

Tightwad Fire Protection District
(Fire Department Review)



11585 E HIGHWAY 7
TIGHTWAD, MO 64735
Chief Chuck Willis

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by the

National Fire Services Office

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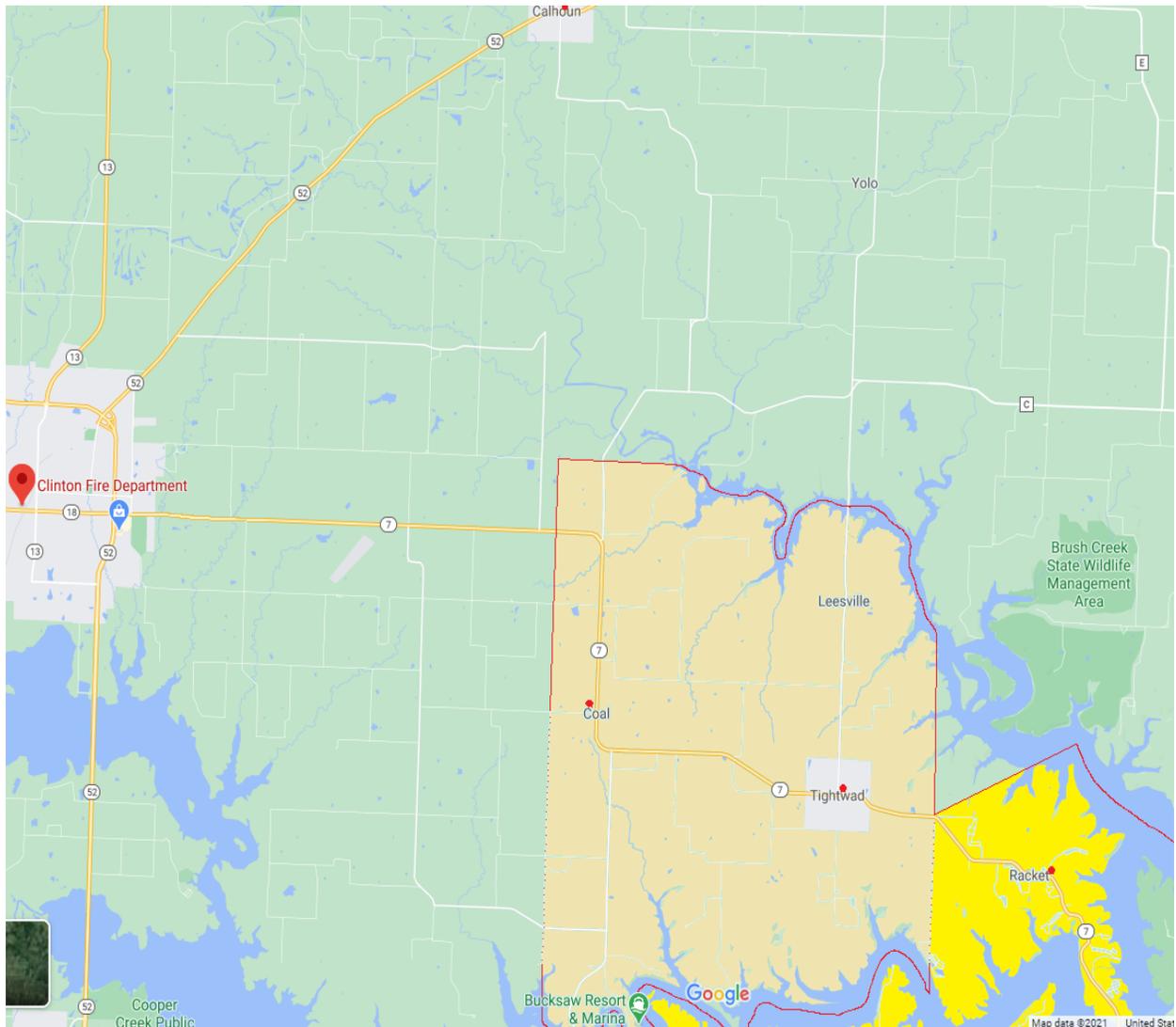
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Fire Department History

The Henry County Circuit Court on August 28, 1990 established “The Tightwad Fire Protection District” after a successful election by the voters on August 7, 1990.

