

**AQAC MINUTES**  
**October 4, 2016**

**Members/alternates present:** Bert Chessin, John Ottman, Don Anderson, Ronni Flannery, Dave Atkins, Don Anderson

**Members/alternates absent:** Dave Atkins, Sue Spanke, Beth Berlin, Bill Flanery, Guy Hanson, Kathy Tonnessen, Martin Twer, Garon Smith

**Staff:** Sarah Coefield

**Public:** Rachel Burmeister

1. **Bert Chessin called the meeting to order**
2. **Excused absences recognized** – Dave Atkins, Ronni Flannery, Sue Spanke, Beth Berlin, Bill Flanery, Guy Hanson, Kathy Tonnessen, Martin Twer, Garon Smith
3. **Agenda approved.**
4. **September minutes were approved.**
5. **Public comment on non-agenda items**

Rachel Burmeister introduced herself to the group. She is a graduate student studying toxicology at the University of Montana. Prior to moving to Missoula, she worked as an environmental health specialist in Aspen, Colorado.

**6. Article presentation**

Bert Chessin presented two articles.

The first article, “Hundreds of new dams could mean trouble for our climate” by Warren Cornwall, was published by Science on September 28, 2016. The article highlights the greenhouse gases (specifically methane) released by underwater microbes in reservoirs. According to the article, researchers have concluded that each square meter of reservoir surface exhales 25% more methane into the atmosphere than previously thought.

Bert said we always think of dams as being a clean source of energy, but there are downsides to consider, as well.

Ronni Flannery asked if there’s a way to mitigate methane emissions from reservoirs.

Dave Atkins said it’s an anaerobic process from bacteria in the lake consuming organic materials. It’s a normal process.

Bert said greenhouse gas emissions in prior estimates had not considered reservoir contributions to overall greenhouse gas levels.

Sue Spanke asked if they have a solution. She said it matters what rivers you put a dam on. However, she said, if you need a dam down south, a dam in the arctic (that might have lower reservoir emissions) isn’t going to help you much.

John Ottman said he saw an ad talking about how dams have no CO2 emissions.

Sue said the amount of greenhouse gases produced might still be small compared to other power sources.

Bert pointed out that methane is a powerful greenhouse gas.

The second article, "People today are still dying early from high 1970s air pollution: The effects linger longer than you might think" by Fred Pearce, was published by the New Scientist on February 9, 2016. According to the article, people who inhaled urban smoke and toxic fumes decades ago are still more likely to die of respiratory and heart disease. Someone who was exposed to air pollution in the 1970s (which was considerably worse in the study area than it is today) is just as likely to die from the effects of past pollution as they are from current pollution.

Ronni brought up the air pollution studies conducted in Missoula County that looked at kids' lungs. She said she knew someone who was tested during that study and has wondered if he's still compromised from childhood exposure to pollution.

Sue Spanke said this is interesting, because firefighter smoke exposure studies have said there are no long term effects from exposure.

Don Anderson said there are different responses/results between a child's developing lungs and an adult going into a wildfire. He said a study in California followed a cohort and found decreased lung function in people who grew up in areas with vehicle emission pollution. He said he didn't know how far into adulthood the study looked. He said when you're dealing with roadway vehicle emissions, the intense pollution is very short ranged and there are opportunities for mitigation.

Sue said she's noticed apartment buildings in Missoula going up at busy intersections and they all have balconies.

Don said his recommendation would be to keep doors and windows shut during high commute times.

The group discussed Missoula's air history and how Missoula's air quality in the 1970s compared to the term "highly polluted."

## **7. Marshall Woods Project field trip wrap up**

On September 21<sup>st</sup>, council members Kathy Tonnessen, John Ottman, Don Anderson and Martin Twer attended a field trip led by fellow council member Dave Atkins and the U.S. Forest Service (USFS) to look at Marshall Woods Restoration Project fuel treatments in the Rattlesnake National Recreation Area. The USFS began thinning the forest this year, and there are already hundreds of burn piles in just the unit covered by the field trip.

