to roll on any structure or wildland fire throughout the district and having them centralized allows the best opportunity for a driver to access them.

### [NFPA 1720](#)

#### **Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments**

The NFPA standard contains minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by substantially all volunteer fire departments. Also included are minimum requirements for managing resources, incident management, training, communications and pre-incident planning.

The standard outlines minimum performance standards for apparatus/volunteer firefighter turnout and response times. Turnout times are measured from the conclusion of the processing time (time for a dispatcher to answer the 911 call and process information to the point the volunteers are notified or dispatched) to the apparatus/volunteer goes in service over the radio. The travel time is from the end of the turnout time to when the apparatus/volunteer arrives on scene and announces they are on scene using the radio.

The following chart is reproduced from the 1720 standard and outlines the minimum staffing and response time standards. Within the NFPA 1710, which sets a standard for career fire departments the standard is for a 6-minute total response time (includes process, turnout and travel times). This time is based on two known principles using the time temperature curve and the time it takes for the brain to die after the heart stops. But there is nothing within the 1720 standard that outlines why these times have been set.

**Table 4.3.2 Staffing and Response Time**

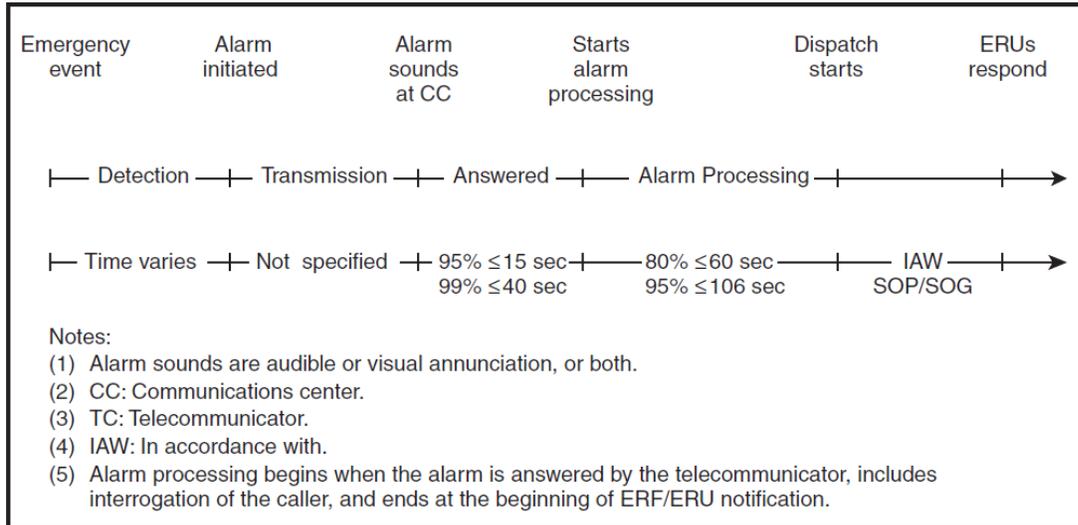
<b>Demand Zone<sup>a</sup></b>	<b>Demographics</b>	<b>Minimum Staff to Respond<sup>b</sup></b>	<b>Response Time (minutes)<sup>c</sup></b>	<b>Meets Objective (%)</b>
Urban area	>1000 people/mi <sup>2</sup>	15	9	90
Suburban area	500-1000 people/mi <sup>2</sup>	10	10	80
Rural area	<500 people/mi <sup>2</sup>	6	14	80
Remote area	Travel distance ≥ 8 mi	4	Directly dependant on travel distance	90
Special risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90

*Chart 7: <sup>a</sup>A jurisdiction can have more than one demand zone. <sup>b</sup>Minimum staffing includes members responding from the AHJs department and automatic aid. <sup>c</sup>Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table.*

**NFPA 1221**

**Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems**

Process Time for a dispatch center is defined by the NFPA as the time interval from when the alarm is acknowledged at the communication center until response information begins to be transmitted via voice or electronic means to emergency response facilities (ERFs) and emergency response units (ERUs).



**FIGURE A.7.4.1(a) Alarm Time Line Where Primary PSAP Is Communications Center.**

Chart 8: NFPA 2013

Alarm Processing Times 2008 - 2014							
Per NFPA 1221 Standards - Calls Answered and Toned within:	2008	2009	2010	2011	2012	2013	2014
60 seconds	39%	52%	49%	57%	60%	51%	56%
106 seconds	76%	82%	82%	72%	85%	81%	81%
Total Calls:	1895	1744*	2034	2101	2169	2142	1283**

Chart 9: \* There are 321 calls missing data in High Plains for 2009. \*\*2014 data is for January 1 through August 31. \*\*\* Residential fire alarms are not included in this data.

The NFPA standard states that 80 percent of the 911 calls need to be answered and processed within 60 seconds and 95 percent of the calls need to be answered and processed within 106 seconds. As shown by the chart above EFR will continue to work toward achieving this standard.

## Risk Assessment

### Structure Fire Risk Assessment

Within the District there is a mix of light industrial, commercial and residential structures. The industrial is generally centered on Bryant Drive with some light industrial scattered throughout the district. There is no heavy industrial within the district. The majority of industrial is based on supporting the resident population with car repair, construction, etc. There has been very little history of fires in these exposures.

The commercial exposures are centered on supporting the resident population with grocery stores, office buildings, restaurants, etc. The majority of these commercial areas were constructed in the recent past and generally these structures have sprinklers. The exception is the older buildings. These are generally in the downtown and core area of the district. With the exception of destructive fires in the downtown areas (Evergreen Hotel fire) there has been very little history of fires in these exposures.

There are a few apartment/townhouse/condominium complexes scattered throughout the district. The majority are located in the Hiwan subdivision, with a few in the El Pinal area. There has been very little history of fires in these exposures.

The district has some senior living exposures and they have sprinklers. No significant risk fires have been reported in these exposures within the scope of the SOC.

The highest instances of structure fires are in residential exposures. These fires occur in all types of homes from old cabins to new residences. The older residential exposures have higher instances of fires, but as the homes are replaced with new construction following current fire codes, the risk of fires has gone down. A marked increase in the size and the location of the structures creates a more recent concern. Some of the new homes are exceeding 10,000 square feet and are being constructed in areas with limited access and safe access on only one side. This is generally because the sites for building are limited. Some of these newer residences are long distances from any station. These areas include the top of Bear Mountain and the Evans Ranch area. The Bear Mountain and Evans Ranch area do not have an organized water system and require water shuttle operations. All of these factors have increased the complexity of those fires.

<b>Structure Fires by Year</b>	
<b>Year</b>	<b>Count</b>
2008	74
2009	77
2010	71
2011	52
2012	57

*Chart 10*

<b>Structure Fires by Station 2008 - 2012</b>		
<b>Station</b>	<b>Count</b>	<b>Percentage</b>
1	229	69.2%
2	58	17.5%
3	18	5.4%
5	4	1.2%
6	11	3.3%
7	8	2.4%
8	3	0.9%

*Chart 11*

Over the past five years there have been 331 structure fires (*Chart 10*). The reduction in fires in 2011 and 2012 may be a trend, but more years of data will be necessary to determine if this will continue.

The station count (*Chart 11*) shows the vast majority of incidents are in the core area of the district. There may be many factors that influence this count, but the most likely is the concentration of older residences and commercial structures. Station one also has the highest density of homes.

The Station 1 Planning Zone (Downtown) is considered high consequence and high probability for structure fires. The high probability is based on a history of commercial fires and the high consequence is based on the economic impact and historical nature of the area.

The Station 2 Panning Zone (Bergen Park) is considered a low consequence and a high probability as the commercial structures generally have sprinkler systems and the homes are newer.

The Station 3 Planning Zone (Marshdale) is considered low consequence and low probability, as there are few commercial structures, some historic structures and the homes are generally newer.

The Station 5 Planning Zone (Upper Bear Creek) is considered low consequence and low probability, as there are very few commercial structures, some historic structures and the residences are becoming newer and are sparse, spread over a large area.

The Station 6 Planning Zone (Kittredge) is considered moderate consequence and low probability. There is an economic and historical component, with both older homes and newer homes.

The Station 7 Planning Zone (Floyd Hill) is considered low consequence and low probability, as there are light commercial and newer homes.

The Station 8 Planning Zone (Brook Forest) is considered low consequence and low probability. There are few commercial structures and a historic component.

<b>Structure Fires by Demand Zone</b>		
<b>Population Zone</b>	<b>Count</b>	<b>Percentage</b>
Urban	80	24.2%
Suburban	107	32.3%
Rural	105	31.7%
Remote	11	3.3%
Out of District	28	8.5%

*Chart 12: Refer to EFPD Population Demand Zone Map, Page 11*

The count for the population zones is reflective of the overall incidents (Chart 12). The out of district incidents are generally mutual aid, but a few may be in the areas that the district is responsible for through the Jefferson County Annual Operating Plan (AOP), for example, the “no-mans land” areas north of I-70. The data shows no real trend that can be tracked.

## Engine Performance to Structure Fires 2008 - 2012

Zone	Process	Turnout	Travel	Total Response Time	1720 Turnout & Travel	1720 Performance Comparison	Incident Count	Percent of Structure Fires
Urban	0:02:13	0:14:22	0:09:52	0:26:27	0:24:14	29.7%	81	24.5%
Suburban	0:01:43	0:11:11	0:07:59	0:20:53	0:19:10	47.7%	114	34.4%
Rural	0:02:11	0:14:46	0:13:22	0:30:19	0:28:08	47.5%	108	32.6%
Remote	0:02:33	0:10:53	0:24:09	0:37:35	0:35:02	38.8%	15	4.5%
Out of District	0:03:02	0:22:02	0:26:32	0:51:36	0:48:34	50.0%	13	3.9%
						Total	331	100.0%

*Chart 13*

The times in Chart 13 show the engine performance to structure fires for all five years (2008 to 2012). The Turnout time's range from 10 minutes 53 seconds to 14 minutes 46 seconds, with 22 minutes 2 seconds attributed to Out of District fires. The out of district 22 minute 2 second turnout time can be discounted due to the policy of fully staffing an engine prior to leaving to a mutual aid incident.

Process and turnout times can be reduced and should be addressed in the strategic planning process. Travel times are more difficult to reduce, the apparatus/volunteers are traveling at safe speeds, all traffic lights have interruption devices installed (the apparatus emits a light signal that turns the traffic light green in the direction the apparatus is traveling) and the terrain issue has been mitigated by putting very large engines in the apparatus. The travel time cannot be reduced much more. The 1720 Performance Comparison shows the performance should be in the 70% to 80% range. EFR should study and develop a benchmark performance standard that is achievable and effective based on the neighborhood response model as 1720 assumes staffed fire stations and response times based on demand zones of 9 minutes for urban areas, 10 minutes for suburban areas, 14 minutes for rural areas and a time dependent on travel distance for remote areas. Response Time is defined as the time from the completion of the dispatch notification to arrival on scene. *(Chart 7, Page 22, NFPA 1720 Table 4.3.2, Staffing and Response Time)*

### Effective Response Force with Volunteer Staffing

The Effective Response Force (ERF) is the combination of apparatus and personnel needed on each incident to mitigate the emergency. NFPA 1720 has "Minimum Staff of Respond" based on demand zones. In the urban areas the minimum is 15, suburban is 10, rural is 6 and remote areas, 4. For special risks the Authority Having Jurisdiction (AHJ) determines the staffing.

