

Recycled Water Committee Meeting

VOC, 600 S Marion Pkwy

June 6, 2016

Facilitator: Lisa Carlson

Members present: Cindy Johnstone, Jay Rust, Steve Geist, Rob Davis, Thad Jacobs, Russell Plakke, Liz (DW intern), Brenley McKenna, Katie Knoll, Sonia John, David Matthews, Sonrisa Lucero, David Matthews, Damian Higham, Mark Cassalia, Deb Binard, Doug Woods, Al Polonsky, Cyndi Karvaski, Raeann Gagne, Liz Drogan

Lisa: Scott will not be at the meeting today. (Introductions were made)

Agenda items are as follows:

- Lunch, Agenda Review, Introductions and Ground Rules
- Mitigation and Data Collection for Summer 2016
- Break
- Outreach and Communication plans
- Next Steps and Action Items
- Adjourn

Ground rules were covered last time, but I thought they should be repeated. The ground rules for this meeting include one person speaking at a time, be concise and share the air to that everyone can participate, please speak up during the meeting and avoid the 'real' conversations that happen during the breaks, be hard on the issues and not the people. I've never seen it helpful to personalize things because it escalates conflict and doesn't help during deliberations. For decision making rules, though we won't be making any large decisions today, future decisions will be based on consensus. The goal is that everyone will understand the reasons for the decisions. The fall back to this, because this is an advisory committee, is that Denver Water and Parks & Rec are going to have to take what was said here on advisement. If we are on the border on everything we will want to work to see if we can reach consensus but if we can't because of the time elements then we will have to work off of the majority votes that are present. The last rule is that misery is optional, if you need to stand up because your back hurts then please so, please use the restroom if it is needed and feel free to let us know if more breaks are needed or the agenda isn't working for you. Please silent your cell phone before we get into the meeting. Feel free to record the meeting if needed or request it from Raeann but the recordings are for the meeting group only. Do these rules still make sense?

(Agreement from the group)

Brenley:

[Sampling plan](#)

[Sampling locations](#)

[Data collection plan](#)

I will be handing out a draft document now we are in the process of finalizing. I will email you all that final copy. There are three types we will be sampling: tree tissue, soil, and water. We currently do not have the cost associated for the soil sampling analysis yet, I'm hoping to get that back today. I'm going off a memo that Bahman has prepared for us (sampling plan that he recommended). For the number of depth associated with each sample for each location there could be 150 samples and we would do that twice so that would be over 300 samples this will be a huge expense both times. So the list we put together in terms of soil samples may need to scale back a little.

Rob: I went out this morning and got samples.

Brenley: That's awesome Rob, thank you.

Cindy: Can I just establish something. I'm assuming that the tree locations have been identified in some sort of way by GPS.

Rob: Yes, all our trees are inventoried so we can identify what trees have been sampled.

Sonia: Will this site (GVR) be on recycled water soon?

Demian: Yes, it's scheduled to go on at some point just don't have an exact date yet.

Brenley: It could be several years out.

Rob: I think it was identified that currently was not. This was kind of last minute.

Sonia: So maybe follow-up sampling can occur 5 years from now.

Brenley: Potentially yes

Jay: Since six tree tissue samples will you be doing six soil samples?

Brenley: In theory yes but it be could scaled back based off the amount it is going to cost us. Again we looking to do 150 samples twice a year and this can impact the budget I allocated for it. We will attempt to get samples at each location I just don't know if we can commit to six at this point. Again this was just our wish list and it may need to be scaled back a little bit.

Jay: This is a good control list.

Sonia: What type of species will be sampled on your wish list, all conifers?

Rob: I did all conifers. This is the way I thought about it, the most data we have is based on conifers. I was a little concerned because this type of tree is not good to sample this time of year. I did Colorado spruce, ponderosa pine because these trees were most sensitive. I also did a mix of douglas pine, douglas fur, scotch pine, white fur. For this park today I sampled two ponderosa pine, two spruce, and two douglas pine. What I would typically do at the recycled water sites like Wash Park at the corner of the park is young spruce, pine, and furs and some would show salt damage. What I like to do is find trees next to each other this one is good and this was bad and sample. I try to get a mix of young trees, medium trees, old trees. I really like doing the same species in one area. Every species will take up salt different and have different tolerances. Right now were up to 87 trees.