The Fire District is governed by a Board of Directors and the daily Operations is supervised by the Fire Chief. The Fire District is protected by two Tightwad fire stations.

The Fire District's boundaries are the same as the Leesville Township of Henry County, Missouri, as shown on the map below.



The Fire District's boundaries can expand by petition by those wanting to be included.

The Fire District maintains a single NFPA 1901 fire engine, a NFPA 1901 Rescue/Service truck, multiple water tenders (tankers), and multiple brush trucks. The single fire engine is being split between two fire stations which is extremely problematic; this issue will be explained in great detail further in the document.

Engine



Rescue/Service Truck



Tenders and Brush Trucks



Stations

Station 1 - 11585 E Highway 7, Tightwad, Missouri 64735. Consists of four bays and is of ample size for the fire district.

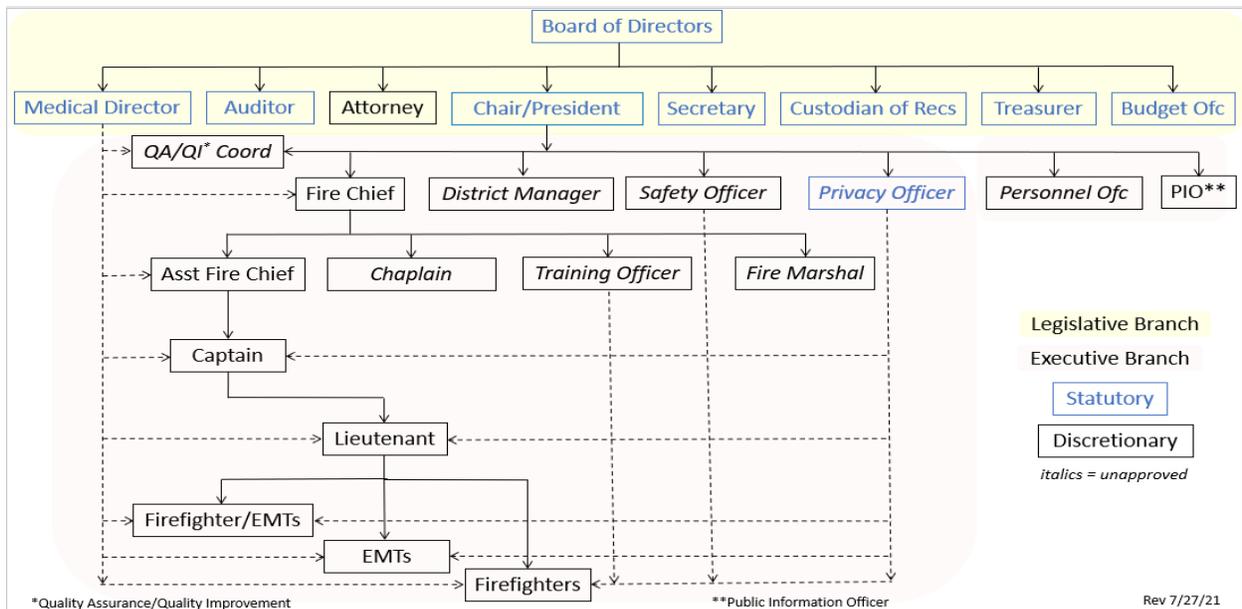


Station 2 - 777 SE 250 Rd, Coal, Missouri 64735. Consists of four bays and is of ample size for the fire district.



Fire District Management Structure

Great detail has been given to design an excellent model to govern the fire district and allow for future expansion in emergency services since some positions may not be currently held. (See chart on next page)



Confusion With the Fire Districts Mission

“Fire departments evolve because specific unpleasant events have occurred and a community is searching for an alternative outcome of the event. These events can range from: house and business fires, car accidents, medical illnesses, agricultural vehicle fires, vehicle fires, agricultural/forestry-wildfires, and drownings. Fire departments provide groups of individuals who train for emergency responses, learn to operate very specialized equipment, and design a response mechanism to notify of an event.” Early into the design of a fire department a **“Mission Statement”** is developed to keep future members on task to the fire department true assignment.