Due to a number of factors the staffing model for the District is volunteer firefighters, with career staffing including the Chief, two in Fire Prevention, one Training Coordinator, one EMS Coordinator, three fleet

and maintenance personnel, eight full time dispatchers, twelve full time paramedics, one Office Manager, one Staff Accountant, contracted Human Resources and Financial support and part-time paramedics and dispatchers. The preferred staffing model for firefighters has been a volunteer model from the beginning of the department. In the beginning the community could not support the cost nor had the desire for a career model. Due to the size of the District and the remote location of the development the volunteers expanded with the growth from the core areas. This provided response from each subdivision to support operations within that subdivision. Neighborhood privately owned vehicle (POV) response by the volunteers has proven successful as the five-year data set shows. National data indicates volunteerism is declining and is being replaced by other models.

The career fire model places the firefighters within the stations and they respond from that location. The volunteer model puts the firefighters at home or at work and they respond either to the incident or to the stations to pick up the apparatus. If the volunteers are staffing the stations then the neighborhoods lose the staffing.

The District is unique in the size and difficulty in providing services. The area covered is very similar to the size of West Metro in square miles but that is the only area that is similar. The population of the District is 10% of West Metro's and is dispersed throughout the 120 square miles. To provide the same response times that West Metro provides would entail many additional stations and a substantially higher budget. This is fiscally unpractical and the response times would be slower than the Denver Metro fire departments due to the terrain.

The terrain is a limiting factor; the difficult access reduces the ability of responders to arrive at the incident in a similar manner as a paid department. With these factors in mind the District adopted a neighborhood response system. Encouraging residents to become volunteer firefighters to respond within the neighborhoods provides a quick response and effective early intervention. This response model provides quicker medical services or initial size up of fires. The volunteer model provides services that would be very difficult for a career fire model to match.

If the District staffed the fire stations, the firefighters would then be tied to the station as in the career-staffing model. The eight stations do not provide ideal "out of station" coverage for the district. Plus, the outlying stations only run a handful of incidents annually. The question has been asked, "Should the District provide staffing only to the core area stations since the majority of incidents occur within the core areas of the District?" This would have a positive impact on the incidents within the core area but would reduce the volunteers available in the outlying areas.

There is a third type of fire staffing model, called a combination-staffing model. This is a combination of career and volunteer firefighters. The history of these departments is not very positive. Generally combining the two models begins the process of replacing the volunteers with a fully career department. This has been proven with the Denver Metro departments, Arvada is the newest example. They added career firefighters about 10 years ago and are slowly phasing out the volunteers. This is caused by the clash of cultures between career and volunteer firefighters. The combination staffing models should be considered in the future if the volunteers cannot maintain the present services.

## Firefighter Response to Structure Fires 2008 - 2012

	NFPA 1720 Standard*	Average					90 <sup>th</sup> / 80 <sup>th</sup> Percentile				
		2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Urban	15	11.85	16.04	16.06	17.67	11.36	27.4	31.7	26.5	37.4	23.9
Suburban	10	14.19	16.39	14.04	14.29	15.27	21.0	26.2	20.4	20.8	22.4
Rural	6	18.00	18.96	15.10	23.46	14.55	26.0	34.8	25.0	50.8	19.8
Remote	4	16.00	17.00	13.00	13.67	39.00**	23.8	17.8	13.0	27.5	63.8**
Mutual Aid	No Standard	11.25	13.25	8.75	12.50	7.00	21.4	21.0	15.6	20.5	9.8

\*NFPA 1720 Standard for staffing is set at 90% for Urban and Remote zones; 80% for Suburban and Rural  
 \*\*This numbers are based on only a couple of incidents, the 63.8 is measured using on two incidents with 8 and 70 responders

Chart 14: The District is meeting the NFPA 1720 standard in all zones for staffing.

### Emergency Medical Risk Assessment

The Emergency Medical System (EMS) is based on two components, career medics and neighborhood response. The District staffs two stations with staffed medic units 24 hours a day. Each medic unit consists of a minimum two career paramedics. There are two medical units staffed full time, one at station 2 and one at station 4. There are two additional medic units that are unstaffed, but can be brought into service by the volunteers or if the paramedics are not needed for the transport or one is available in district the other units can be staffed as necessary.

For critical transports the area is serviced with Flight for Life (FFL) helicopter service based at St. Anthony’s Hospital and Air Life based at Aurora North. During the past five years FFL was utilized 20 times in the following areas:

Flight or Life Use in Demand Zones	
Urban	1
Suburban	4
Rural	9
Remote	4
Out of District	2

Chart 15

FFL has been disproportionally used in the rural and remote areas of the district. This reflects the extended egress out of these areas for ground transport.

There are no standards for EMS response in NFPA 1720. Using the structure fire standards, the medic units are meeting the standard in the range from 60% to 80% of the time in all population zones with no gross deviations in the individual medic unit response times. The personal vehicle response is even better with a performance in the 70% to 90% of the time in all population zones. These statistics support the use of the neighborhood response program by volunteer firefighters. The use of an AED in conjunction with this response will increase the likelihood of survival for heart related EMS incidents. AED's are located at each fire station.

<b>Medic Unit Performance 2008 to 2012</b>									
Zone	Process	Turnout	Travel	On-Scene Time	To Hospital	In-service	Total Response Time	1720 Turnout & Travel	1720 Performance Comparison
Urban	0:01:41	0:03:00	0:09:02	0:26:38	0:37:33	1:00:00	0:13:43	0:12:02	84.1%
Suburban	0:01:34	0:02:59	0:09:50	0:28:58	0:40:22	0:59:13	0:14:23	0:12:49	79.9%
Rural	0:01:49	0:02:56	0:14:02	0:30:18	0:43:05	1:05:37	0:18:47	0:16:57	82.1%
Remote	0:01:59	0:03:05	0:18:55	0:30:37	0:44:32	1:02:31	0:23:59	0:22:00	66.3%
Out of District	0:02:34	0:03:06	0:15:37	0:27:03	0:39:53	1:03:20	0:21:17	0:18:43	78.9%

Chart 16

<b>Personal Vehicle Performance to EMS 2008 - 2012</b>						
Zone	Process	Turnout	Travel	Total Response Time	1720 Turnout & Travel	1720 Performance Comparison
Urban	0:01:46	0:06:01	0:06:46	0:14:33	0:12:47	87.4%
Suburban	0:01:38	0:06:04	0:07:12	0:14:54	0:13:16	88.3%
Rural	0:01:54	0:08:28	0:10:19	0:20:41	0:18:47	91.0%
Remote	0:01:39	0:11:26	0:15:09	0:28:15	0:26:36	85.2%
Out of District	0:02:34	0:06:33	0:07:39	0:16:46	0:14:12	98.1%

Chart 17

## Wildland Fire Risk Assessment

While assigning the probability and consequence of a risk, it is extremely rare to assign a high probability and a high consequence. The risk of a catastrophic wildland fire in the district is very high and cannot be overstated. Based on the wildland fires along the Front Range of Colorado over the last 15 years the risk of a large destructive wildland fire in the near future within the district is very high. Even a 1,000 acre fire could have a billion dollar loss depending on where the fire occurs.

The Fire District has a Community Wildfire Protection Plan (CWPP) that was produced in 2007. The opening sentence in the Executive Summary of the CWPP states: “The CWPP is a strategic plan that identifies specific wildland fire hazard and risk facing communities and neighborhoods, and provides prioritized mitigation recommendations that are designed to reduce those hazards and risks.” The plan identifies 29 separate neighborhood/subdivisions with-in the district. Of those areas five are rated as extreme, twenty-one are rated high and four as moderate. The rating system was based on using National Fire Protection Association (NFPA) Form 1144, Standards for Protection of Life and Property from Wildfire, 2002 Edition.

**Table ES-1. Community Hazard Rating Summary**

Wildland Urban Interface ID	Subdivision(s)	Hazard Rating
5	Echo Hills	<b>EXTREME</b>
20	Brook Forest Estates, Upper Cub Creek	<b>EXTREME</b>
12	Rosedale Acres, Segar Acres	<b>EXTREME</b>
1	Beaver Brook Canyon, Highland Hills, Chase Subdivision, Elmgreen Acres, Pleasant Lane, Homestead Hideaway	<b>EXTREME</b>
21	Buffalo Park Estates, Evergreen Hills	<b>EXTREME</b>
7	Evergreen West	<b>HIGH</b>
30	Greystone Estates	<b>HIGH</b>
13	Independent Heights, Forest Hill, Mountain Park Homes	<b>HIGH</b>
18	Bear Mountain Vista, Stanley Park	<b>HIGH</b>
29	French Springs	<b>HIGH</b>
23	Cub Creek Ranch, Evergreen Highlands, North Marshner, South Marshner	<b>HIGH</b>
2	Soda Creek, Fox Ridge	<b>HIGH</b>
11	Circle K, Bendemeer Valley, Golden Willow, Greystone Lazy Acres, Bear Creek Estates, Diamond Park, Wilderness Point	<b>HIGH</b>
3	Beaver Brook, Beaver Brook Lodge Estates Hoffer Heights, Pine Valley Estates	<b>HIGH</b>
25	Evergreen Meadows East	<b>HIGH</b>
22	Estates of Blue Creek, Blue Creek Road	<b>HIGH</b>
9	Hiwan Hills, Hidden Village at Hiwan, Douglas Park, Hiwan Homestead Museum	<b>HIGH</b>
19	Pine Valley Estates, Hillcrest Village, Peaceful Hills	<b>HIGH</b>
17	Herzman Mesa, Wonderview, Pine Crest Park, Sunset Heights, High Prairie, Far View Acres, Cragmont Estates, Marshdale Park,	<b>HIGH</b>

Wildland Urban Interface ID	Subdivision(s)	Hazard Rating
	Marshdale	
8	Tanoa, Overlook, Palo Verde, Troutdale Estates, Glen Eyrie, Bear Creek	<b>HIGH</b>
26	The Ridge at Hiwan	<b>HIGH</b>
16	Evergreen Park Estates, Evergreen Heights, Evergreen Golf Course, Evergreen Valley Estates, Columbine Road	<b>HIGH</b>
27	El Pinal, El Pinal Acres	<b>HIGH</b>
10	Kittredge, Quartz Mountain, Pine Valley Acres, Mountain Meadow Heights	<b>HIGH</b>
24	Evergreen Meadows West, Timbers Estates	<b>HIGH</b>
4	Hidden Valley, Ruby Ranch, Nob Hill, Avery Acres, El Rancho	<b>HIGH</b>
28	Wah Keeney Park	<b>MODERATE</b>
14	Hagan Ranch, Elk Ridge, Elephant Park, Our-Lady-of-the-Rockies, Westhaven Heights	<b>MODERATE</b>
15	Greenwood, Wilmot Woods, Evergreen Hill	<b>MODERATE</b>
6	Hiwan Country Club	<b>MODERATE</b>

Chart 18

The areas rated as high or extreme are 86% of the urban interface areas in the district. Even the CWPP acknowledges that the moderate areas can be subject to extreme fire behavior during drought and high winds. The following paragraph outlines the threat and how it developed:

“Natural resource management policies and changing ecological conditions have converged to create hazardous fuel situations throughout the assessment area. Decades of aggressive fire suppression practices have resulted in very dense and weakened timber stands. Years of drought have further stressed the forests, setting the stage for the devastating insect and disease infestations the area is experiencing today. Shrubs have expanded into traditional grasslands, resulting in accumulating hazardous amounts of woody ground fuel. The diversity of native grasses has succumbed to aggressive non-native species and noxious weeds. In many areas these fire-dependent ecosystems have grown unchecked by fire for more than a century. When combined with continued human development in the area, the net result is any wildfire has the capacity to become catastrophic.”<sup>2</sup>

The CWPP was produced prior to the catastrophic wildland fires of 2012 and 2013 along the Front Range. This history has increased the threat of a devastating wildland fire within the district.

The district is meeting the NFPA 1720 Standard in a range of 48.3% to 75.3% of the time. The 48.3% for the remote areas is based on an extended turnout and travel time. This is indicative of distance of travel and the remote difficult terrain. The high turnout for out of district is based on the policy that the apparatus will wait for a full crew and the distance mutual aid incidents are from the district. The rural area gets the majority of responses.

