Iron County Emergency Management
581 N Main St., Suite 2, Cedar City, UT 84721
Phone: 435-867-5332

John Higley, Emergency Management Coordinator
Email: jhigley@ironcounty.net
Rob Dotson, LEPC Vice Chair
Email: robd@cityofenoch.org

LEPC MINUTES
August 19th, 2015
12:00 p.m.

WELCOME AND INTRODUCTIONS:

Meeting opened at 12:02 pm on August 19th, 2015

Rob Dotson welcomed everyone out to LEPC.

BUSINESS:

Review of May 20th, 2015 Minutes done individually

Motion to accept by: Bruce Andersen, Iron County Landfill
Seconded by: Debra Frank, CERT/MRC/HAM
NO OPPOSED

- Rob took a second to thank the Parowan Café for lunch.
- John made a brief announcement that AMPAC had a spill approximately 2 months ago of a chemical that they are not required to report on. It was chlorine that has the same health risk of table salt. As a good neighbor they still went ahead and reported it to the EPA which in turn notified my department. Because of this John wanted everyone to know that he has asked AMPAC to represent LEPC in October to talk about their operations are on site, what the spill was exactly, as well as what their emergency action plans are for spills.
- Rob took another minute to reiterate what LEPC is all about. The Local Emergency Planning Committee started years ago to discuss and help with the organization and planning of emergency plans of chemical spills. The other thing we are using this LEPC for is to remind local entities of as well as help organize Emergency Operation Plans. Should those of you that have EOP's, we would greatly appreciate it if you could email those plans to John Higley.

REPORTS:

- *Elected State & Local Officials:* No Reports
- *EMS:* No Reports
- *Fire:* No Reports
- *Other Health Officials:* VVMC = No Reports
- *Emergency Management:* John Higley announced that he has some funds available for the local law enforcement and he has emailed the police chiefs to see how he may be able to spend these funds.
- *Community Groups:* Debra Frank wanted to let everyone know that they have been really working HAM radio group to make it accessible to work with the new radios. In addition to that there is a Basic CERT Training in November of this year on the 6th & 7th as well as the 13th & 14th. In addition to this please don't forget that September 19th is our Preparedness EXPO.
- *Owners/Operators of Covered Facilities (Tier II):* No Reports

REPORTS: **(cont.)**

- *Kern River Gas:* No Reports
- *Paiute Tribe:* No Reports
- *Law Enforcement:* No Reports
- *SWUPHD:* Paulette Valentine took a minute to thank those that attended the functional exercise in June. They had over 360 people participate region wide with over 175 agencies. It was a very well exercise and they were able to identify some gaps that they can address in the future. She also wanted to remind everyone of their full-scale exercise on March 17th, 2016. The health department is taking every precaution in making sure that all requirements are met for this exercise by developing a committee to help in this endeavor. Also wanted to inform of the recent cases of influenza breaking out around the area and wanted everyone to make sure that they wash their hands often and stay home should symptoms reveal themselves. Lastly, she introduced her newest member of the team, Megan Church, their new medical reserve coordinator.
- *SUU:* No Reports
- *Questar:* Not present
- *Transportation:* No Reports
- *State DEM:* No Reports
- *American Red Cross:* No Reports
- *Environmental Groups:* No Reports
- *Media:* Not present

While introducing Ryan Riddle, Rob Dotson took another moment to describe the new legislation rules coming out in regard to fire suppression…… "At the 10,000 foot level there have always been big challenges in funding fire suppression in the State of Utah. There is a policy group that our Cedar City Fire Chief and I are involved with that works with the legislature to change how local fire companies and local groups are held responsible for first responding but financially becomes an issue. So they are working through these new policies which will come to the legislature during the next session to change how it is done so the burden isn't laid so heavily on local and small counties and cities."

PRESENTATION: Time turned over at 12:30

Ryan Riddle, State/County Fire: Ryan shirt tailed on what Rob had to say about the new policies and indicated that it is a result of historical fires. In the past cities have been held 100% responsible for suppression of wildland fires, which has bankrupt or nearly bankrupt some communities throughout the State of Utah. Unfortunately the way the laws are written, the State of Utah cannot enter into an agreement with that community or with any unincorporated cities. So the policy group was put together and one of their main focal points was to pay for fire suppression across the board on all private and state lands in the State of Utah. This is a really neat step that they are taking which takes it from a reactive fire suppression standpoint to a proactive education and prevention mitigation program.