It’s interesting that in a picture posted in the Tighwad Facebook listing it says: **“Fire Districts Mission”** a picture shows two firefighters fighting an at-grade fire with appropriate turnout gear and using a modern TFT nozzle, all appropriate to fighting structure fires.



Yet, only recently has the fire district purchased a true NFPA 1901 fire engine. So, the immediate question in my mind was “how did they fight structure fires safely before now”? I fully understand it’s normal for a fire department to offer multiple levels of emergency services, but during my past 30-years in fire services, very few times have I found delivering structure fire protection **not** being at the top of a fire department’s list. Yet, when I walked into Tightwad Station-1 I found myself very confused. In the second bay was a good-looking custom fire engine, but it carried very minimal equipment. Across the bay in turnout-gear racks and on the ground, lay new looking breathing masks, self-contained breathing apparatus, turnout gear, new looking helmets, etc. As I continued to scan the room, I found the walls looked more like a government property surplus room with miscellaneous old military gear scattered all around. As I walked through the bays, multiple brush trucks and tankers appeared. It became very evident that forestry wild-fires had become their primary service and structure fire engines were replaced by brush fire trucks. At this point it was easy to see, that over the years the fire district had lost their way on holding up their true Mission. Somehow, over the years, they slowly became an agricultural/forestry-wildfire unit and adopted that as their new primary mission.

So how does a fire department start?

Fire departments evolve because specific unpleasant events have occurred and a community is searching for an alternative outcome of the event. These events can range from: house and business fires, car accidents, medical illnesses, agricultural vehicle fires, vehicle fires, agricultural/forestry-wildfires, and drownings. Fire departments provide groups of individuals who train for emergency responses, learn to operate very specialized equipment, and design a response mechanism to notify of an event.

How did the fire department transform into a forestry/wild-fire unit?

Usually, by fire department having a lack of professional outside training. We call this “fire services inbreeding”. It’s when a local firefighter decides expanding their training knowledge is not really needed. Professional fire training is so critical because it exposes us, and prepares us, for the what ifs, not just the more prevalent calls. Structure fires and vehicle fires do not happen very often each year, and for that reason we have to continually train especially hard to be prepared for these events. The greatest personal and economic loss is created by structure and vehicle fires. It’s also a moment in time where a professional response can save lives and property.

But it must be understood that a well-trained fire department would never attempt to use a brush-fire truck to suppress a structure or vehicle fire because they lack the needed pump size, tank capacity, and safety features such as attack hose relief valves. These valves limit excessive water pressure being exerted by the pump on the firefighter and hose. As nozzles are opened and closed the water pressures can fluctuate greatly. If this water pressure issue is not controlled, then tremendous harm can occur to the

apparatus and fire staff. Also required are multiple hoses diameters required depending on the needed water flow. Just because a vehicle has the capability to spray water, that does not mean it is designed to fight fires properly. Just being able to spray water on a fire is not managing a fire scene properly. Thus, Tightwad using pickup trucks (FEMA Type-6 units) on structure or vehicle fires is totally dangerous and is not in the best interest of the public or staff. If agricultural vehicle fires are a current flavor of events, and a large fire engine is too bulky to respond off-road, then the fire industry has developed a (FEMA Type-3) 4x4 which has a 500+gpm UL approved fire pump that automatically pressure reliefs the hose, has a 400+ gallon water tank, multiple levels of fire hose, and has full off-road capability. As a past Operations Chief of Berthoud Fire Protection District in Colorado I managed the use of two Type-3 vehicles. These units could transform from a brush fire unit minute, and into a mini-attack fire engine the next. They carried: 1", 1.5", 2.5" and 3" hose. They carried 1", 1.5", 2.5" and 3" nozzles. They carried: Ladders, SCBA's, Pike Poles, K12 Saws, Chain Saws, 3 fire extinguishers, foam, Jaws of Life, etc. These units were prepared for the what ifs.