In summarizing the field trip, Dave Atkins said they saw a "gajillion" hand piles. There are 40-80 piles/acre, and there are 71 acres in the unit the group visited. Dave said that

translates to 20-40 tons of fuel/acre. He said the piles themselves are relatively small and have water repellent paper near their tops to keep the moisture out. This will help keep the cores of the piles dry so the piles will burn hotter and cleaner.

Sue Spanke asked how many acres the project covers. Dave said the project will ultimately have 2,500-3,000 acres burned over time. Currently, there are close to 300 acres that have been thinned this year. He said the project spans the Rattlesnake, Woods Gulch and Marshall Canyon areas. Dave said the project's primary objective is to decrease wildfire severity and intensity.

Dave said there is a lot of material to be burned, and it's important to talk about that burning. He said the burning will go on for a lot of years. And after the pile burning, there will be understory burns. He said there will be burning every year for the next 7-10 years.

Dave said the U.S. Forest Service (USFS) has just started slashing this summer and will test burn some piles this fall to see if they're ready to go. He said a lot of the piles won't be dry enough, so most of the burning won't start until next fall. There will be pile burns in the fall and understory burns the following spring.

Dave said the big issue is having the weather forecast come through for smoke dispersion. He said over a project with several years' duration, a missed forecast is likely to happen.

Dave said he was interested in having people see what the USFS is trying to do to open up the forest in order to change wildfire behavior. He said that for the county and air protection objectives, the questions become what are the alternatives and what could be done to reduce the amount of burning for disposal purposes. He said the county's wildfire protection plan will be updated this year and there is a need for landscape level treatment. He then mentioned this summer's Roaring Lion and Copper King fires. Dave said areas in the Roaring Lion fire that had been thinned demonstrated changed fire behavior versus those areas that were not thinned. He said thinning doesn't stop the fire, but it slows the fire down, protecting homes and making it safer to fight.

Dave said you don't need to treat the whole landscape: 20-40% treatment done in large patches (~200 acres) can change fire behavior and consumption patterns, as well as particulate generation.

Dave said thinking toward the future, what would be the council's advice to the Health Board as far as commenting on future environmental projects?

John Ottman said public comment led to the "no mechanical" decision for the Marshall Woods Restoration Project. He said there is a lot of material in the burn piles that could have been chipped and used for other purposes. It would have reduced future smoke production if it had been removed from the site.

Sue Spanke asked if, in the choice not to have mechanical resources on site, was there a

reason mechanical on-site was considered bad.

Dave said there were a lot of red herrings raised. He said the primary debate was whether the direction for the recreations area allowed for heavy equipment. He said the 80 truckload projection was a concern for some residents.

Dave said he wants to focus on our task of protecting air quality and to look at alternatives and the bigger picture. He said the amount cut is not the same in this no-mechanical option as what would have otherwise been cut, because the no-mechanical option only employs chainsaws and human power. This decreases the number and size of trees cut. With mechanical onsite, more trees would've been cut.

After the group briefly discussed truck numbers, John said that taking advantage of the nearby chip yard would have meant decreased smoke production. He said the irony of the USFS doing the public comment a year ago, is that last spring is when he did a project behind Shadow's Keep and hauled 150 truckloads right through town and had no complaints. He said the truck movement was scheduled to miss traffic.

Bert Chessin said the assumption seems to be that all the debris needs to be burned. He said in the summer of '69 he worked on a saw crew that would thin an area and leave the trees down on the ground. He asked if that's done anymore. He said it may not be practical because of aesthetics, but he wondered about the advantages and disadvantages to leaving trees on the ground if you have to thin an area to reduce fire risk.

Dave said the decision is made through a risk analysis. He said that with smaller trees (about 1 inch diameter), the trees will "melt" (decompose) relatively quickly. The small trees will decompose in a few years.

Bert said the saw crew he was on used bow blades and took down trees that were up to 8 inches in diameter.

Sue Spanke asked if some trees were being left to decompose on the Marshall Woods Project.