PRESENTATION: *(cont.)*

Ryan continued with his fire/weather presentation… John Higley has asked me to talk today about fire weather and how it relates to wildland fire. Fire weather is a huge impact to wildland fire. Most of you know me; my name is Ryan Riddle with the Utah Division of Forestry, fire and state lands. In a cooperative agreement with Iron County I represent county as the District Fire Warden. My position is a liaison between the federal governments and the local governments. I oversee the fire departments, more specifically the wildland fire program for Iron County and my responsibilities are unincorporated private and state lands. That may change with this new legislation.

The National Weather Service (NWS) mission statement is much like ours, which is "Protection of life and property and the enhancement of the national economy."

Obviously wildfire has a major impact financially as well as commerce throughout the United States and so with the help of the NWS we hope to mitigate or move resources to high fire danger areas to reduce that hit on the economy and of course personal property and people themselves; firefighter and public safety being the number one goal.

A fire needs a few things to actually burn such as fuel, weather and topography. Terrain is very noteworthy as well. Today we are going to talk about the weather aspect of these conditions. Weather is our biggest contributing factor on how flame or fire is going to spread in the wildland environment. If we don't have a weather influence, especially wind, our fires will be terrain driven. Most of our fires in southwest Utah are long and skinny and they typically line up from the southwest to the northeast due to our prevailing southwest winds. When you take the wind out of the equation our fires will typically go uphill.

The NWS provide many alert services such as Fire Weather Planning Forecasts (FWF), Red Flag Warnings/Fire Weather Watches (RFW), Spot Weather Forecasts (SPF), NFDRS Trend Forecasts, Incident Meteorologists and Digital Services. Red Flag Warnings are when conditions exist where relative humidity, temperature and wind become a factor. Those values, High temperatures, low relative humidity and high winds will put us as firefighters into a position of high alert for rapid fire growth. We track the trends of weather and our statistical firefighter fatalities often times are related back to red flag warnings and that firefighter or those firefighters not heading those warnings, so the warnings are really important to us. Your 10 o'clock news, 5 o'clock news, channel 2 and 5 have actually started putting those red flag warnings out in their forecasts to the public as well. Red flag warnings may also be issued in the fire planning forecast which is produced twice a day and they can also just get it out to the dispatch centers to get in to those in the field when they see a problem.

Q: Scott Alvord inquired about a red flag warning yesterday and/or today?

A: Washington County was in a red flag warning yesterday for high winds and low level of humidity. I had a meeting in St. George this day and traveling over the black ridge from Cedar City I encountered wind gusts of 30 mph difference. A few miles can make all the difference in the world. That is something that we are very conscious of due to the rapid rates of spread and the potential for burn-overs.

PRESENTATION: *(cont.)*

We also have what you call Spot Weather Forecasts. Those are available for wildfire, prescribed fire as well as hazmat.

Q: What does "burn-over" mean?

A: This is when fire over runs a firefighter or equipment. So it is essentially when we cannot get out of the way fast enough.

So we can submit a spot weather forecast which would entail a few things that need to take place, first being the National Weather Service needs information. We often times gather that information in the field. We carry instruments with us that collect wind factors as well as take temperatures and measure humidity in the air itself on site of the fire. We record that data and turn into the National Weather Service and they can create a forecast spot specific. Another way they can record that is at the nearest RAWS station. We use spot weather forecasts all the time especially when we have a fire that is going to extend more than a day.

So it is kind of unusual with me coming from the structure world and lateralled over to the wildland fire world and I could never understand why when the first would show up they would start spinning weather. After 10 years of wildland I finally figured it out. We track trends. (I was recently on at a fire at the Arizona strip and at 2:00pm, which was the witching hour of when the fire would blow up. At that was from those trends of each day taking weather, the observations would like up and the fire would blow up. It was just how Mother Nature wanted it.) Submitting this information gives us a heads up or forecast for the next operational period or next couple of operations periods so that we know what to expect and have firefights in areas where they are safe and don't encounter an event such as a burn over.