<sup>2</sup> Walsh Environmental Scientists and Engineers LLC, Evergreen Fire Protection District Community Wildfire Protection Plan, page XV, 2007

## Wildland Fire Performance Based on First Arriving Unit 2008 - 2012

Demand Zone	Process	Turnout	Travel	Total Response Time	1720 Turnout & Travel	1720 Performance Comparison	Incident Count	Percent of Wildland Incidents
Urban	0:03:25	0:04:55	0:12:20	0:20:40	0:17:15	69.4%	20	8.3%
Suburban	0:02:59	0:05:08	0:10:17	0:18:24	0:15:26	58.7%	58	24.1%
Rural	0:03:20	0:04:19	0:11:43	0:19:22	0:16:03	75.3%	119	49.4%
Remote	0:04:02	0:09:17	0:14:51	0:28:09	0:24:08	48.3%	20	8.3%
Out of District	0:03:52	0:11:11	0:12:28	0:27:32	0:23:40	75.3%	24	10.0%
						Total	241	100.0%

Chart 19

The above chart is measuring first due unit only. This unit could be an individual firefighter. Individual firefighters can suppress small wildland fires using hand tools.

## Wildland Staffing 2008 to 2012

Demand Zone	Average						90th or 80th Percentile				
	2008	2009	2010	2011	2012		2008	2009	2010	2011	2012
Urban	8.18	5.45	2.95	4.25	3.76		13.0	9.0	4.0	6.2	6.0
Suburban	5.64	6.54	4.59	6.68	5.37		7.2	7.0	5.8	6.0	6.0
Rural	6.25	7.86	5.23	7.09	5.69		8.0	11.0	7.0	9.0	6.0
Remote	6.40	7.75	5.00	8.64	6.96		11.2	13.5	7.4	19.0	16.8
Out of District	5.88	6.10	10.00	9.00	6.59		8.8	9.4	26.0	24.6	14.6

Chart 20

Wildland staffing for smoke checks is low on turnout with an initial dispatched request for one or two responders. The majority of the incidents include chimney startups, legal campfires, legal slash burns and diesel equipment start-ups. As such the operational decision was made to limit the number of personnel required for these calls and to increase this staffing during red-flag days for a greater response. Staffing increased in the years of 2011 and 2012 due to drought conditions that increased wildland incidents.

Brush Engine Performance 2008 - 2012								
Demand Zone	Process	Turnout	Travel	Total Response Time	1720 Turnout & Travel	1720 Performance Comparison	Incident Count	Percent of Wildland Incidents
Urban	0:03:28	0:15:03	0:14:40	0:33:11	0:29:43	43.3%	18	9.6%
Suburban	0:02:12	0:16:54	0:14:15	0:33:21	0:31:09	27.7%	49	26.2%
Rural	0:02:50	0:13:24	0:16:46	0:33:00	0:30:10	47.5%	89	47.6%
Remote	0:04:02	0:21:13	0:14:44	0:39:58	0:35:57	46.1%	16	8.6%
Out of District	0:03:40	0:16:43	0:26:43	0:47:06	0:43:26	54.2%	15	8.0%
						Total	187	100.0%

Chart 21

The brush engine performance is similar to the structure fire engine response; both areas need to have the process and turnout time reduced.

### Hazardous Materials/Technical Rescue/Water Rescue Risk

**Hazardous Materials** - The District has very little hazardous materials risk. There are no industrial areas and only a single manufacturing exposure within the district, Super Seer north of Xcel Energy. They manufacture motorcycle helmets. The majority of exposures are based on supporting the residential nature of the community. Fuel tankers for the gas stations and propane tankers for heating businesses and residences are the worst possible exposures. There are considerable hazardous materials moving along Interstate 70. The Colorado State Patrol and the Colorado Department of Transportation are responsible for any hazardous material releases on the Interstate. Jefferson County has developed a Hazardous Material Authority with Adams County to provide hazardous material response. There are some light industrial exposures along Bryant Drive, including a propane farm.

**Technical Rescue** - The district does not provide high angle, trench rescue or confined space rescue. Trench and confined space rescue resources are available through mutual aid. West Metro Fire Rescue is the nearest resource. High angle rescue is available from Alpine Rescue. There has only been one trench rescue in the recent past. West Metro was called and there was a successful outcome.

**Water Rescue** - There are a few exposures with Evergreen Lake being the most likely to have a water rescue need. The Evergreen Parks and Recreation District provides a ranger that is trained in water rescue, plus the firefighters are trained in ice rescue, water rescue and some as swift water rescue. Bear Creek can run strong occasionally, but it is not a yearly event. The risk of a swift water rescue is low.

### Severe Weather and Natural Disasters

**Floods** – In September of 2013 the District experienced a 100-year flood event in the Bear Creek and Cub Creek drainages. If the storms that hit Boulder County had occurred here the flooding damage could have been catastrophic to the community and to transportation. It would be safe to assume that Station one would be severely damaged and would be unusable for many months. In 1964 another flood occurred in these drainages. The storm was split between the two drainages and it was estimated at the time, if the storm centered over either drainage the damage would have been similar to the Boulder storm. The risk for a catastrophic event is high. Early warning systems are in place and the risk to life is low. There were eight deaths in the September 2013 storms along the Front Range, as compared to the Big Thompson Flash Flood in August 1976 that killed 143 where early warning and preparation were not available.

**Tornados** – A tornado was spotted on Mount Evans in 2012, but the threat is low.

**Flash Flood/Hail** – Flash-flooding and hail are fairly common within the District. The District averages a severe thunderstorm every other year. These storms bring hail that can damage homes, vehicles and businesses. During the storms the district resources can be impacted due to a high call volume.

**Wind Events** – The Chinook winds are very common, occurring in the fall, winter and spring. The average year can have up to ten events in a single fall/winter/spring. These storms can increase the wildfire danger and damage structures.

**Heavy Snow** – Heavy snow storms are a common problem. In March 2003, a storm dumped up to six feet of snow in 48 hours. These storms can paralyze the District, knocking down trees and power lines, collapsing structures and blocking transportation reducing the ability to transport patients to the hospitals. During the 2003 storm access to parts of the district was impossible for a number of days. The National Guard provided snow cats that were able to access areas for EMS and evacuation. Jefferson County now has snow cat capability. Fire protection was severely compromised throughout the district.

**Appendix A:**

	Apparatus Identifier	Function	NWCG Type	GPM	Water Capacity	GVWR	Foam Capacity	Foam Class
<b><u>STATION 1</u></b> <b><u>Downtown</u></b>	Engine 131	Pumper	3	1250	500	37000		
	Rescue 141	Utility/Fire Rescue		100	270	24220	30	B
	Pump 181	Pump Truck		1000	N/A	10500		
	Brush 151	Brush	7	10	200	17500	10	A
	Tender 161	Tanker	S2	250	3000	52000		A
	Tender 171	Tanker	S1	750	4000	62000		
	Utility 191	Utility, Medic Transport						
<b><u>STATION 2</u></b> <b><u>Bergen</u></b> <b><u>Park</u></b>	Rescue 142	Heavy Rescue		60	97	48500	3	B
	Engine 132	Pumper	1	1500	750	38500		
	Tender 162	Tanker	S2	500	3000	52000		A
	Brush 152	Brush	7	10	200	17500		
	Tower 182	Aerial, Pumper		1500	400	78000		
	Utility 192	Command/Medic Transport						
	Medic 112	Ambulance						
<b><u>STATION 3</u></b> <b><u>Marshdale</u></b>	Tender 173	Forestry Tender	T2					
	Engine 133	Pumper	1	1500	500	49000	30	A
	Brush 153	Brush	6	150	330	17500	25	A
	Investigation 193	Investigations						
<b><u>STATION 4</u></b> <b><u>Skyline</u></b>	Medic 114	Ambulance						
	Medic 124	Ambulance						
	Utility 194	Utility						
<b><u>STATION 5</u></b> <b><u>Upper</u></b> <b><u>Bear</u></b>	Engine 135	Pumper, Urban Interface, CAFS	1	1000	500			
	Tender 175	Forestry Tender	T2	400	1800	35000	75	A
<b><u>STATION 6</u></b> <b><u>Kittredge</u></b>	Engine 136	Pumper, Urban Interface, CAFS	3	1250	500	37000	30	A
	Brush 156	Self Contained Attack Truck	6	150	330	17500		
<b><u>STATION 7</u></b> <b><u>Floyd Hill</u></b>	Engine 137	Pumper, Urban Interface, CAFS	1	1000	500	48000	15/15	A/B
	Brush 157	Brush	6	150	330	17500	25	A
	Tender 177	Forestry Tender	T2	750	1425	39500	75	A
<b><u>STATION 8</u></b> <b><u>Brook</u></b> <b><u>Forest</u></b>	Engine 138	Pumper, Urban Interface, CAFS	1	1000	500	48000	30	A
	Tender 178	Forestry Tender	T2	500	1500	48000		

**APPENDIX B: NWCG Engine and Water Tender Typing (Minimum Requirements)**

Requirements	Engine Type						
	Structure		Wildland				
	1	2	3	4	5	6	7
Tank minimum capacity (gal)	300	300	500	750	400	150	50
Pump minimum flow (gal/min)	1,000	500	150	50	50	50	10
At rated pressure (psi)	150	150	250	100	100	100	100
Hose: 2 ½-inch	1,200	1,000	—	—	—	—	—
1 ½-inch	500	500	1,000	300	300	300	—
1-inch	—	—	500	300	300	300	200
Ladders per NFPA 1901	Yes	Yes	—	—	—	—	—
Master Stream 500 gal/min.	Yes	—	—	—	—	—	—
Pump and roll	—	—	Yes	Yes	Yes	Yes	Yes
Maximum GVWR (lb)	—	—	—	—	26,000	19,500	14,000
Personnel (minimum)	4	3	3	2	2	2	2

• = Not applicable

NFPA = National Fire Protection Association

GVWR = gross vehicle weight rating

Requirements	Water Tender Type				
	Support			Tactical	
	S1	S2	S3	T1	T2
Tank Capacity (gal)	4,000	2,500	1,000	2,000	1,000
Pump minimum flow (gal/min)	300	200	200	250	250
At rated pressure (psi)	50	50	50	150	150
Maximum refill time (minutes)	30	20	15	—	—
Pump and roll	—	—	—	Yes	Yes
Personnel (minimum)	1	1	1	2	2

• = Not applicable

**Note:**

1. All types shall meet Federal, state, and agency requirements for motor vehicle safety standards, including all gross vehicle weight ratings (GVWR) when fully loaded.
2. Type 3 engines and tactical water tenders shall be equipped with a foam proportional system.
3. All water tenders and engine Types 3 through 6 shall be able to prime and pump water from a 10-foot lift.
4. Personnel shall meet the qualifications requirements of NWCG's *National Interagency Incident Management System: Wildland Fire Qualification System Guide (PMS 310-1, June 2012)*.

## Strategic Plan

### The Foundation

The EFPD Board of Directors understands the importance of developing a strategy that is grounded on a strong foundation. Our foundation is best expressed by our mission, vision, and values, which were written as a collaborative effort of all divisions that make up EFR.