Dave said small trees (1-2 inch diameter) were being left in some units. However, it wouldn't be allowed near trails because of aesthetics and because there is a fire hazard for a couple years with that kind of treatment.

John Ottman said the amount of slash per acre is a lot different from what we were used to in the '60s. He said they used to bale slash and unload at a paper mill (such as Smurfitt Stone).

The group continued to discuss ways to decrease smoke from outdoor burning.

Dave brought up air curtain burners. He said they are essentially a container with fans that create controlled, hot, and fast combustion. He said it's an in-woods way of

avoiding pile burning. However, he said, it's also very expensive. You need to have equipment on site for putting slash in the burner and you have to transport the slash to a road for transport to the air curtain burner.

Dave said a Missoula resident recently asked if the burn piles in the Marshall Woods Restoration Project site could be chipped.

John said a lot of people want to see piles chipped and left on the ground. But, he said, once you get a certain amount of chips on the ground, it acts like charcoal when a wildfire comes through and it cooks the ground.

Dave said the depth of chips resulting from the project would be untenable.

Ronni said that even before you get the question of what to do with slash created by thinning, some experts question if thinning impacts wildfires at all.

Dave said that if you just say logging, and ask if logging reduces wildfire impacts, the answer can be yes or no. He said it depends on what you do with the slash. He said that when you thin the forest you do get more air movement. However, in a thick forest, when fire reaches the crowns and the wind gets it, the fire can really take off. He said there's substantial evidence that harvesting and proper fuel treatment can greatly reduce wildfire.

Ronni said it's complex and there are different opinions.

John said it's a learning process. He said we're still learning what needs to be left on the ground for nutrient cycling. He said when it comes to forestry treatments, we're finding we have to come back in and burn every so many years. We're still learning a lot about the forest and fire ecology.

The field trip wrap-up discussion continued into the next agenda item.

#### **8. Discussion – Biomass burning: smoke reduction strategies and health concerns**

Sue Spanke asked if the Council were to officially comment on burning projects, would it be on the validity of cutting more, or if there is another project that comes along, comment on how the slash is disposed of.

Dave said we need to have that discussion because Missoula has significant wildfire smoke. He said that of the things that contribute to wildfire smoke in Missoula (weather, fuel and topography), the only thing we can control is fuel.

Sue said the Council will never have the expertise to say "this is the right way."

Bert said we could be better informed to advise the powers that be.

Ronni pointed out the Council ought to limit any input to air quality impacts.

John said he looks at whether we could reduce the amount of smoke coming off a project. He said you can pull it off.

Sue said one thing we could say is that when smoke is a primary concern, it (burning) is handled very well. However, where smoke is not a concern, you see very different amounts of smoke. She said the first priority of burns should be not smoking out Missoula rather than finishing a project on time.

Bert said we have both short term and long term things to look at. He said the Council's primary responsibility is to the short term (improve air quality and decrease smoke pollution). The long term priorities would be reducing wildfires and exposure to wildfire smoke.

Ronni said she apparently raised some hackles by sharing the American Lung Association's (ALA) stance on biomass burning for electricity via an email chain. She said the ALA has a stance on a whole host of issues. She said there are congressional attempts to mandate that biomass burning for electricity be deemed carbon neutral by the EPA. She said that's what the ALA takes issue with.

Ronni said she's not on the Council as an ALA representative and she doesn't work on biomass. She said the ALA does not take a stand on forestry or methodology. She said they have a strict "stay in your own lane" policy and they do not partner with non-health organizations.

Ronni said the ALA does not support burning biomass for electricity due to health and climate change concerns. She said particulate matter, NOx, PAH, CO and carcinogens can be released by biomass burning, and some biomass power plants also burn construction debris. She said the biomass-burning plants also release greenhouse gases that may or may not be off-set. In addition, she said, the EPA's science advisory board has advised the agency not to label biomass-burning power plants as carbon neutral, as the issue is still under evaluation. She said biomass burning power plants are not really an issue in Montana, as most of the facilities are in the East.