Type-6 Brush Fire



Type-3 Preparing to Defend a House

But Tightwad FD using a 3500-grade chassis pickup truck, a pickup truck that has a little of this and a little of that, and is normally over weight, to deal with any fires greater than grass fires, is extremely dangerous.

Tightwad has revolved its entire fire suppression capability around these same Type-6 vehicles. When I was the Operations Chief at Berthoud Fire Department, we too had FEMA Type-6 vehicles, but they were loaded with minimal equipment and were only approved to be used at grass fires and/or search and rescues; and nothing else.

Proper training explains and outlined issues like these. Quality training allows fire departments to learn from other's mistakes and successes. A well-oiled fire department revolves around quality training. We learn new and improved techniques every year.

Is the Fire Department moving in the right Direction?

It was extremely refreshing when I spoke with the new chief of my concerns, he was in full agreement with my observations. He stated that the fire department had lost its focus over the years and was making moves to correct the problems. It's evident that he's on the right track since he steered the fire department into purchasing their new, true, fire engine. This purchase was a great move forward.

During my second trip back to Tightwad, great improvements had been achieved in organizing the fire house, slowly devolving it from a military property room into a growing fire department.

Another benefit of the fire department moving towards gaining the proper equipment and training is that Tightwad FD will soon be able to offer financial saving to many residents of the fire district by improving the fire departments PPC insurance score which is used to set property insurance premiums. An organization named the Insurance Services Office (ISO) evaluates and grades communities throughout America on how prepared each fire department is in dealing with structure fires. ISO requires a minimal fire truck to offer 750+gpm@150psi UL listed pump just for the fire department to qualify for a Class-9 or better rating. ISO PPC classes in Missouri range from the Class-10 (meaning no Fire Engine), to a Class-1 being the very best. Now that Tightwad is responding and maintaining a true NFPA 1901 Fire Engine that satisfies ISO's minimal Engine qualifications, they are positioned to improve insurance rates through the program.

Fire Station-2 - No Fire Engine, no ISO credit

For any Fire Station to be considered creditable by ISO the fire station must have an NFPA 1901 Fire Apparatus in it or the fire station offers no credit at all by ISO. A Fire station has the opportunity to provide ISO coverage up to 5-road miles radiating from the fire station as long as a true NFPA 1901 Fire Engine is housed there. Station-2 is completely uncredible today. The Fire District needs to purchase another Fire Engine to allow Station-2 to earn credibility. There is another reason for station-2 to maintain a Fire Engine. This same Fire Engine is needed to refill the Water Tenders. By station-2 having a Fire Engine, one Engine could be at fire-site, and one Engine could be at the fill-site.

Fire Engine Equipment

On the next page is a list of items needed on each Fire Engine. This list offers a standardization to enable each fire engine the opportunity to provide equal services. One item no listed on the page is Pump and Hose test. NFPA 1911 Pump and NFPA 1961/1962 Hose testing must be accomplished annually for a fire engine to receive full credit.

Brush trucks are exempt of the items on the next page since their pump is not UL certified at 750+gpm@150psi therefor they are not considered structure fire apparatus.

FIRE SUPPRESSION RATING SCHEDULE

Appendix A

TABLE 512A PUMPER EQUIPMENT AND HOSE

Equipment and Hose	Needed	Points Credit/Unit	Total Points
Booster tank	300 gal. or larger	1/10 gal.	30
Hose:			
15' soft-suction or 20' hard-suction hose	1	12	12
1½", 1¾", or 2" hose carried	400'	3/50	24
Master stream appliance (1,000 gpm)	1	100	100
Nozzles:			
2½" playpipe with shutoff and 1", 1⅝", and 1¼" tips	1	20	20
2½" combination spray with shutoff	1	30	30
1½" or 1¾" combination spray with shutoff	2	10	20
SCBA (30-minute minimum)	4	24	96
Extra cylinders (carried)	4	6	24
Salvage covers (minimum size of 12' x 14')	2	2	4
Electric handlights	2	2	4
Hose clamp	1	4	4
Hydrant hose gate (2½")	1	4	4
Gated wye (2½" x 1½" x 1½")	1	4	4
Radio:			
Mounted	1	32	32
Portable	1	16	16
Ladders:			
12' to 16' roof	1	10	10
24' extension or larger	1	16	16
Annual tests:			
Pumper (see Table 512B)	1	100	100
Hose (see Table 512C)	1	50	50
	Total		600