***Mission Statement:*** *Protect life, property, and the environment through prevention, preparedness, education and emergency response.*

***Vision:*** *Achieve our highest potential by:*

- *Recognize change in our community and respond accordingly.*
- *Cultivate a safe and effective environment for the public and our members.*
- *Create a positive work environment through effective internal communication, relationships and leadership.*
- *Strive to be role models in the community and leaders in our profession.*
- *Promote responsible stewardship of the resources afforded to us by the community.*
- *Utilize technologies and methods to evaluate and enhance current practices.*
- 

***Values:***

- *Respect and Integrity*
- *Effective Communication*
- *Responsibility and Accountability*
- *Team Work*
- *Encourage and value all contributions*
- *Commitment and Pride*

## The Organization

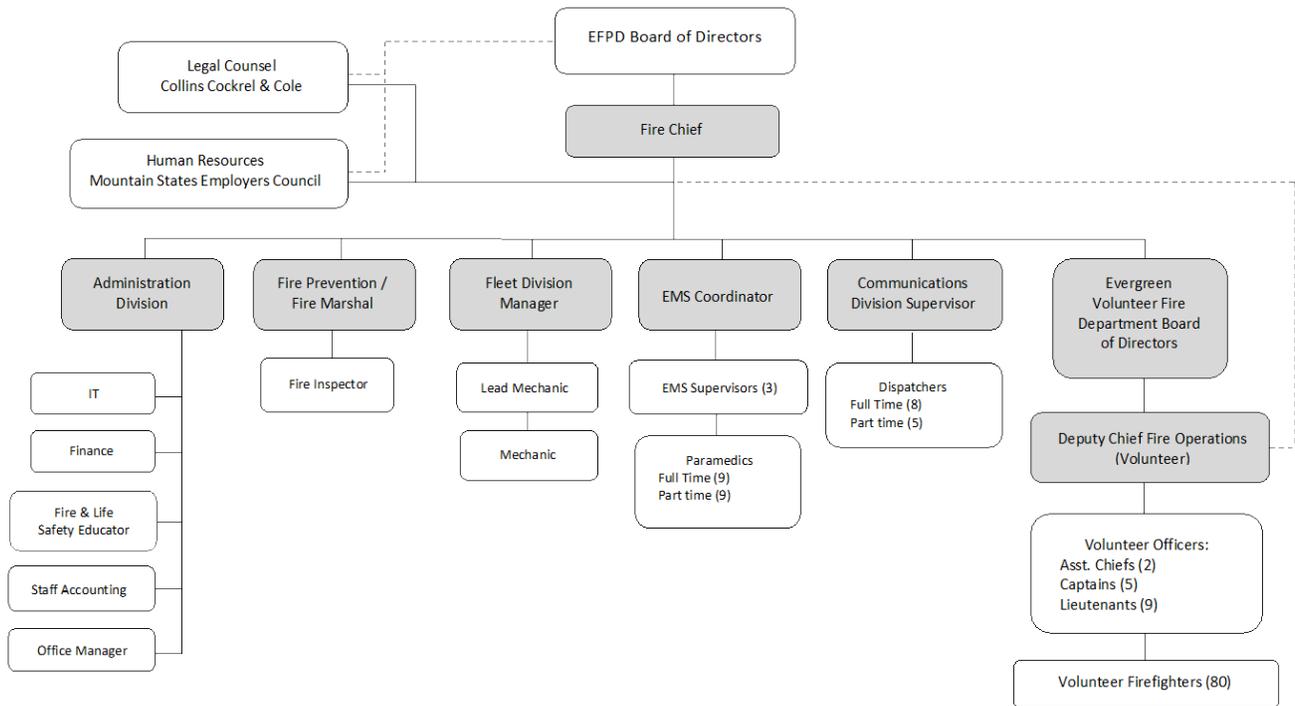


Chart 22

## The Strategic Plan

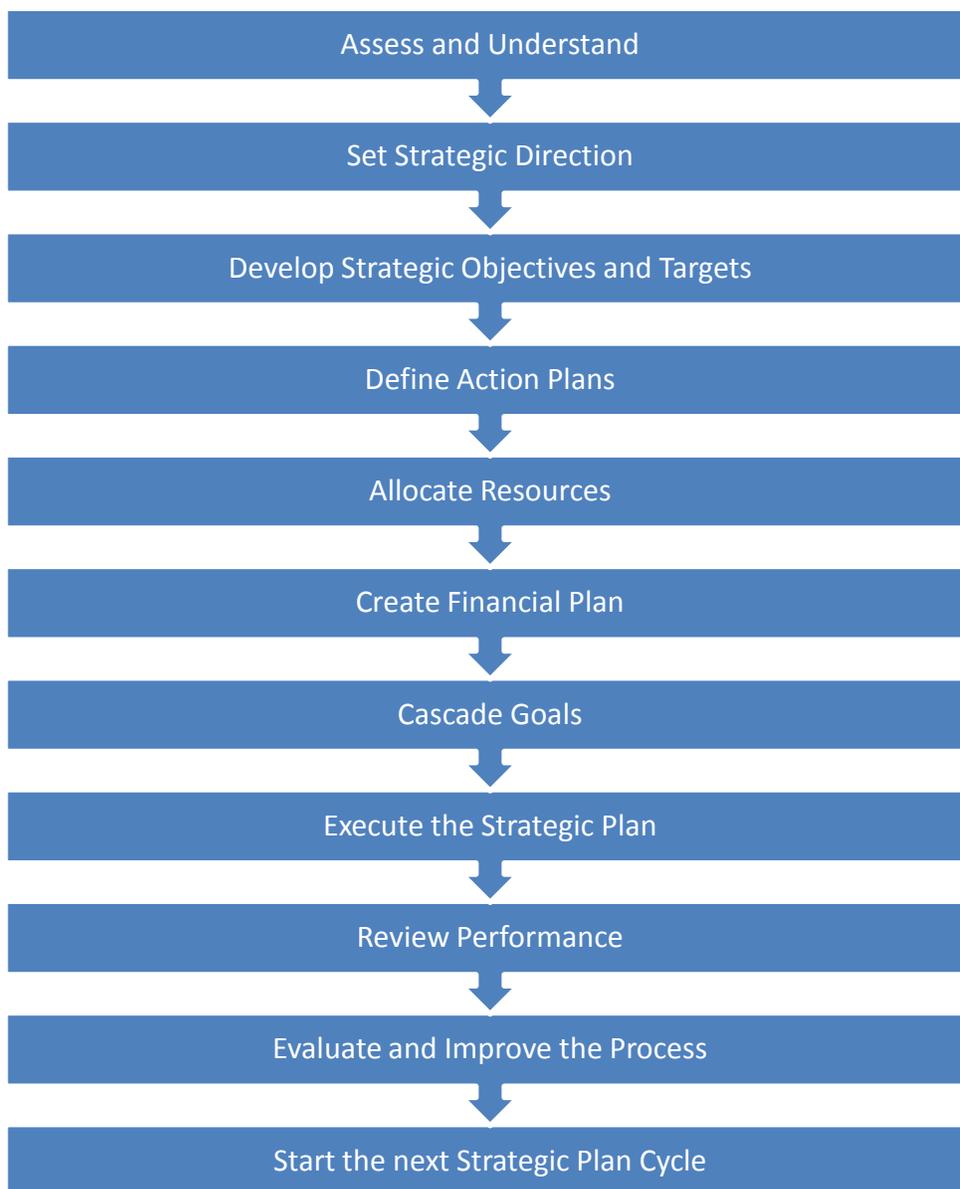
Over the years EFPD has developed and implemented strategic plans that have help us meet the changing needs and projected growth of our community. Through the participation of a focus group of community members and business leaders and the comprehensive development of a Standard of Cover and Risk Assessment, we have defined a strategy to carry us forward beyond 2014. We will continue to refine the services we provide to the community in response to both external and internal factors of our economy, regulatory agencies, an evolving technological environment, and demographic composition.

## Planning Assumptions

- Demographically the population of Evergreen is aging as it is in other locations based on the “baby boom” population that has now begun to reach retirement age and the planned new construction of assisted living facilities.
- Population growth and call volumes are projected to increase only minimally.
- Projections indicate that revenue will be flat or decreasing for the foreseeable future and the District should be prepared for a continuation of the reduction of or flat revenue.
- The Volunteer Fire Department will endeavor to maintain volunteer staffing while improving the level of training and service.
- It is recognized that the administrative staff may be required to absorb more responsibilities that are currently within the duties of the volunteers. Staffing levels of the administration may have to increase to absorb the additional duties.

- Wildland fire is a risk to the community as Evergreen resides in the Wildland Urban Interface (WUI). This risk has a high probability with high consequences.
- Alternative revenue sources to meet the needs outlined in this plan must be identified.
- Wildland fire will remain a high probability, high consequence risk for the community.
- Structure fires will continue to become more complex to fight as homes within the district increase in size and are built with and occupied by highly combustible materials.
- Emergency medical response reimbursement/ collections from Medicare/ Medicaid will continue to drop as new laws take effect and insurance companies adjust to these new regulations.
- Station 1, built in 1969, and located in the District core, will require remodeling or replacement.

## Strategic Planning Process



## Planning Initiatives

### S.W.O.T.

S.W.O.T. is a way of defining our Strengths, Weaknesses, Opportunities, and Threats. It can be used to help us determine where we need to focus additional efforts.

<p style="text-align: center;"><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Respect and support in the community</li> <li>• Volunteer firefighter neighborhood response model</li> <li>• Strong willingness to volunteer in the community</li> <li>• All ALS crews for EMS for split response as needed</li> <li>• Core mission, vision and values</li> <li>• Training</li> </ul>	<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Recruitment and retention</li> <li>• Create a high performance culture</li> <li>• Increase community visibility</li> <li>• Insurance Services Office</li> <li>• Wildfire awareness</li> </ul>
<p style="text-align: center;"><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Firefighter retention</li> <li>• Firefighter recruitment</li> <li>• Engine response times</li> <li>• Water sources</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Wildfire in the Urban Interface</li> <li>• Regulatory changes in the healthcare system</li> <li>• Reduced tax revenue</li> <li>• Additional certification requirements on the volunteer firefighters</li> <li>• Aging Population</li> <li>• Operating expenses greater than revenue</li> </ul>

Chart 23

## Operations

### Fire Operations

Over the past ten years, the fire department has grown to meet the needs of the district by completing a majority of the strategic objectives including the addition of four new stations and firefighting equipment to provide coverage in the more rural areas of the District. The call volume has remained consistent at approximately 2,200 calls for service per year (75% EMS / 25% Fire related & other) and an increase in the call volume is not anticipated for the near future. Volunteer membership has fluctuated in the past few years as new members come on and tenured members retire, but overall the membership health is good.

Going forward, the goals of fire operations should be along the lines of providing exceptional service to the community, preparing to sustain membership, and evaluating and improving operations.

**Structure fire response and tactics** – The three priorities on any fire, in this order, are life safety, property preservation and incident stabilization. Changes in construction techniques and materials have made structure fires far more dangerous for both the inhabitants and the firefighters. Items inside of these structures and the materials they are made of add to the fire load and the hazard as the toxic gases and heat load produced by the materials increases. EFR, with the addition of the live burn training building,

shall continue to adapt trainings to include tactics that allow for aggressive fire attack, but stay true to the three priorities, most importantly, life safety. EFR shall continue to supply the firefighters with the equipment and training required to stay safe and still fight fire.

The SOC identified that engine response times do not meet NFPA 1720 standards. With the neighborhood response model employed in the District, it is not practical for the fire department to choose this standard as a basis to set goals from. The NFPA standard does not account for firefighters responding from home to the fire station for apparatus. EFR should carefully study engine response and set benchmarks that improve performance based on the current volunteer model. The fire department shall also be prepared to change the model if response times cannot meet the benchmarks set.

**Recruitment and retention** – The requirements of being a volunteer firefighter continues to be one of the issues that, nationally, has made recruitment and retention very difficult. The number of volunteer firefighters in the United States continues to drop. EFR is interested in attracting the right candidates to the department who can commit for the time period that allows them to become experienced and allows for a return of the fire departments investment in training and equipment. Fortunately Evergreen Fire Rescue has the opportunity to recruit from a community that is willing and able to commit to the fire service. In the past five years, the department has been able to recruit enough applicants to host an academy with over a dozen students each year, graduating 15 in 2014 and beginning an academy of 20, scheduled to graduate in 2015.