We have National Fire Danger Rating System which is more fuels driven but are also forecasts that are available to us to trend to us what our fuel conditions are doing which is always a contributing factor of fire spread. This year our fuels have actually been in pretty good shape due to the moisture we have been getting throughout the summer. We also have Incident Meteorologists and Digital Services which we will talk a little about them later.

Q: Do you have actually someone to go out and estimate the fuel and report it back to you? Is that how you get that kind of information?

A: We actually have someone to go out into the field and recover fuel samples. First they look at how much fuel is available in a certain place, which by fuel means trees and bushes. Then they take those fuel samples and put them in an oven to bake them for a certain amount of time to determine the live fuel moisture is in that vegetation. Obviously if the moisture is really high the fire activity is going to very low. Just the opposite is going to happen if it is low then we are going to experience higher rates of spread, more consumption on the fuel and will affect how the fire burns through it.

So we not only follow the weather forecasts closely, but we are also monitoring our fuels and fuel conditions throughout our dispatch area. The Color County Dispatch area is the Five Southwest Counties and the Arizona strip which is a lot of ground.

PRESENTATION: *(cont.)*

Onto Fire Weather Planning Forecast which is available at …

http://w2.weather.gov/climate/index.php?wfo=slc

At this site under Forecasts on the left hand side you can select Fire Weather which will take you to the zoning page, which the State of Utah is zone specific, and we are listed under zone 495. Selecting this zone it will come up with a full page of the forecasts for our area. One thing to know is that the fire weather forecast typically starts the first of April and goes through the middle of November, which we would call the fire season. The forecast is not available outside that period of time. The Fire Weather Planning Forecast as I mentioned before is issued 2 times a day, sometime between midnight and 7:30 am as well as sometime between noon and 3:30 pm. The Color County Dispatch Center reads those forecasts twice a day, once around 10-10:30 am over the radio and then again in the afternoon between 4-4:30 pm; so all the resources in the field have the ability to hear what that forecast is. The forecast will start out with a headline, such as with shown scenario, "Drying and Becoming Breezy". The forecast will then move on to a discussion which is clear and concise, such as "the air mass will continue to dry throughout the week, expect breezy conditions throughout the south most days during the upcoming work week. Discussion: A weak cool front has brought dryer air to the North today while isolated to scattered convective activity develops across mainly central and southern Utah". I obtained this information off NWS on Saturday and yesterday we had that cold front pass. The concern for us with any time we have a cold front move through the area is a switch in winds.

This is what the NWS try and capture in those forecasts, which they do the forecasts for today, tonight and tomorrow or tonight, tomorrow and tomorrow night. So there are three operational periods that they capture in the forecast. They capture sky weather and indicate it as cloudy, partly cloudy, mostly cloudy or sunny. They capture temperatures of the valley floor and mid slope. Why would it be important to have temperatures mid slope versus valley floor? CONVECTION! Temperature and temperature inversions are very important to us and fire behavior. Of course relative humidity, winds, and lightning activity level (LAL) are also important to us. LAL is extremely important due to the fact that lightning is the number one killer of humans as weather related condition in the state of Utah. In addition to that it helps to preplan or reposition resources in the field as lightning moves through. We are lucky enough to have access to lightning maps which allow us to track the storms and move resources around hoping to be a catcher's mit so if we have an incident we have a quick response time.

The Haines Index is taking fuels and weather conditions and putting it into a numerical valued index that tells us what to expect on the fire line before the fire starts. The higher the Haines Index the higher likeliness that we are going to have explosive fire behavior. This index does not take into factor wind conditions. The Haines values range from 2-6; high values 5/6 indicate dry unstable air and low values 2/3 indicate moist stable air.

A transport wind, a good example of transport winds is what you are seeing outside today. The smoke and haze you are seeing came through with the cold front that passed yesterday from the fires of the Pacific Northwest and Idaho into our region.

PRESENTATION: *(cont.)*

Mixing height is how high the smoke column will rise before it dissipates into atmosphere. This is more so important for people with health issues than for us necessarily on the fire ground; however, that mixing height can affect us on the ground. If we have high winds aloft and those winds drop down to the ground then of course we are going to see an increase in fire behavior. Mixing height though it is not something I am concerned with on a daily basis, I like to keep myself aware of what is happening in the upper atmosphere.