Service Truck Need and Equipment

Another apparatus that can offer ISO credit is a Rescue/Service truck. These units are rolling toolboxes since they can provide specialized support equipment like: generator, scene lighting, Jaws of life, K12 Saw, chain saw, hand lights, etc. This vehicle needs to respond to all structure fires. The more equipment carried from the list on the next page the more credit a Service Truck can receive. The list on the next page identifies the quantity of items needed per Service Truck. A Service Truck does not have to carry every item identified on the list for the unit to be counted during the ISO grading, but your points will improve the more each equipment list is followed. The Service Truck must attend all structure fires. This vehicle is a tremendous asset at vehicle accidents, rescue events, search and rescue, and at structure fires.

See Service Equipment needed on the next page.

FIRE SUPPRESSION RATING SCHEDULE

Appendix B

TABLE 542A EQUIPMENT FOR A SERVICE COMPANY

Equipment	Needed	Points	
		Credit/Unit	Total Points
SCBA (30-minute minimum)	4	24	96
Extra cylinders (carried)	4	6	24
Salvage covers (minimum size of 12' x 14')	6	2	12
Electric generator (3,000 watt)	1	25	25
Portable floodlight (500 watt)	3	4	12
Smoke ejector (5,000 cfm)	1	20	20
Portable thermal cutting unit	1	20	20
Saw – power (chain or heavy-duty rotary type)	1	20	20
Electric handlights	4	2	8
Pike pole (plaster hook):			
3' or 4'	2	2	4
6' or longer	4	2	8
Radio:			
Mounted	1	32	32
Portable	1	16	16
Ladder:			
24' extension or longer	1	25	25
16' roof or longer	1	25	25
10' attic or longer	1	4	4
14' combination or longer	1	5	5
	Total		356

Water Tenders (Tankers)

The fire district needs two large tankers to be able to complete a successful ISO approved water shuttle. One Tanker should be placed at each fire station to improve response drive distances. Tenders perform water shuttles that can offer an “Alternate Water” grading which improves the total ISO score. Larger tankers hold more water thus have the opportunity to deliver more water to a fire scene, thus can earn greater ISO credit. It is also important that tankers be maintained properly and in 24/7 operational status. Your Tenders must have operational quick dump (Newton) chutes which can offload great volumes of water quickly. It’s important that Tenders to have the capability

to unload fast, and then refilled fast. All Tenders must carry a Portable tank equal to the tank size.



Tender (tanker) Offloading Water

Brush Trucks

These units are not structure fire rated so their design and build are completely up to the fire district. Being a National Credited Fire Instructor III it's very important for Tightwad to retrain their firefighters concerning the true capability of Brush Trucks and when they should truly be utilized. I completely agree that brush trucks are necessary, but they should be used for events within their design element. These units must also be maintained and serviced to a level where they can roll at any given time. A rule of thumb for brush trucks are "the newer the better". Another issue to be considered is, if you build and design it, you become the manufacturer, meaning you own the liability for any faults. For this reason, many departments only purchase these units ready to roll.

How many total fire apparatuses does Tightwad need?

For two fire stations the list of apparatus below is recommended:

(2) Fire Engines (Priority to accomplish) Engine-2 could be a Type-3 if greater pump and roll capacity is needed at agricultural fires.

(2) Service Trucks - the department can actually earn a good ISO rating with just one Service Truck but two would offer additional ISO credit.

(2) Tenders (Priority to have Larger Tankers fully operational with Newton Valves)

(2) Brush Trucks (the department needs to reevaluate the true condition of these units. These units are only needed at structure fires if a grass fire occurs.)