Moving forward, the fire department should devise and refine a “turnkey” system of recruitment so that any member of the department can oversee the recruitment process. An analysis of what has been best past practices should be completed. Additionally, an analysis of the areas of the District where the department needs more firefighters should be completed followed by a target market of those areas for potential members. For instance, the north end of the district has recently had the lowest numbers of volunteer firefighters, so in future recruitment drives the department should target those areas north of Stagecoach Blvd. Funding for recruitment should be reviewed to ensure an adequate amount is planned.

**Increase community visibility** – In small communities across America, the fire department is an integral part of the community, and Evergreen is no different. Because the fire department has long and deep roots within the community, the department enjoys a tremendous amount of community support. One of the simplest avenues for maintaining that support is being “visible” within the community. Through a robust Community Education program for the schools and EMS education, such as CPR classes, and an increase in AED access throughout the community, the department has positioned itself to be an asset to the community other than when a member of the public dials 9-1-1. The department should look into other avenues that will create good public relations with the community, such as having more Open Houses at the fire stations, participating in community events, exhibiting new acquired equipment, etc. This effort must be maintained but managed carefully as to not overburden the volunteers, reducing the amount of time they have available for emergency response and training.

**Create a high performance culture** – Change is inevitable. The fire department must recognize the changing environment and act upon it. Constant evaluation, planning, testing and reevaluating is necessary in order to not fall behind changing protocols and best practices. An example of such an

evaluation is the current apparatus response time analysis. From the data collected in the analysis, a committee will make recommendations as to how the department may improve apparatus response times.

**Aging population** – affects the fire department in two areas:

- (1) As the population within the district becomes older, EMS calls should increase. An increase in call volume will affect not only the EMS operations but also fire operations given that firefighters, in the neighborhood response model, will arrive on scene first and often times will assist by driving ambulances to the hospital. While not an issue presently with POV response data being very positive, it is a concern for the future, as the department will need to address any increase in call volume in order to sustain the level of service that the community expects.
- (2) The second area that an aging population will affect is fire operations in that the fire department recruits from the very same population that is aging or moving into retirement years. If there is a significant shift upwards in the demographics of the population, then logic dictates that the recruitment pool shrinks. The question then follows if the department is still able to recruit qualified applicants from the existing community. If not, then the department will need to identify other resources – i.e. recruit firefighters who do not live within the district.

**Wildfire in the Urban Interface** – Wildfire in the urban interface is not just a fire department issue, but rather the entire community's issue. Through proper education, mitigation, enforcement and response, the community decreases the chance of a wildland fire destroying homes.

When a significant fire occurs, our first priority will be life safety, with the evacuation of residents in cooperation with the Jefferson County/ Clear Creek County Sheriff's Department. Establishing a reasonable line of defense is the next priority, along with massive mutual aid and protection of our escape routes. Living with this threat means our members must be continually trained in wildland firefighting. We must continually train with our neighboring districts and wildland firefighting agencies. Our equipment must match our wildland firefighting and urban interface requirements.

The most effective method of suppression of wildland fires is to prevent the fire prior to ignition by preparing neighborhoods for fires. It is the intent of this plan to support all operations to reduce the fuel around structures and strategic fuel reduction in developments. EFR, for example, supports the development of Community Wildfire Protection and Implementation Plans (CWPIP) by neighborhood groups. Community groups, using the District's Community Wildfire Protection Plan (CWPP) developed and published in 2007, develop these plans and take the responsibility for implementing them to prepare their neighborhoods for fire.

**Wildfire response** – EFR's first wildland firefighting priority will be life safety, then to safely locate and extinguish small wildfires before they can become significant fires.

EFR encourages mutual aid response to wildfires as well as deployment to wildland fires outside of mutual aid agreements in Colorado and nationally. The experience gained by firefighters on these large, state and national fires is brought back and utilized locally by training our firefighters on strategies and tactics commonly used. EFR will continue to keep a limited number of apparatus available for deployment.

Deployment requires nationally recognized certifications. EFR will continue to encourage firefighters to complete these advanced certifications, such as Squad Boss, Engine Boss and Strike Team/Task Force Leaders. The experience gained by the completion of these certifications can be utilized on local fires.

The completion of task books for these advanced certifications requires the firefighters to work actual wildfires. National deployments require a minimum of a two-week commitment, which is difficult for volunteer firefighters who hold full time employment in the civilian sector. EFR must recognize when the volunteer system will no longer support the acquisition of these certifications and should consider adapting the system to accommodate the need for this wildfire experience. Seasonal employment of an Engine Boss, who can deploy with firefighters, allowing those firefighters to get the certifications and experience required, should be considered. These seasonal employees, when not deployed, can be contracted to the community to complete mitigation projects. The expansion of agreements with other departments in sharing personnel is another avenue of allowing firefighters to get the needed experience. EFR currently has agreements with two agencies and one nationally listed single resource to take the position of Engine Boss on an EFR truck, allowing the truck and personnel to deploy.

Continued training with our neighboring fire districts and larger urban fire departments is also imperative. A large wildfire requires a very big commitment of resources. Mutual aid agreements should be updated and EFR participation and hosting of multi-agency trainings should continue to be encouraged.

**Additional certification requirements on the Volunteer Firefighters** – Each certification requires time and effort from the firefighters and funds from the department. While we want our firefighters to be the best possible for the community, certifications should be obtained on a “need and necessity” basis.

An example of the “need and necessity” theory is Hazardous Materials (Haz Mat) Technician vs. Haz Mat Ops certification. Yes, the department could require “technician” level certification, but it is not necessary as hazardous material calls that require a “technician” level response are low probability and there is a mutual aid Haz Mat team available through Jefferson/Adams County and Colorado State Patrol. All firefighters are required to be certified as Haz Mat Ops.

### **Other Disciplines with Fire Operations**

**Rescue Response** – The EVFD Rescue Squad participates in medical response, vehicle extrication, low angle rope rescue, swift water, cold water and ice rescue. EFR will continue to supply the rescue squad with the required training and equipment necessary to be effective and efficient during emergency responses. An analysis of the disciplines within rescue should be completed to determine if the service being provided to the public meets the needs, as well as to determine if any discipline is no longer a necessity. In the previous strategic planning cycle, for example, the Dive Team was found to be extremely underutilized and was eliminated as a rescue discipline.

Highway and roadway safety should be analyzed to ensure proper safety procedures and apparatus are being used to keep personnel on an emergency scene safe.

**Fire Investigations** - EFR currently has a very competent Investigations team responsible for fire investigations. EFR would like to maintain control of fire investigations. Continued recruitment of new investigator trainees or seasoned investigators to augment the current department team is required to sustain this program. This is essential given the fact that it may take several years for an investigator trainee to become a competent and certified investigator.

**Emergent Driving, Driver Engineering** – Driving emergent continues to be one of the more dangerous activities for emergency responders. EFR will continue to ensure personnel responding to emergencies in their privately owned vehicles do so in a safe manner for themselves and the safety of the public by requiring driver training and enforcing the laws governing POV emergency response.

EFR must maintain an effective number of driver engineers for each level of apparatus. An analysis of the Driver Engineering program and training should be conducted to ensure adequate participation and to maintain a level of qualified operators required for an effective and efficient emergency response following the rolling order as described in the Standard Operating Guideline (SOG).

**Officer Training** – The Fire Department should implement a system of officer training. Officer positions carry a great deal of responsibility and fire ground experience should not be the only means to measure the ability of an individual to lead. A training program to prepare potential officers for the position should also be evaluated. Several programs exist that could be implemented for both. The Division of Fire Safety offers a series of certifications, including Fire Officer I, II etc. Blue Card is a more recent training program being utilized nationally.

**Mutual Aid Agreements** - Operating agreements with other emergency service organizations within and surrounding the District currently supplement services provided by the Department. In addition, the District has signed agreements to provide Mutual Aid services to Clear Creek, Indian Hills, Elk Creek, Inter Canyon, Genesee and Foothills fire districts. These agreements should be reviewed and updated as required to best utilize the support of our neighboring districts. Currently, a program is underway to include auto-aid and mutual aid support through a response plan being built into the new Computer Aided Dispatch (CAD) system scheduled to be in use by late 2014.

### Emergency Medical Services

There are two components to the Emergency Medical response within the district, the EMS Section (full time, ALS responders) and the neighborhood response (volunteer firefighters). The primary goal is to respond to medical and trauma emergencies via the neighborhood response system thus reducing actual response times. The neighborhood response is extremely efficient and provides a quicker size up and quicker initiation of patient care. Medical personnel can respond from their residence into the neighborhoods providing medical intervention prior to the EMS staff's arrival. There are three levels of EMS intervention:

1. Emergency Medical Responder (EMR), formally known as First Responder, which is an advanced first responder certification for volunteer firefighters, taught as part of the EFR academy.
2. Basic Life Support (BLS) provided by volunteers certified as Emergency Medical Technicians.
3. Advanced Life Support (ALS) provided by Paramedic's.

The primary goal of the EMS Section is to provide Advanced Life Support to both the medically ill and traumatically injured patients using a philosophy that patient care is one of appropriateness. We want to always strive to be appropriately conservative, yet appropriately aggressive when the situation calls for it, remembering that every intervention, primarily pharmacologic and procedural, has risk for complications. Thresholds for action must correlate to the degree of acuity, taking into account the benefits to the patient versus risks of the intervention. While our goal is on patient care, our focus is on caring for people.

In 2012 the EMS Section met its goal set over a decade ago of staffing with only Paramedics. This concept allows us to maximize the Districts EMS coverage by allowing the Paramedic's to split (when possible), utilizing the volunteer staff to drive during patient transports thus keeping the other Paramedic in district to staff the second and at times third and fourth ambulances. This design not only ensures medical protection for the district but it's a cost savings design as well. By ensuring an ALS provider remains in district the vast majority of the time we've nearly eliminating the need for mutual aid response on medical calls and have thus reduced the need for additional staffing.

**National Fire Protection Association Compliance** - EMS crews are meeting NFPA performance "on scene" standards over 70% of the time as detailed in the Standard of Cover. Firefighters responding from their home or anywhere within the district are meeting NFPA 1720 performance standards at nearly 90% of the time.

As the districts population ages, medical responses are forecasted to increase. EMS responses have doubled from just over 700 EMS calls a decade ago to now over 1400. Approximately 65% of those calls resulted in hospital transports. 65% - 70 % of the total EFR calls for service are medical based calls.

The EMS section staffs two of its four ambulances at all times. The two crews are split into the northern and southern end of the District, with the dividing line being Bryant Drive. While the call for service can vary hour-to-hour and day-to-day the call volume over the past few years has been fairly balanced between the two stations. Delay in response occurs when multiple calls are taking place simultaneously. Crews are at times forced to overlap each other's district, which creates delays. Attempting to manage this would increase staffing and be somewhat problematic; another reason the neighborhood response is so valuable.

One of our biggest challenges in managing our system is maintaining system status. By not having a local hospital to transport patients too, call times are long. The average call, including transport, from the initial call until the ambulance is back in district is a minimum of 2 hours. This does not include the time for documentation. To combat extended call times, we've changed our destination policies and only transport to St Anthony's, our closest hospital, Lutheran and for pediatric needs, Denver Health. This has made a tremendous difference in our out of district time thus shortening the overall call times.

The other bonus is the system design of splitting crews ensuring one Paramedic remains in District the majority of the time. It should be mentioned however that this design is totally dependent on the willingness of the "volunteers" to donate (at a minimum) 90 minutes of their time to drive us to the hospital. The value of this can't be overstated, as these blocks of time are a lot to ask of volunteers. Because of their dedication, from 2011 - 2013 we've been able to split crews over 350 times, practically eliminated the need for mutual aid. This type of dedication has ensured that 3<sup>rd</sup> and 4<sup>th</sup> out calls are

covered just as quickly as first out calls. Mutual aid agreements are still in place however and would be utilized in the event the system becomes overwhelmed.