Chance of wetting rain will be at a percentage and it will be anything greater than a 10th of an inch. With a chance of those wetting rains with these forecasts it's not 50% that we will or will not have rain; it's 50% of the area that will have wetting rains. In actuality it is geographical versus how much precipitation we will receive or not receive. Then there is an extended forecast of 3-7 days then an 8-14 day outlook.

Twenty foot winds, slope valley, up slope winds resulting in high ridge top winds which can influence fire growth exponentially.

Q: What is a 20' wind?

A: We measure winds at 20' so we have unobstructed wind values. Essentially, if we were measuring the winds at eye level being the worst case scenario, there would be obstructions all around that are going to affect how the wind reacts. So we measure above the general topography.

Relative Humidity = the amount of water vapor in the air expressed as a percentage of the amount needed for saturation at the same temperature. This changes as you go through different view models throughout the nation, here locally if we are below 10% relative humidity we are considered ready to burn. Anything above 50% large fire growth is unlikely due to the high saturations in the air not supporting our fuels being receptive to rapid fire growth, outside of something like a wind event. Somewhere in the middle of that is pretty marginal.

NOTE: Cigarettes are a big cause of fire so myth has it. In order for a cigarette to start a fire the temperature has to be above 90°, the humidity has to be below 10% and the wind has to be blowing directly on the end of the cigarette. A cigarette burns at about 300° so the likeliness of someone throwing a cigarette out a window of their vehicle and starting a fire is much less likely than you or some people think.

Q: How likely is it that someone can start a fire with a cell phone at a gas station?

A: No comment from Ryan, a little laughing, but indicated that probably more likely than from a cigarette thrown out the window.

Back to LAL's; Lightning Activity Levels. You have levels 1-6.

1. No thunderstorms.
2. Isolated storms, light rain accompanied by a few strikes.
3. Common but typically followed by moderate rain with 6-10 strikes in a 5 minute period.
4. Scattered storms with moderate rain and an increase in strikes of 11-15 in a 5 minute period.
5. Moderate rain of intense thunderstorms with 15 strikes in a 5 minute period.
6. Lightning storms with dry weather conditions.

PRESENTATION: *(cont.)*

Q: How often does an LAL-6 happen?

A: Mother Nature decides that. Some years it seems like we are in a LAL-6 all the time and others like this year we've kind of have hung in the LAL-3 range.

Terrain winds are much more important to us because we here in southwest Utah have that southwest prevailing winds. Cedar Highlands and the face of Cedar Mountain are real concerns to me because our southwest winds, during the day, are going push any fire up into that community and up that mountain face being terrain and wind driven. In the evenings a down canyon wind will come off the face of the mountain, called diurnal winds, which can intensify any fire and push it downhill into where our communities are.

The thermal belt consists of three sections, below freezing in the valley bottom, central warmer area above that that it typically drier and then upper area that is cold. The do get the temperature inversions much like Salt Lake but we don't see it as often down here because we do not have the particila matter to visually see it. However, we get terrible inversions which you can see in December where you will see that temperature or thermal belt is laying right about where Cedar Highlands is. It will be kind of smogged in. For fire we will actually have an area within that thermal belt that will increase in fire behavior. Not so much dealt with in the summer time, but more in the fall.

Fire Weather Watch is just that, an alert to fire management agencies of possible development of red flag warnings usually 24-72 hours in advance of the expected onset. They may be issued within 12 hours for possible dry lightning events only because those storms will ramp up and dissipate quickly.

Another resource for forecasts is the NFDRS Site Forecast which is another center that provides a lot of other information. This helps us determine our Smokey Bear fire ratings. NFDRS stands for National Fire Danger Rating System.

RAWS stations-Remote Automated Weather Stations are used to monitor conditions in remote locations and are accessible through the Salt Lake City Weather page online recording tons of data, some even snow depth. UDOT uses them for road conditions and obviously we use them for fire which is handy for us because we can pull the nearest RAWS station and get a pretty good idea of what is going on in that area.