Tightwad Fire District does not have enough firefighters to respond more apparatus than have been identified. Trying to deliver and maintain greater numbers of fire apparatus than identified will be extremely problematic and will degrade the actual response efforts. Do not allow yourself to become a used car-lot of old apparatus. Also, responding too many apparatuses to structure fires actually can lead to poorer ISO scores, than better scores.

Automatic-Aid (AA)

Most people believe that just because the neighboring fire department responds to your structure fire ISO will offer credit for their response, but this issue is much more complicated than that. There are five main issues that must be met for the AA to be credited. First, Tightwad must have a special need that the AA fire department fills; and the AA response must be to 100% of Tightwad's fire district boundaries; second, it is recommended that the AA department must train with Tightwad at least twice a year; third, the two fire agencies must use a common radio dispatch frequency; fourth, the AA department must respond with an equipped 1901 Fire Engine and/or Ladder/Service Truck and/or Water Tender; Fifth, there must be a current signed Automatic-Aid agreement in place.

Training

Firefighter Training –ISO has set minimum hourly benchmarks that firefighters should strive for. It is understood though that volunteer firefighters cannot normally meet these standards, but as a rule of thumb each firefighter should try to meet as many hours as possible.

These standards are:

- Company Training which needs to be completed by all firefighters. The goal is for each firefighter to receive (192)-hours annually of Company training;
- All Officers should receive twelve (12) hours of Officers training annually;
- All firefighters should receive six (6) hours of Hazmat Training annually;
- All drivers should receive twelve (12)-hours of drivers/operators training annually;
- All firefighters should receive eighteen (18)-hours of Facility training annually; such as live fire training, smoke room training, etc. Burn Buildings must meet NFPA standards.

Pre-Fire Planning

Commercial buildings and churches in your fire district need to be Pre-fire planned. This should be accomplished by your firefighters annually.

SOP's and SOG's

These documents should be relative to the fire training being offered and must include daily operations and duties. These same documents must be updated annually.

Alternate Water

Adding alternate water sites that are certified by a 50-year drought study would have the same effect as if the fire district installed a water system or cisterns. A Water shuttle is an extremely good method of improving the ISO score, but refilling tankers will require water sources. Another step the fire department needs to accomplish is locating water sites (ponds, lakes, streams, etc.) that can be used as refill sites. These sites would then go through a rigorous process of being graded for their 50-Year Drought Study; a requirement by ISO. To expand the availability of water sites that can be used it is highly recommended to purchase a Turbodraft to offer a supply point needed to refill the Tenders with water from the alternate water sites. A Turbodraft offers the capability of an Engine to be 200 feet away from the water site thus improving the pool of sites that can meet the true usability. Turbodrafts can deliver large amounts of water through an LDH hose to the fire engine at fire-sites; and/or fill-site.

Current Services Overview

The fire district is definitely in a better place than it was in recent past. With the addition of the Fire Engine, Service Truck, reorganizing of the fire stations, and working on additional training improvements, these are all leading to very positive things. There are still some apparatuses that should be considered for surplus. It's highly recommended that any equipment not needed for the daily operation of the fire department should be put in surplus status. Being a junk yard of old equipment or holding onto surplus items is not a benefit to the fire department. Keeping apparatus and items that are truly not needed for the fire deployment only increase your annual spending through their repairs, insurance cost, and their operation can actually be dangerous at times. As for the Tenders, the bigger tanks are better for your ISO grade, but they must be upgraded to Newton valves. The fire district is currently headed into the direction of becoming an ISO Class-6/6y or better. This rate change would be a great improvement by placing many residents in a position to receive preferred insurance premiums. Once alternate water sites are identified and these sites certified a water shuttle grading could come next.

It is recommended within the next few months to request an ISO regrade for Station-1. Station-2 will require the purchase of an Engine before this can be done for it. Please remember, Tightwad FD is the ISO rate keeper for the district. The Property Insurance rates being charged are a direct result of good, or bad, fire department operational decisions. Improving the ISO rate could be a tremendous win for the taxpayer.