Sonia: Including Cheesman Park

Rob: Yes

Steve: I was wondering if the Technical Committee thought about doing texture analysis.

Brenley: Yes we will be doing that. We are going off the memo that Bahman prepared for us with his recommendation on what we should be sampling for and how to sample so we will be following that outline (but we will only do that once as things won't change in that short period of time).

Rob: Right now were about 40 hours in with staff time doing tree sampling (roughly \$3-\$4K)

Sonia: Those dollars are just the sampling cost not your staff time right?

Rob: Yes the lab cost not staff time. \$54 per sample.

David: Was there ever discussion if Harvard Gulch will be switched over?

Brenley: Harvard Gulch is not switching.

Demian: Its city ditch water it will not be going to recycled water it will go from potable to raw.

Sonia: Did you get an update on the steve day tag?

Rob: There is at least one tree that had a tag on it. At the time Steve Traylor thought that was a steve day tag but I don't have that information.

Demian: I don't think we have record just general observations.

Lisa: So the agreement would be to add more sampling at the 6th Ave median to be coordinated by Deb, Rob, and Demian.

Sonia: Just looking at the samples scheduled for a one-time event, I think that is consistent with the other parks. But yet you have the soil samples list for a 2nd and 3rd year why didn't you list that for the trees a 2nd and 3rd year.

Brenley: I didn't list that because Parks & Rec would continue to do it. I didn't want to sign them up for anything they didn't agree to do. The soil sampling I was just going off the recommendation of Dr. Sheikh. First year quarterly, second year bi-annually, third year annually. Maybe we look at trees more long term 3-5 years.

Sonia: So the first year of soil do four times, second year twice compared to what Dr. Chan was doing every 5 years was sampling once a year. Does this seem like over kill in away? I think it's great to have the data but we have budget to think of.

Brenley: Thank you, I can agree with that it's seems a little excessive but Dr. Chan is turf grass scientist not a soil expert like Dr. Sheikh is. We can assess the two quarters of data side by side and see if anything changes. If there were no changes then maybe we only sample annually after that. This is more flexible, like you said you might not need to sample every quarter. The goal is compare June and September data.

Cindy: The question I would have is about if taking tree tissue sample in June, I'm not sure I understand does the things you test in the tree tissue change?

Rob: I like test right before tissue growth or after. Right now I had to do it after but had to be really careful just to get the needles and not the new growth.

Demian: One thing to keep in mind due to budget constraints we don't have to analyze all the samples right away.

David: (City Park Golf Site) So this is direct connect by via purple pipe to pond plus drainage?

Brenley: Yes, drainage on that particular site would be minimal based on water that turns overs pretty quickly. Is that right Demian?

Demian: Yes that's my understanding.

David: Is there any way to ball park even the gallons or reservoir we are talking about?

Demian: I think they have a sense of how big it is.

Doug: 3-5 acres

Lisa: David what is your question.

David: The point would be: what influences does the recycled water have to the storm drainage to the pond.

Doug: Little to no storm it's in the middle of the golf course. We will verify with golf to make sure.

Cindy: Are the ponds lined?

Brenley: They should be that's my understanding.

David: Is it fabric liner or clay?

Demian: I imagine it would be clay.

Doug: We will have to check with golf.

Al: Just waiting to get clarification on the irrigation water your sampling.

Brenley: I think it's a good time to talk about this now. When we met to develop this plan David asked for clarification on are we just sampling the pond itself or are we sampling the water out of the irrigation pump. I talked with the people that will be doing the analysis and we will be sampling all the ponds in the inlands of the pond and also sample the water coming out of the pump in the first round. If there are different results then we will continue to sample the pond if there is not then we will only continue to sample from the pump. We will collect from pump house and use a coupler.

Sonia: What is the depth of the soil samples?

Brenley: It's on Dr. Sheikh's memo I will include that as well it's between 0-60.

Al: Just for clarification before you move on what will I need to be involved with? If you need support keep us in mind.

Mark: When you guys were talking about doing the lake sampling and pump sample that was only to see if there was a difference? Then to only test irrigation.

Brenley: Yes

Mark: I guess my question is the water coming out of the pump house is that what is going into the parks? So I don't think there is a need to sample the pond water.

Brenley: At this point we just wanted the additional data and are they any impacts or differences. We don't have to do that and the lab folks would be happy about that but my thought was that this group wanted the pond sampled at least once.