As previously indicated we also have available to us meteorologists crossed trained in fire who will come out in particularly large incidences to produce weather forecasting's for the specific incident through the duration. These meteorologists work very closely with our fire behavior analysts who are there to determine fuels and fire weather and to determine an output to the incident management team on how or what the best strategy of fighting the fire may be based off of forecasting.

Digital services are also available to us who provide a variety of different things, such as drought indexes, wind predictions, and relative humidity predictions. I recommend going to weather.gov and play around to become familiar with everything covered today. This is a tool we use for long range forecasting. Predictive Services is another place you can go to get outlooks for 7 days, 1 month and season, so we have an idea typically 3 months out of what to expect.

PRESENTATION: *(cont.)*

Taking in snow pack and transferring it into water equivalent so we know how much actual moisture there is, precipitation, climate patterns, temperature anomalies and seasonal drought we put this information into a package to determine the forecast for several months.

If you are interested in more the wildfire weather there are about 5 courses available for anyone to take. The average firefighter has an average of 3 days of fire weather behavior courses before they can go out to the fire lines. So again if any of you are interested please contact me for additional information.

Ryan Riddle
ryanriddle@utah.gov
(435)590-4714

Q: Ryan I discovered when I wanted to do some burning that at certain times of the year I was supposed to contact you and other times Cedar City Fire, could you clarify why during different times of year it is required to contact different agencies?

A: Yes, from June 1st to October 31st is considered a closed fire season in the State of Utah and any outdoor burning you are required to have a written permit from the State Fire Warden. Outside of this time period they are actually working on a county ordinance right now and hoping to have it addressed at the first County Commission meeting in September, which will be a burning ordinance to allow us to burn outside of that June 1st-October 31st with a permit. Traditionally in Iron County from April 15th to May 15th was the only time you could burn pending approval from the local fire department. What we are trying to do is expand that out so that we have a burn window in the spring as well as in the fall. So in the fall you will be able to burn till the November 15th and in the spring you will be able to start either March 1st or April 1st, regardless, it gives you 44 more days a year that you can burn. The reason of why you have to contact the different agencies is because state law requires that Ryan issues the permits from June 1st-October 31st. Outside of that with the new ordinance, the fire department and/or me will be able to issue that permit, pending the air quality clearing index. Either case you always have to have a permit.

Closed Lecture: 1:00

CLOSING REMARKS:

Rob Dotson had closing remarks…..Besides that questions from Steve, what can we take away from this presentation for ourselves or our organizations? Paul Dunsdon speaks out by saying, "I can tell you from a mass care and ESF-6 standpoint that a lot of this is situational awareness, being able to stage and prep for upcoming events, its fantastic material. I'm very excited to see that there is a lot of public information." Rob indicated that the most important thing that was showed to us is that Ryan has so much data beforehand that you know not only what might happen if there is a fire but how to deploy, and he thinks that what we can all take to our organizations is what data do we need to gather first, or always. We should always be data driven so if something happens that we have knowledge beforehand otherwise what are we left with. We are left with reacting which we do most of the time anyway, but in reality because you have the data beforehand you know to a certain extent within a certain limit how to react, and how to react with more efficiency.

Ryan jumping back….I talked about this low, medium and high and how so much data goes into determining these. We extract that data and have set response areas in color country, which are actually pretty small areas, to which we dispatch our resources based off of those Smokey Bear low, medium, high or extreme conditions. As fire manager we get together in the winter time and look at all those response areas as well as all the historical data for each area and say ok, for this specific area under low fire danger we are going to send one engine. In medium we are going to send an additional engine and a fix mini aircraft, which we call an air attack. In high we are going to add another engine and maybe a helicopter and extreme maybe we will add a heavy air tanker. We are not just sending all of our resources because there is smoke going up in the air; we actually use the science behind it so that we are spending tax payers' dollars in a manner that is consistent with scientific data. That way we can spread our resources out #1, we can manage the financial burden to all of us as tax payers #2, and #3 probably the most important is managing the risk to our firefighters.

NO OTHER REMARKS

ANNOUNCEMENTS:

Next meeting September 16th, 2015, same time and place

Motion to Adjourn at 1:30p

Motion to adjourn by: John Higley, Emergency Management

Seconded by: Everyone!