Ronni said the ALA takes the view that there's no evidence that some particulates are safe. She said there are findings on how some particulates harm the body differently, but the idea that some particulates are healthier than others doesn't inform the ALA's decision making.

Ronni said coal-fired power plants have a lower pollutant threshold to be subject to pollution control regulations. She said biomass plants have to have emissions that are two and a half times the emissions from a coal-fired power plant before being subject to the same regulatory requirements on a federal level. She said the biomass plants would fall through the cracks in many states.

Dave said he objected to a number of ALA's sweeping statements in their biomass burning position. He said that in most of the West, biomass burning for electricity would be carbon negative if we were using the slash generated by thinning projects rather than burning it. He said it would also reduce black soot production (compared to outdoor burning), which is a forcing agent for climate change. He said ALA's assumption that biomass burners are burning toxic materials is erroneous – incinerators burn toxic materials.

Ronni said she didn't think the ALA's letter implied that all facilities burn toxic materials – it will vary between states.

Dave said the Council has reviewed articles looking at particulate toxicology. No particulates are good, but some have significantly greater toxicity. He said he objected to the sweeping statements that threw a lot of things together. He said it's important to have discussions about the nuances. He said there is a coal-fired power plant that will be test firing wood soon. He said it would be a dramatic improvement for greenhouse gas emissions to burn wood rather than coal, and it would create a market for slash piles. He said slash piles can be burned in the open or in a controlled facility with good combustion.

Don Anderson said proper siting would be necessary for any biomass burning plant. It's important to keep such a plant away from population centers. He said particulate matter has a life – studies tracked particulate matter from a biomass burning facility in the San Joaquin valley and found it traveled quite a bit. He said you wouldn't want to put a biomass burning plant in Missoula – the particulate matter would all get trapped in the valley.

Dave said the opportunity to convert Colstrip is an opportunity. He said there are ample reasons to not make a blanket statement that biomass burning is bad.

Ronni read the ALA's statement on burning biomass for electricity: "The American Lung Association does not support biomass combustion for electricity production, a category that includes wood, wood products, agricultural residues or forest wastes, and potentially highly toxic feedstocks, such as construction and demolition waste. If biomass is combusted, state-of-the-art pollution controls must be required."

She said if something came across the ALA in Montana, it would have to meet these standards.

Bert said that for him, the issue is carbon neutrality. He said in terms of yes, biomass is carbon neutral, trees are growing and there's a net neutral equation over a period of time. If you burn the trees now, in 30-40 years that carbon will be re-taken up. He asked if that's what we're talking about.

Don said that's the intellectual debate – to balance release with the uptake.

Bert said biomass may have less greenhouse gases than fossil fuels, but we don't want to

get into that right now.

Ronni said that's the rub for people – the need for short-term action can't wait 30-40 years for carbon neutrality.

**9. Staff report**

Sarah Coefield gave the staff report. She has been working on getting oxyfuels up and running for the 2016-17 season. Sarah and Ben both passed smoke school on the first try in September. Sarah has been attending the Technical Advisory Committee meetings for the 2016 Long Range Transportation Plan and keeping the importance of ITS (intelligent transportation systems) in the discussion. ITS helps reduce vehicle emissions by cutting idling time at stop lights. Sarah will be attending the 2<sup>nd</sup> International Smoke Symposium in November. Ben has been working on industry stuff.

**10. Public comment**

Rachel Burmeister requested to be added to the Interested Parties list.

**11. Select AQAC representative for next Air Board meeting update**

Bert Chessin will give the update at the next Air Board meeting.

**12. Announcements, other business**

Sarah Coefield told the group that at the next meeting they will be looking at another Draft Environmental Impact Statement (DEIS) for the proposed Longview coal terminal on the West Coast. The group prepared a letter that the Air Pollution Control Board forwarded as public comment on the Washington State DEIS for the terminal. This is the federal DEIS. The public comment period ends in late November, so it will require another quick turnaround.

**13. Adjourn**