Using EMR is the key to the success of our EMS system. The firefighters are trained and certified by the Paramedic staff during their probationary period. They are capable of initiating basic care, i.e. assessment, CPR, bandaging and splinting, oxygen, Automatic Defibrillator (AED) etc. and are extremely valuable to our system.

In order to maintain this program the District should strive to:

- Have an EMR on scene within five minutes on 90% of the incidents. (*Charts 16 and 17, Page 29*)
- Provide an ALS response within 5 minutes on 90% of the incidents.
- Maintain the FREE CPR training and AED program for the public, schools and others interested in learning.
- Provide a quality management program to ensure appropriate response times and training for medical personnel.

**Revenue** - While the EMS Section is partially supported by EFPD, the goal of self-sustaining still remains the objective through billing the users of the service in an attempt to offset operations. The tax dollars used to offset the EMS sections operating costs are supporting the 24/7 readiness of the EMS staff and should not be looked upon as a supplemental burden. It is concerning that while the revenue generated by the EMS Section reduces a large portion of the district's financial burden of providing medical protection, the margins between the operation costs and revenues continue to widen. It's projected that these discrepancies will only increase as Medicare/Medicaid reimbursements continue to decline through Federal mandates. Even more concerning is that private carriers have begun to follow suit. These reductions will not only reduce the EMS revenue but will undoubtedly put an even heavier burden on the out of pocket expenses of the patients themselves. As more and more patients are unable, unwilling or federally protected from having to pay their balances, EMS providers across the country will be forced to write off more and more uncollectable revenue, subsequently needing more and more subsidy.

The EMS budget needs to be monitored closely, but equally important is making sure we're doing things the right way. Keeping in mind that 60% - 70 % of the department's calls for service are for medical protection, the district must be proactive in order to stay in front of this issue in order to sustain medical protection for our community.

**EMS Billing** - In 2012 the nation faced changes in health care reform that put a strong emphasis on Medicare compliance. Enforcement like we've never seen before began sweeping the industry. Hundreds of thousands of dollars in fines were levied against organizations as a result of their findings. It's imperative that we focus a great deal of our time and attention on making sure we're in compliance with Medicare Rules and all billing regulations. In doing so we're more apt in keeping the revenue we've received from these trust funds and insurance carriers. We'll reduce the risks of Medicare sanctions, fines, penalties and re-payment of our revenue. The importance of annual training and seminars for better billing practices as well as EMS documentation is very important for the future of EMS billing. In 2012 an independent auditing group specializing in Medicare/Medicaid EMS billing looked over our practices and found that we had only a 5% error factor, 4% below the average error factor they typically find.

Previous changes in our billing practices were an important factor in those findings. Maintaining and improving compliance practices shall remain a priority.

**Recruitment and Retention** - Evergreen Fire/Rescue must be competitive in the market place to ensure not only that we're able to hire seasoned veterans but that we're able to retain the group we've had for many years. As of January 2014 the EMS Section collectively had over 400 years of service in EMS (22 years on average). This experience gives us the confidence to split the Paramedic crews knowing that each Paramedic is capable of managing the worst of the worst cases by themselves for an extended period of time. This program only works if you have the personnel to pull it off. This experience is not only key but a luxury most systems don't have. The design of this current system

- saves the district 100's of thousands of dollars each year by providing four (4) ALS ambulances but only having the staffing for two (2).
- ensures we're not losing revenue by having to request mutual aid, and depend on outside agencies to cover our calls.
- provides the experience and knowledge base that can be passed down to our firefighters.

It should be noted however that this design fails without the participation of the firefighters. If the volunteers become less willing, or less available to drive, we'll no longer be afforded the opportunity of splitting crews. The design will also struggle should the hiring standards for the seasoned Paramedics change or should our ability to attract and retain them become more difficult. In order for this system to effectively continue, the district must champion the cause through recruitment and retention incentives, recognizing the dedication of not only the volunteers, but also maintaining a competitive environment for the paid staff in order to make our department a more desired place of employment.

Failure of this unique system will result in one of three things happening;

1. The need for additional staff and equipment as the current call volume teeters on needing more than (2) two ambulances between the hours of 8am and 10 pm. An increase of 300 – 400 more calls per year could result in the need for increasing staff.
2. An even larger reduction in EMS revenue will result from having to depend on mutual aid agencies, thus losing revenue opportunities.
3. A reduction in medical protection could equate to poor patient outcomes.

The continued success of this system design is of the utmost importance. Ways to motivate the staff and especially the volunteer staff needs to be a focus of our operation through an incentive program.

**Medical Equipment** - As expected the cost of ambulance equipment and supplies continue to rise. We are extremely diligent in our attempts at keeping costs down. We do a good job of shopping the market and using multiple vendors for our supplies. We also restock IV fluids whenever possible after patient transports in an attempt to keep our costs down. We will have to maintain these strategies in order to keep things as competitive as possible.

Ambulances are inspected every year by the Jefferson County Department of Health to ensure they meet the State standards and contain the equipment and medication requirements set forth by the Board of County Commissioners in order to operate as a transporting agency. Evergreen ambulances are licensed

as BLS units with ALS capabilities. The equipment is evaluated on an annual basis. Adjustments are made according to the standard of care set forth by the Denver Metro Protocols at the direction of our Medical Advisor. Evergreen Fire has adopted a replacement schedule of its ambulance fleet at 150,000 miles of use. New chassis' are purchased and the ambulance patient compartments are remounted due to their estimated useful life expectancy of 1 million miles.

The largest investment, in terms of cost of equipment is that of the heart monitors. The current inventory is nearing its life expectancy. A replacement schedule should begin by replacing 1 - 2 monitors per year at a cost of approximately \$50,000 per unit. Advancements in pre hospital care and the standards of care of early detection for heart attack victims have driven the cost of these units.

New technology in safety equipment has also made the use of "power cots" an unavoidable expense, as our population gets physically heavier. Current costs are \$20,000 per unit and \$25,000 for the loading system per ambulance. According to the Center for Disease Control the average weight of an adult male is now 196 lbs., women 170 lbs. and 10 year old children 90 lbs. This is an increase of 25 – 30 lbs. in each group since the 1960's. Each non-ambulatory patient we transport is lifted by two responders anywhere from 5 -7 times before we have him or her comfortably in a hospital bed. That's 10 - 14 chances for an injury to occur on each call or over 12,000 times per year.

In the early 1980's the average years of service for a medic was estimated to be 7 years. In 2013 that average nearly tripled to 19 years, according to the Journal of Emergency Medicine. As our responder's age and the patient population become heavier, the risk of back injuries to responders from moving and lifting these patients has greatly increased. According to the Center for Disease Control more than one third of all adults in the United States are considered obese. This correlates with an increase in patients being dropped during the loading and unloading phase into the ambulances which is also concerning. Although extremely expensive initially, adding these cots and at least one loading device for the extreme cases could save the district hundreds of thousands of dollars by reducing the risk of injuries sustained from lifting and or dropping a patient. By being proactive we could extend the life of some of our responder's careers.

**EMS Vehicles** - After reviewing statistical data in 2012, the EMS Section reduced the number of ambulances from previous inventory of 5 to 4, leaving a primary and back up ambulance at each EMS station. Historically Ford was the vendor of choice however problems that were never resolved by Ford forced a change and in 2014 we decided to switch to Dodge. We received our first Dodge chassis in May of 2014.

Utility 192 is currently used by EVFD for their command vehicle and as an EMS vehicle to reach places the ambulances can't get to. Due to infrequent use as a command vehicle plans have been made to remove the custom cabinetry in the future and make some interior configuration modifications thus providing more room for patient care providers. This is a very cost effective way of replacing or complementing the ambulance fleet. Today, this vehicle could easily be turned into a licensed BLS/ALS transport unit. Another use would be patient transport out of a remote area to the ambulance or landing zone. The Utility vehicle would be a smoother and a warmer ride than that of an ATV or wheeled stokes.

This vehicle could also be useful in transporting during a mass casualty incident. The life expectancy of Utility 192 is 3 to 5 more years depending on the use.

**EMS Staff and EVFD Training** - Training for EMS is extremely important as the standard of care changes due to advancements in medicine. Over the past few years our training has been adequate but can always be improved. Classes outside the local area are always a challenge, not only in time and travel, but budgetary as well. EFR needs to be dedicated to its staff in providing opportunities for conferences outside of Denver and around the country. The problem with only using local or staff personnel for all your training is that our practices become stagnant with the same information. It's extremely beneficial to learn what other parts of the country are doing. Learning new aspects of our field are a key to future success and patient outcomes. It is recommended the District assist Staff/EMT's or EMR's who would like to advance their level of certification. This proactive approach will not only improve performance but should also decrease EFRPD liabilities, and maintain currency with evolving industry standards. It is recommended that all members be trained to industry standards through in-house and outside training opportunities.

**Community Education** - The EMS Section is very active in community education. In March of 2013 EFRPD joined forces with Evergreen Public Access Defibrillation (E.P.A.D.), a local 501C(3) formed in 2002, to strengthen E.P.A.D.'s mission of not only placing AED's throughout our community but to teach CPR to as many within our community as possible at no cost to them. To date E.P.A.D. has placed 56 AED's throughout the community. Together, since 2013, we've taught over 2000 community members how to use the AED's and how to perform CPR. As a result, we've already seen 2 cases locally of someone's life being saved by one of our students. One of our students saved the life of her brother while on a family vacation.

Programs like this are a valuable piece of our community service and a tremendous way for us to give back. Research based studies have proven that without an AED close by and someone starting quality CPR on the heart attack victim, the chances of survival are a meager 7%. Our community is a safer place because of programs like this.

### Communications

The Communications division has seen major changes in the last strategic planning cycle. The facility was expanded to allow for four positions, a larger kitchen and relocated office space. A Computer Aided Dispatch (CAD) system was installed along with a Report Management System (RMS) and a Voice over Internet Protocol (VoIP) 911 telephone system. The call and radio recording system was upgraded and mapping/geographic information system (GIS) is continually updated. A new federally mandated narrow-banded VHF radio system has been installed with all new mobile and portable radio equipment issued to personnel and installed in apparatus. New radio consoles were installed, linking EFR to Clear Creek, Gilpin County and Blackhawk dispatch centers through a network core at the Miners Mesa tower site in Gilpin County. EFR also entered into an agreement with five of the surrounding fire districts to provide dispatching. A per call fee was established for the service.

The radio system upgrade was mainly funded through a grant with a 20% EFR match from the Urban Area Strategic Initiative (UASI), which is a section of Homeland Security. CAD, radio consoles, 911-

phone system and mapping are funded through the Jefferson County Emergency Communications Authority (JCECA). RMS was funded by EFR.

**Revenue** – The Communications division receives partial funding through JCECA, including maintenance and service contracts for equipment purchased by JCECA for EFR, I.E. CAD, recording systems, 911 telephone systems and GIS.

Five surrounding fire districts are currently dispatched by EFR. Three additional districts are considering joining EFR Communications. The service fee per call is being paid by JCECA for these five agencies, not to exceed \$100,000 in 2014, not to exceed \$75,000 in 2015, \$50,000 in 2016 and \$25,000 in 2017. These agencies are responsible for any additional costs beyond the JCECA funding and will take over full payment of the service fees as of 2018. A current regionalization study contracted by the JCECA and Jefferson County Fire and Police Dispatch could substantially change this model in the future. EFR is participating in this study.

**National Fire Protection Association (NFPA) Compliance** – Standards for operation are set by NFPA 1221, Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems. The Standard of Cover measured benchmarks for call answering, call transferring and dispatching. The Communications Division will set goals based on these benchmarks. NFPA 1221 requires that 95% of alarms received on emergency lines be answered within 15 seconds and 99% of alarms be answered within 40 seconds. It also requires that emergency alarm processing be completed within 60 seconds 80% of the time and 106 seconds 95% of the time.