Mark: I would understand if we were only going to sample the lake. Then in the future do lake sampling. Then you can say is the water going out the irrigation pump the same. I guess what I'm trying to say is that if you sample from the pump house you are getting the end state of the water. I would say just do that.

Al: I agree with Mark is saying. We can bump it up if needed for this purpose rather than once a year.

Brenley: I would be happy to remove this from Denver Water's responsibility. I just want to do it the right way.

Al: I think sampling from the shore on the lakes is good if you don't have any other alternative. If you want to know what's going on in the lake that's not a good way to sample.

Lisa: Al what would be your suggestion be.

Al: I agree with Mark. If you want to know what's in the irrigation water sample that or if you want to know what's in the pond water sample that.

Lisa: Everyone is in agreement to sample the irrigation water. The question is when and who will sample the lake water?

Al: I can speak for Smith and Ferrill Lake since I test both of these. If needed for this purpose we add additional sampling.

Mark: I guess what I'm getting at is if you're doing the lake sample and irrigation sample. There might be a reason to do both to figure out what's flowing into the different lakes but in the end whatever is coming out if being used for irrigation.

Cindy: I think it would be more valuable to do lake sampling more often rather than just once a year

Lisa: So the change in strategy would be to have Al do the lake sampling (needs to get approval first)

Al: Yes I can offer to do this (once I get approval). I can let you know by Wednesday.

Lisa: This would be just for the Summer only. Can you get back to Brenley on this so we can add this to the broader strategy?

David: Just one more comment – On the direct connect to the purple pipe we are not doing a water analysis we are taking that water that left the plant is what is being used for irrigation. Cheesman has a tank where it stores water. If maybe once or twice test that water to be sure that we are getting the same result of what's going in water that left the recycled plant.

Russ: We can. You will limit yourself the data will be a little off because of the timing it left the plant to the location. You will only have one section as the facility does its own sampling. What's the difference you're looking for David?

David: Well it's kind of like we said if we're going to sample the water we might as well sample the irrigation water.

Russ: We're sampling at the pump house, not at the sprinklers it's the same principle.

Cindy: So you're sampling at the pump house at Cheesman?

Russ: No, were talking about at the pump house at the recycled plant.

David: I understand

Russ: There are some perimeters we have to follow. I would personally like to see our dollars going towards the sampling. This is a closed system. But I will support whatever the group wants to go with.

David: I agree but that would only be in the beginning. So the question is what is coming out of the plant?

Russ: Some parks might have month old water other might have a four hour hold on water.

David: It's what's going out into the grass and trees is what we're trying to verify.

Russ: Sure, but I see that as a very difficult model. You're dealing with months of time that might transpire, from where you do your sample. It will be harder for you.

Demian: City ditch permit, could we get data from there and compare it to the plant?

Russ: Yes, but I don't think it will cover everything your looking for. The four hour component it has a quick turn over. So what the plant has is what the city ditch is getting.

Mark: Russ do you think anything would change in the water from the time it leaves the plant from hours to a month later.

Russ: The only thing we seen increase was copper (very low increase), that probably because it's passing through meters.

Cindy: So you have sampled the holding tanks?

Russ: When you talk about holding tanks are you talking about capital hill reservoir? We only have one tank in the system at capital hill across from botanic gardens.

Cindy: Does that water go into Cheesman? Eventually

Russ: That's where we pump to. Our tanks fill out every morning and night and shoot across. That's our main hub that gives water throughout the whole system.

Cindy: So it's a closed system and nothing ever gets into it?

Russ: We get into it once a year to clean the reservoir.

Lisa: So where are we at with this?

David: We are not quite agreeing that is where we are at with it.

Mark: We are disagreeing slightly for sure. David just wants to see if anything changes with month old water.

Lisa: If you talk about one site (the tank) take one sample this summer. Can we do that? (capital hill reservoir).

Russ: We can.

Brenley: Russ is this something you can coordinate?

Russ: Yes, I think that's within my capability.

Brenley: I will get you the list of perimeters.

Brenley: Maybe the City of Denver would be interested in getting the Accure Storm events.

Al: You mean in the lake. I would really like to do that I always wondered about that. Ferrill Lake is a very unique system.

Lisa: Al is this something you can take on (with approval).