**Advances in Technology** – EFR entered into an agreement with four other fire department communications centers to share a common CAD system, funded by JCECA. This consolidated CAD system is planned to be in service by the end of 2014. The benefits of this consolidated CAD system include common mapping systems, common terminology, common pre-plan formatting and shared resources for GIS updating and CAD administration.

EFR has purchased licenses for Mobile Data Terminals (MDT's) to be used initially by the Medic units and command vehicles. These devices will be linked to the new CAD system so the responders can monitor information being entered into the CAD system by the dispatcher. Mapping systems and pre-plans will also be available to the responders through these devices. These are planned to be put into service in 2015.

Increased radio coverage can be obtained by placing additional radio equipment at Station 2 and at the Bellvue tower site in Clear Creek County. Funding is being sought for this project. North Central Region (NCR) has been approached for funding of a single dispatch radio channel the surrounding districts can use to communicate with EFR dispatch. The addition of this equipment will assist the communications group with more efficient radio communications with the five surrounding districts that we dispatch.

Other technologies such as Text-To-911, LTE and Nex-Gen shall be followed and evaluated for implementation as they become available.

**VHF Radio System** – With the implementation of the new VHF radio communications system, District coverage issues have surfaced that will require evaluation and resolution. EFR has identified that adding equipment to the Station 2 site and Bellvue tower site in Clear Creek County will help with coverage on

the west side of Floyd Hill, the north side of I-70 and the north end of the District, specifically around Station 2, south to Wah Keeney Park and west to the Evergreen Care Center.

**Training-** The Communications division will evaluate and implement additional training concentrating on wildfire communications, active shooter, mass casualty and other All Hazards communications. The training of new personnel and the on-going training of staff will continue to be evaluated for effectiveness and efficiency.

Other training requirements will include conventional analog and digital radio frequencies, working knowledge of our new radio equipment at Station 2, Buchanan Recreation Center, Bear Mountain Tower and Squaw Mountain Tower, continued training on the new Tri-Tech CAD system as well as the other new systems.

## Administration

### Fire Prevention and Public Education

The District's primary objective is to respond to emergency situations, but it also strives to prevent emergency situations. Prevention of an event is preferable and more cost effective, primary to life and secondly to property. The District recognizes there will always be emergencies, but it will always work toward preventing them or reducing their severity.

**Wildland Fire Prevention** – EFR will continue to increase efforts to educate the residents of the District on wildfire prevention and pre-planning. It is very important that the community understands the importance of mitigation and preparing their neighborhood, not only their individual homes, for wildfire.

- Using the EFR web site as a location source for links and general information on the following:
  - Wildfire mitigation information
  - Ready Set Go program information
  - Grant information
  - Established evacuation route maps
  - Executed Community Wildfire Protection Implementation Plan (CWPIP) documents
- Expanding the meetings and training programs to make the public aware of available programs, literature and grants. This includes the CWPIP program, which gets neighbors together to work on mitigation.

**Community Fire Safety Education** – EFR will continue to expand the education programs currently offered. Programs for each group and on each topic will be evaluated and updated each year for new technologies, method of presentation and effectiveness. The school visits every fall have been very successful and welcomed by the community. This program includes and will expand to include:

- Schools both public and private
- Senior citizens
- Business owners and employees
- Residents of our Fire District
- Our own EFR personnel
- Hands on fire extinguisher training

**Fire Inspections** – Annual fire inspections on commercial buildings allows EFR to educate the business owners and managers on fire safety, fire codes, community and firefighter safety. EFR will:

- Evaluate our customer service to business owners
- Evaluate the efficiency of working paperless utilizing tablet technology
- Evaluate the need for additional staff to absorb the increase in commercial structures, construction, contract work for other agencies, pre-plan generation and education programs
- Educate business owners of common fire safety violations
- Evaluate for compliance with the requirements of the 2012 ISO Fire Suppression Rating Schedule (FSRS).
- Continue working with Clear Creek and Jefferson County Building Departments on the version of the International Fire Code each county adopts. When a County adopts the new International Fire Codes, EFR will keep pace by presenting to the District Board of Directors a Resolution with required addendums.
- Continuously looking at ways to increase the proficiency of our fire inspection program.
- Conduct annual evaluations for the fee schedule

**Fire Pre-Plans** – An evaluation and implementation of the fire pre-plan program will be conducted to ensure drawings and important information are current for the commercial structures in the District. Fire Prevention will develop a system of generating revisions and new pre-plans as part of the fire inspections for existing structures and drawing reviews for new construction.

**Maintenance**

The Maintenance division strives to engineer balance considering lifecycle and maintenance costs. The goal is to extend lifecycles economically while maintaining the highest quality. We will continue to invest in tooling to satisfy current technological advances and to maintain efficient practices. Additional opportunities will be identified, including instruction, records keeping, and fluid analysis.

**Apparatus** – Management has developed and maintained an Apparatus Evaluation Schedule in the previous strategic plan cycle. This schedule is revisited annually based on operational benefit and current condition to forecast lifecycles. Existing work order data will continue to be leveraged to quantify high operating cost and down time. The evaluation schedule was revised in 2013 to include vehicle refurbishing rather than full replacement. This revision allowed the schedule to be financially sound through 2034. Evaluation of the availability of used equipment will be researched with the schedule. The purchase of the Snowmass engine in 2011 proved this to be a viable alternative to buying new. Another consideration during a replacement assessment will be resale value of the current vehicle.

**Apparatus Evaluation Schedule 2014-2024**

2014	Tactical Tender T178	\$346,647	
	Ambulance Remount	\$98,772	
2015	Heavy Tender 4000 gallon to replace T162		\$312,700
2016	None		
2017	Ambulance remount	\$107,661	
	Maintenance Managers Truck	\$47,600	
	Deputy Chief's	\$45,000	

2018	Rescue R141	\$392,000
	Pump 181	\$84,000
2019	Fleet vehicles, Chief 1, Prevention 1	\$79,350
	Heavy Tender T161 remount	\$155,000
	Engine 131	\$500,000
2020	Tactical Tender T177	\$175,000
	Engine 136	\$500,000
	Brush 153, 157, 156	\$206,500
2021	Ambulance remount	\$119,514
	Maintenance vehicle	\$5,000
2022	Ambulance remount	\$122,477
2023	Utility 191	\$48,260
2024	Ambulance remount	\$128,404
	Tactical Tender 175 remount	\$195,000
	<b>Total</b>	<b>\$3,473,885</b>

*Chart 24: \*Staff vehicles are reused in other roles; fire trucks are evaluated for remount versus purchasing new. Costs are based on 3% inflation annually. \*\*This replacement schedule is reviewed annually and revised dependent on the condition of vehicles and the availability of parts. \*\*\* This schedule extends beyond the life of this strategic plan.*

**Facilities** – Management in 2012 developed a strategic capital long-term financial plan. This plan includes facilities maintenance and facilities replacement. Station 1 at 4751 Highway 73 will require renovation or replacement within the next 10 years. A committee will be created to study the current location as well as alternate locations, long term requirements and financial feasibility. The district will also be looked at as a whole, using the Standard of Cover, to determine if additional stations will be required. The Echo Hills and Bear Mountain areas will be evaluated taking into account proximity to the nearest fire station and population.

New water cisterns were added within the district through the last strategic plan cycle, including 40,000 gallon cisterns at Station 8 and Station 5. New residential building requirements also addressed sprinkler systems or cisterns for more remote locations. The district will be evaluated for new cistern locations to fill current holes in the water supply, as well as to address the many private cisterns now located throughout the area. The possibility of increasing the capacity of these water sources will be evaluated by partnering with the property owners.

**Fixed assets** – Fixed assets were included in the strategic capital long term planning. Maintenance will identify systems and equipment with a value of \$2,000.00 or more and that provide critical service. These items will be inventoried by implementing a bar coding system. The bar coding system purchased during the last strategic planning cycle will require administrative training, user training and implementation. Maintenance will continue to identify cyclical and other maintenance needs, forecast lifecycles and project replacement costs, and revise the strategic capital long-term plan annually.

#### **Fixed Asset Replacement Schedule 2014-2024**

2014	Parking lot repair, fire stations	\$15,000
	Station painting	\$3,780
	Station 7 additional garage door	\$45,637
	Painting of Administration	\$10,000

	IT Server	\$20,000
	Parking lot repair, administration	\$10,000
2015	EMS Carpet	\$7,500
	Station 2 and EMS quarters paint	\$10,000
	Replace AV equipment, training room and auditorium	\$10,000
	*EMS LifePack replacement	\$42,000
2016	Administration floor cover replacement	\$8,000
	IT, Backup Server replacement	\$21,200
	*EMS LifePack Replacement	\$43,260
2017	Station 2 parking lot seal coat and stripe	\$7,000
	*EMS LifePack replacement	\$44,520
	Maintenance building painting	\$18,000
2018	Station 2 HVAC replacement	\$14,000
	Station 8 interior paint	\$5,000
	*EMS LifePack replacement	\$45,780
	Administration roof paint	\$5,000
2019	Stations 5, 6, 7, 8 exterior paint	\$16,000
	IT server replacement	\$23,000
	Station 2 parking lot paving	\$12,000
2020	Station 2 paint	\$33,480
	Station 3 lot paving	\$15,000
	Station 1 replacement	\$2,000,000
	Administration paint interior and exterior	\$33,600
2021	Station 2 roof replacement	\$20,000
	Stations 5, 6, 7 and 8 roof painting	\$22,000
	Administration HVAC replacement	\$18,000
	Administration roof replacement	\$12,000
	IT, Back-up server replacement	\$24,380
2022	Station 2 mill and topcoat parking lot	\$65,000
2023	Station 2 floor cover replacement	\$6,400
	Station 3 roof replacement	\$18,000
2024	IT server replacement	\$26,000
	Maintenance roof paint	\$6,200
	Station 2 pave and repair lot	\$14,000
	<b>Total</b>	<b>\$2,750,817</b>

Chart 25: \*This schedule extends beyond the life of this strategic plan.

**Revenue** – Apparatus maintenance services offered to our surrounding agencies has continued to grow with the addition of Elk Creek Fire in 2014. A review of the service fee was completed in 2012, comparing EFR with other fire department service fees and adjustments were made. Other opportunities will be investigated and developed, such as facility rental. Currently the public has enjoyed the use of the Administration buildings auditorium and training rooms free of charge. Also, facilities maintenance and light construction can be offered to our surrounding districts.

## Information Technology

Information Technology (IT) has changed substantially over the last decade at EFR. Email, Internet access, Website access and documentation generation has grown exponentially. Along with access to the outside world and back into the EFR network comes a very important and technologically challenging issue of security and firewalls. EFR has recently upgraded and improved a lot of these systems. As technology continues to change at a rapid pace, EFR will invest in those technologies that benefit the service to the public, EFR personnel and effectiveness of the organization. A replacement schedule for the high value equipment will be added to the Fixed Asset Long Term Plan to ensure funding is available to keep pace.

## Human Resources

EFR's HR Strategy is how the organization accomplishes its goals through people. The HR strategy is developed to ensure human capital has alignment to the organizational mission, vision, values and EFRPD Strategic Plan. Every two years starting in 2015 the HR Manager along with the EFR Chief will conduct a gap analysis between current HR programs and future requirements in all five major HR components. This team will formulate and prioritize important critical people issues identified from the gap analysis.

The Five Major Components of an HR Strategy:

- Talent Planning and Acquisition
- Performance Management
- Total Rewards/Compensation and Benefits
- Training and Development
- Talent Engagement

The HR Manager will follow the five-step process outlined below for a clearly articulated HR Strategic Plan incorporating all five components:

1. Planning - HR and Fire Chief will do an internal and external assessment every two years to determine priorities and assess where the District is now.
2. Results - HR will determine objectives every two years to align with the business of where we want to be.
3. Strategy - HR will determine how the objectives will be met. We will always align with the Mission, Vision, Values and Organizational goals.
4. Implementation - Action Plans/Contingency Plans: Who must do what? How will we get there?
5. Review – We will monitor through quarterly metrics to be identified and possibly: Budget, Recruitment (Internal vs. External), Retention, Employee Survey, Exit Data, and Business Metrics.

Talent Planning and Acquisition Strategy: We will attract, recruit and select the best talent available for the EFR culture. We will have an effective on-boarding program for all employees, volunteers, and board positions. The organizational benefits include:

- Increased retention
- Increased likelihood that new employees will reach required performance levels sooner
- High employee engagement

Performance Management Strategy: The system will be objective based and will account and reward for consistent employee behaviors that align to expectations and values.

Total Rewards Strategy: The program will award all employees according to the total rewards philosophy.

Training and Development Strategy: The training and development system will be created to develop all individuals who are the leaders of tomorrow and lead to high retention in key positions.

Talent Engagement Strategy: The program will ensure highly engaged employees who are productive and at all times support the organizational mission, vision and values.

## **Financial**

\*Adopted by the EFPD Board of Directors 09/26/2008

Financial goals are broad, fairly timeless statements of the financial position the District seeks to attain.

The financial goals for EFPD:

- To be a fiscally responsible District.
- To have adequate financial reserves for uncertain economic times.
- To invest to preserve or enhance District facilities, buildings and equipment.
- To provide services in the most cost-effective manner.

**Financial Policies** - Financial policies support the financial goals. They allow the District Board to view their present approach to financial management from an overall, long-range vantage point. They are general statements that guide decision-making in specific situations to ensure that a decision will contribute to the attainment of the financial goals. Federal and state laws, rules and regulations, the District Bylaws, and generally accepted accounting principles promulgated by the Governmental Accounting Standards Board (“GASB”) and the Government Finance Officers Association of the United States and Canada (“GFOA”) guide the District’s financial policies and processes.

**Budget Policies** - Sound financial practices along with the desire to continue to be fiscally responsible dictates that budgets be balanced, constantly monitored, and responsive to changes in service demands. With these concepts in mind, the District has adopted the following budget policy statements:

- The District will adopt an annual Budget that contains operating budgets for all funds.
- Annual operating Budgets will be adopted on a balanced basis, where current operating revenues (estimated revenues) are used to fund ongoing operating expenditures/expenses (appropriations). Fund balance should not be considered a source of funds for ongoing operating expenditures/ expenses. Nothing in this policy shall prohibit the use of operating revenues for capital expenditures/ expenses.
- Unreserved and undesignated fund balance may be appropriated as part of the adopted Budget to fund capital, one time emergency expenditures/ expenses, or one time operating costs. Unreserved and undesignated fund balance should not be used to fund ongoing operating expenditures/ expenses in the adopted Budget.
- One-time revenues that are not required by law or agreement to be expended for a particular purpose will only be used to fund capital, emergency expenditures/ expenses, or one time operating costs in the adopted Budget. Examples of one-time revenues include, but are not limited

to, proceeds from the sale of property and other major assets, governmental grants that are not regularly received and are unlikely to recur on a regular basis, major gifts or donations, and major insurance recoveries.

- Reservation and designation of fund balance will be estimated in the adopted Budget for amounts of fund equity legally restricted or otherwise not available for appropriation.
- The District's fiscal year is the calendar year and its Budget calendar shall be as provided for in the Colorado Revised Statutes.

**Operating Position Policies** - Operating position refers to the District's ability to balance its Budget on a current basis, maintain reserves for emergencies, and maintain sufficient cash to pay its bills on a timely basis. The District operating position policy requires that:

- The District will pay all current operating expenditures in the General Fund with current operating revenues, unless explicit approval is granted by the Board. The general policy intent is that ongoing General Fund operating costs will not be financed from fund balance, unless and until all other alternatives have been exhausted.
- District Staff shall prepare financial reports of the financial position and results of operations for the major funds of the District or any other fund requested by the District Board. The reports will contain the revenue and expenditures of the funds with an analysis of the results for the end of each month.

**Revenue Policies** - Revenues determine the capacity of the District to provide services. Under ideal conditions, revenues would grow at a rate equal to or greater than expenditures. To ensure that District revenues are balanced and capable of supporting our desired levels of services, the District has adopted the following revenue policy statements:

- Each year and whenever appropriate, existing revenues will be re-examined and possible new sources of revenues will be explored to ensure that the District is maximizing its revenue potential.
- The District will strive to be informed and aware of all grants and other aid that may be available. All potential grants and other aid shall be carefully examined for matching requirements (both dollar and level-of-effort) and restrictive covenants, to ensure that participation in such grants will be beneficial and cost-effective.
- Each year and whenever appropriate, intergovernmental revenues will be reviewed to determine their short and long-term stability, to minimize the impact of any adverse changes. Intergovernmental revenues shall be used as legally prescribed or otherwise set forth by policy.
- One-time revenues will be used for capital improvements, one-time expenditures or as legally restricted to a specific purpose.
- The District will carefully and routinely monitor any amounts due. An assertive collection of all receivables will be followed.
- The EMS Fund will strive to generate revenue sufficient to support the costs of services. Each year and whenever appropriate, the District will review EMS fees.
- Revenue forecasts shall be conservative, using generally accepted forecasting techniques and appropriate data.

**Expenditure/ Expense Policies** - Expenditure/ expenses are a rough measure of the District's service output. While many expenditures/ expenses can be easily controlled, emergencies, unfounded mandates, and unanticipated service demands may strain the District's ability to maintain a balanced Budget. To ensure the proper control of expenditures/ expenses and provide for a quick and effective response to adverse financial situations, the District has adopted the following expenditure/ expense policy statements:

- Expenditures/ expenses and purchase commitments will be made in a form and process that is legal, appropriate, funded, authorized and sufficiently documented.
- Expenditures/ expenses and purchase commitments will be recorded in an accurate and timely fashion.
- Encumbrances will be used to properly show the commitment of funds against appropriations.
- The balances in appropriation accounts and programs will be monitored regularly to ensure that the total of expenditures/ expenses and purchase commitments in any account do not exceed the authorized Budget for that program.
- Requests for competitive bids, proposals, formal and informal quotes, and other methods of seeking and encouraging vendor competition will be obtained as required by law or otherwise established by the District Board or the Fire Chief.
- The District will maintain an effective risk management program that provides adequate coverage, minimizes losses, and reduces costs.
- Appropriations for all operating funds shall lapse at the close of the fiscal year to the extent that they shall not have been expended or encumbered.
- Due to the multi-year nature of many capital improvement projects, appropriations for the Strategic Capital Fund will continue through project completion and shall not lapse at year-end.

**Capital Expenditure/ Expense Policy** - Capital expenditures/ expenses refer to items purchased with a value of over \$5,000 dollars and having a life of more than one year or which significantly extends the useful life of an asset already in service.

- Items meeting the definition of a capital expenditure shall be added to the fixed asset inventory of the District.

**Reserve Policies** - Reserves are used to buffer the District from downturns in the economy and to provide an additional source of accumulated funding for major capital improvement projects. The policy of the District Board is to maintain the un-appropriated fund balance in the General Fund at or above 15% of the current year General Fund operating budget.

**Cash Management and Investment Policies** - District cash will be invested in accordance with the Investment Policy approved and adopted by the Board at the November 19, 2008 Board meeting.

The prioritization for investing District funds shall be:

1. Safety
2. Liquidity
3. Yield

**Debt Management Policies** - The District shall maintain a debt policy, which establishes criteria that will protect the District's financial integrity while providing a funding mechanism to meet the District's

capital needs. The underlying approach of the District is to borrow only for capital improvements that cannot be funded on a pay-as-you-go basis. In some cases, debt can be an effective way to finance major capital improvements. Properly managed debt preserves the District's credit rating, provides flexibility in current and future operating budgets, and provides long-term assets that maintain or improve our quality of services. To provide for the appropriate issuance and responsible use of debt, the District has adopted the following debt management policy statements:

- Long-term debt will not be issued to finance current operations.
- The maturity of the debt should not exceed the useful life of the improvement.
- Certificates of Participation (COPs) should not exceed 12% of the issuing funds total expenditures. Any COP project that generates revenue should have the revenues credited against the total lease payments before calculating the limit.
- General Obligation Bonds (GO) should be limited to projects with an asset life greater than ten years. The total GO bonds issued should not exceed 50% of the actual taxable value of the property in the District. Limitations on debt shall meet all limits of Article X Section 20 of the Colorado Revised Statutes as interpreted by the District's Attorney.
- Enterprise revenue bonds, notes, or leases should be no greater than 15% of the revenues of the fund supporting the debt or lease unless it is a newly approved revenue source that is dedicated by the District Board or the voters to repayment of the debt.
- Each annual operating budget will include the full appropriation for repayment of the principal and interest due that year on each debt or lease issue.
- Debt limits established by law and policy will be calculated at least once each year, and whenever otherwise requested or appropriate.
- Good communications will be maintained with bond rating agencies, bond counsel, banks, financial advisors and others involved in debt issuance and management.
- The District's comprehensive annual financial reports and official statements will reflect our commitment to full and open disclosure concerning our debt.

**Capital Improvement Projects (CIP) Policies** - Capital improvement projects refer to projects of substantial spending that construct an asset, lengthen the life of an asset or increase the value of the asset. They often cross over two or more budget years. The District will prepare a six year CIP for all funds, starting with the current year.

- The program shall include all projects that meet the definition of a CIP project.
- The program shall include the total estimated cost of the project and how much the project will add to ongoing operating costs.
- The program will be compiled during annual budget preparation.
- A prioritization matrix shall be used to rank CIP projects.

**Periodic Review** - The Comprehensive Financial Policy Document and each of the policies contained within shall be reviewed by the District Board during odd numbered years. The policy has been written to be flexible and easily amended to deal with the style of the times.

## Other Considerations

### Insurance Services Office Ratings

EFR will continue to document changes made to operations in preparation for a future audit. A revised Fire Suppression Rating Schedule (FSRS) was released by ISO in 2012. EFR will work with the Metro District in preparation for a future audit, adapting to this new set of requirements. A pre-audit visit to the EFPD will be scheduled for the purpose of training on the revised ISO requirements. Areas of improvement identified as a result of the 2010 audit and relative to the 2012 ISO FSRS include:

#### Communications:

- Continuous tracking of Process Times has been implemented and will be monitored for compliance to NFPA 1221.

#### Fire Department:

- Evaluation and possible implementation of expanded officer training;
- Evaluation and implementation of expanded driver engineer training;
- Promoting larger attendance at company trainings, particularly relating to structure fire;
  - Note: the recent construction of the Station 2 Live Burn Facility should have a positive impact on firefighter participation in structure fire training.
- Promote training with mutual and auto aid partners.

#### Water Supply:

- Evaluation of cistern distribution, including the possibility of increasing the capacity of some of the smaller cisterns;
- Teaming with the local Metro Districts and Water Districts to identify and implement systems to improve the Water Supply ISO rating;

### Grant Funding

There are many local, state and federal grant programs established to assist fire departments with funding for a wide variety of needs. EFR shall continue to commit to researching, identifying and applying for grant funding under the established revenue policy.

EMS has been very successful receiving grant funding from the Regional Emergency Medical and Trauma Advisory Councils (RETAC) for trainings and equipment. Completed in 2013 the narrow banded VHF radio system was funded through the Urban Area Strategic Initiative (UASI) and other funding is currently being sought to expand the radio system through North Central Region (NCR).