Al: Ferrill Lake is really tricky it takes a bit for a flow to discharge into the lake. It would have to be a sufficient amount of rain to fall into there to flush it out from storm run-off. I will add this to my ask list.

Sonia: Storm events rain. What do you think about increasing that amount?

Brenley: I was just going off what was listed on some storm water websites 0.-0.1 so I increased it a little more. But I'm opening to changing it.

Al: I'm thinking more like 0.2

Lisa: Ok we will change it to 0.25.

Sonia: With the rainfall where are you going to get the data? City Park can be different than Wash Park.

Brenley: It's going to be challenging to see how it moves, how fast its going, the age of the water. At this point it's close to impossible.

David: You cannot go off DIA rainfall.

Brenley: Right

Russ: Doesn't City Park have a rain guard?

Brenley: Yes.

Al: Colorado Collaborative (CoCoRahs) is precipitation reporting thing it's awesome. It's a great resource. People all over the metro area report their rainfall here by 7 am. So you can check out every day after 7 am. <http://www.cocorahs.org/>

Brenley: We do have site specific weather monitoring stations as well you said there was one at Wash Park.

Russ: I think City Park too.

Doug: City Park Golf has a really nice system.

Lisa: So at this point what are you thinking about using?

Brenley: I like Al's suggestion on looking at that website.

Al: What I do is pick three reference points and use them as a guide.

Russ: Is that going to give us the rainfall that is happening?

Al: It's within a 24 hour period. If you need something at 6 am you're not going to get it. It's only after 7 am.

Lisa: This is one of the challenges the technical people are going to have.

Sonia: Any consideration in sampling a few deciduous trees later this year. We talked about this before.

Rob: Where are we trying to go with this if we broaden the data on the species? I don't know if this is a benefit or not.

Sonia: Is there a baseline two years down the road?

Rob: The group of species I picked were the most sensitive, but we're trying to focus on this select group of species as our baseline data to track our progress a little bit.

Doug: I think we revisit in November, but right now I think its best we sample the sensitive species. You already got 87 samples done, that's already a lot a huge commitment of time and resources doing this.

Lisa: I will put this on the long term list to revisit this.

Sonia: This is great information if could have only gotten it a little earlier even a day earlier.

Lisa: Well Brenley worked on it all weekend and just got it done last night.

Sonia: With the data you will be collecting over the summer will those results be shared with us before November? Don't throw them at us right before the November meeting is all I'm asking.

Brenley: I have a schedule of when everything will be complete and I will send out to everyone. I have a time set side so you review the draft well before the November so you can digest the information. Sorry I didn't get this to you sooner but just finished last night. I really wanted it to be an open dialog as well.

Lisa: What we wanted from you, this advisory group, is to understand the mitigation plan set for this summer; the technical experts will then analyze the plan and bring us back their data/conclusions in November. We will make sure this group has enough time to review and digest the information, so then you can come prepared for the November meeting.

Mark: Going back to sampling. We have five direct connect sites selected can we narrow that down?

Lisa: What was the thinking of all five sites?

Brenley: I was going off from where Rob was sampling. Then I put it on a map and we have a real nice spread.

Deb: I think there is a real good reason from different locations because they have type soil types.

Brenley: In terms of scaling back, we may scale back the number of samples at each site. Once I seen it on the map I thought it was a great spread. There is no scientific reasons for this but geographically spread out to see the different soil types was the reason. Does that answer your question?

Mark: Absolutely

Demian: We can always decrease over time if needed.

Lisa: Does anyone have any questions that irrelevant to the discussion we were having before lunch?

Thad: Something to think about long term at City Park Golf will the twin basin project have any impact down the road. It's a water conversion for storm water in part of the golf course.

Lisa: I will add this to the long term list. In terms of process check-in the mitigation and data collection for short term strategies for this Summer were articulated. Brenley made some changes mostly on Rob's tree sampling. In addition AI had made some suggestions about DEH being able to possibly collect additional ponds samples but he needs to check-in with people. In terms of this group and timing we won't get together again until November so what we're saying is we agree with the plan and understand the perimeters of both AI's and resource constraints being the end of the fiscal year with data collection if all goes well this is going to be the plan.

Cindy: I think it will be helpful if we can get updated on the samples, or if something can't get done due to budget constraints and let us know you had to modify it.

Lisa: The hope is for the changes Brenley made today she can get the cost together in the next couple days and make some adjustments accordingly she will also hear back from AI on what he can and can't do then that is the document we will put on the website and send out to all of you.

Jay: I think the committee would like some type of periodic update on the progress we are making only on information that is concrete if that can be shared with us instead of waiting until November that would be greatly appreciated.

Katie: I would be willing to communicate with everyone on a monthly basis.

Brenley: Maybe something wasn't communicated correctly but we did mention that we will set times aside to the draft report so you all will have plenty of time within a two week before the November meeting.

Lisa: The draft plan will be send out the committee next week. Katie will do a monthly update on the progress to the committee members. The draft mitigation data collect report what does it say on your timeline say?

Brenley: We hope to have the draft finalized the third week in October. So that should give everyone the 4th week in October and any time before the November meeting is scheduled.

Lisa: The November meeting will be about what did we learn and what are we going to need moving forward. So the only piece we didn't cover in terms of the communications for this Summer what we're doing Denver Parks has the website. Cyndi do you want to give us a brief update.

Cyndi: One of the things that we wanted to do is put up the summary report once it's defined. Right now we're keeping up with all the studies and meeting agendas/minutes on the website. We will only post documents that are finalized.

Sonia: Will DPR be doing a press release?

Cyndi: I do not think we have any plans to do a press release since this is just an advisory committee. If there are recommendations that come from this committee are implemented then we would do a press release stating and referencing this committee's ideas but it's not a press release at this point.

Cindy: At the end of the day here I would like a press release given with some basics about bringing together DPR, DW, and the community working together since January to look at problem solving. I think it is a critical piece to make it a press release because we know that there were some negative press about stuff that has been going on. I think people have the right to know and should know that the City and Denver Water is responding. I want good press going out.

Cyndi: I think we can talk about what the process is and what's going on right on with this committee with social media. I'm more than willing to get stuff to the press but not an actual press release is probably not the best way to go because it's more of an announcement of something we have to share and at that point be able to respond to the questions and that part would be difficult. I don't see anything wrong with advertising on what's going on.

Lisa: Cindy's point was this group has come to a consensus on short term mitigation strategies and everyone was heard so moving forward this would be a good news story.

Cyndi: We can post information on facebook, or next door and talk about what we're doing and refer them to the website.

Sonia: One of the things that is not in the document are what type of species were planted. People will want to know that. It's an important part of the puzzle.

Lisa: So I think Sonia's thing was how do we let them know about that? Do you already have a strategy in place?

Sonia: They know trees have been planted but don't know they are different species.

Lisa: Do you want that on the website, will that help?

Sonia: The website shows how the city is addressing the tree problems so I think it should be put there. Rob what do you think? I don't think you will have to put a list of every species just a brief note we have planted.

Rob: Planting the right type of species is a key part of recycled water. I think we can if people are interested.

Lisa: Is it possible to get Brenley a paragraph to address Sonia's concern?

Rob: Yes, do we want it on the website or in Brenley's report?

Sonia: I think the website so the general public can see it.

Jay: There is has been a lot of interest of what is the recycled water doing to the conifer trees at Cheesman Park.

Rob: I'm going to have a huge amount of tree sample data how do we want to handle that?

Brenley: We have some availability do some analysis on the raw data; we have a couple people that have a strong background that would be excellent to go over the data. Cheesman is the only one we can compare. The other sites we will just have to establish a baseline so not a whole lot needs to be done. Rob you can start sending me the data.

Rob: I was just curious if the group wanted to see pictures and the results of what they were.

Brenley: This will be part of the end deliverable is what I had envisioned in my mind.

Rob: I can put it in a powerpoint with the pictures with the results if that is something people are interested in seeing.

Lisa: Would this be done before the November meeting?

Rob: It would be easier for me to do before the November meeting. Once I get the results from the labs it easier for me to just do right away to have it organized.

Lisa: What's the timing for that?

Rob: Sometime in July, I can send out a powerpoint on the tree tissue samples which will include pictures, location, the type of tree that was sampled and the results. I can also include a map of the parks and you can tell what trees have been sampled.

David: So until November we won't get together again that just seems with all that is going on that we should have something in the middle but you're saying communications will all be electronic until November?

Lisa: Yes, that's the plan. The next meeting will be November 3rd from 9 – 11:30 am location to be determined hopefully here again at VOC.

Meeting adjourned