

APRIL 13, 2012

SWAB MEETING

Attendees:

Richard Basore
John Baker
Chris Bohm
Jeff Bradley
Hoyt Hillman
David Leyh
Gary Oborny
Joe Hickle

Joseph Mayans
Don Henry
Joseph Pajor
Phil Barnes, guest speaker from KSU
Tim Davidson
Jim Hardesty
Jim Weber
Ron Graber

CB: Okay, everyone it's about 3:03. So, thank you for coming out today to the Stormwater Advisory Board meeting here on Friday the 13th. Consider yourselves lucky to be in this wonderful venue, today. I'd like to call the meeting to order. What I'd like to do first is introduce Keisha Scofield, our new secretary who will be at our meetings. Thank you very much and welcome.

HH: Our humble apologies for the complicated words.

CB: Well, as you know we had a change of Administrative Secretaries and then we had a meeting canceled, so it's been a little chaotic, but we're getting back on track here. So, welcome and thank you for coming. The first order of business is to review approval of the minutes from the March 2, 2012 meeting. If you don't have them there are copies at the front table and we can take a moment to have a look or I would entertain a motion to approve. There are some gaps here, so we might want to try to fill those in. The first gap I see is on page 5 of 8. Gary asked Tom if there was test data that blank the sewer flow from this data. Would that have been, um,

Measured?

CB: Well, not measured, but normalized or took into account. What word am I looking for?

GO: Well, we just wondered if they had the corner test out of it were they able to bifurcate the sewage from the stormwater.

CB: Is that next one, maybe, sewer discharge put in there as well or sewer flow. I mean, it sounds like in context it's the flow of the sewer, right?

PP: yeah, sewer plants.

CB: Okay and then the other data here is the power plant data that was included with the presentation. Any other amendments to the minutes? Hearing none I would entertain a motion to approve.

JW: So moved

CB: Any second?

HH: Seconded.

CB: Discussion? No further discussion. All in favor of the motion say "aye".

AYE

CB: Opposed, same sign. Ok, thank you. What I'm going to do next before we go to committee reports. I think we had a meeting scheduled for April the 26th and we had talked about a tour of a facility, but that doesn't appear to be on my calendar. I don't know that we scheduled that beyond this meeting formally. So, if we could take a few minutes and figure out the meeting schedule and I'll

entertain commentary from the board on how often should we meet over the next 6mths or 4mths. Thoughts, is every two weeks too much or about right?

GO: I think that two weeks is a bit much. We probably ought to be looking at every three or four weeks at this point.

CB: Once a month. Are Friday afternoons still good for everyone, pretty much?

JW: Yes.

CB: Then, um, how about the 4th Friday of the month, generally speaking. That would be the 27th, no I'm sorry. May 25th.

That's right before the three-day weekend.

CB: Okay, how about a week before.

Want to make it the third Friday?

CB: Well, yeah, let's make it the third Friday, starting in May. Then what we should do at each meeting is check, because I know vacations, summer and everything is coming up. Let's just bounce it off one another starting on May 18th and make sure that June the 17th or whatever is okay. So, let's plan on the 3rd Friday of each month to meet, if everybody's good with that?

JW: I think that's probably pretty safe because our three-day weekends fit pretty well at the end of the month. Most of the holidays are Wednesday or something. So we shouldn't have any interference.

CB: Okay, well let's shoot for that. The next item up is subcommittee reports. The first committee is the Operation and Maintenance committee. Larry, Jim, Richard's not here. Jim do you have anything?

JW: No progress has been made.

CB: Okay. One thing that I've seen from our end is the need now to start to record. If you record the O&M manuals for these facilities that is now beginning to roll into play. I know Scott's not here. He was going to try to make it, but I don't think he can. That has become an issue, you really want to record that document and we've talked about that or reference to a location that can be easily obtained later.

JW: Scott and I have talked a little bit, but I think the main issue was trying to figure out where to record them. The question I think for the City would be if we did something in the County, if they recorded it just with the County then we've got to track it across the street or maybe record it with both the City and the County if outside City Limits. We need to work that out.

CB: Okay. Good.

JW: It doesn't appear that we need to be worried about recording the rest of these. We just got to find out. I guess on our side of the street we've got a file for every flat that we're having to retain for forever. So, we could probably do something to file it in house in our dept. We just have to make sure that it's consistent and everyone knows where to go.

CB: Alright, great. Our next committee is the liaison committee. Hoyt or...?

HH: Do you have anything, Jeff?

JB: I don't have anything to add to that.

HH: Okay, well. Regarding stormwater, um, I attended some WRAPS meetings and it looks like we're getting good cooperation from regional WRAPS. We're going to get some stormwater projects done

in spite of the fact we may lose funding next year. We've got a little bit of money left and we're going to initiate some projects. Regarding the REAP area program, the County approved that the other day. The City is lined up to approve it Tuesday. So, we'll have some interesting processes going on there and I think that we'll be able to tie this group into it. That's my status on what's going on outside this group.

CB: Gary, anything from you in regard to the liaison committee? Okay, great. The next committee is the Downstream Channel Protection committee. Some of you took a tour and I think we were able to talk about that at the previous meeting. Is that right? Did that tour take place? I was not able to make it.

HH: Yes, we took a tour and primarily looked at Gypsum Creek, although, we looked at a few others and the watershed and determined some area projects, which will be pulled into the WRAPS and REAP program in future days. So, that's it.

CB: Okay, Scott Lindebak was going to conduct some mapping of these more sensitive channels. I don't know how far that's gotten. I know that he's got that on his radar system. But the ordinance is modified to do the five-acre amendment. So, I think that's been of some assistance to people and in review time for City staff. So, that's all I would add at this time on that item. So, with that we're a little bit ahead of schedule, but I promised Phil that he'd have plenty of time today. So, I'd like to introduce Phil Barnes from Kansas State University extension. His presentation today is testing results and economic impact. Phil, the floor is yours, take your time. Do you need extra copies or do you have a Power Point to pull up? Great and I'm going to move the speaker so that we can better record this.

CB: While they're working on that I have a couple of other things. Mr. Alan King has forwarded our letter in response to Tim Austin from Poe & Associates to Mr. Austin. That letter is exactly how you last saw it. So, I'll let you know that and then he wrote a letter to us. I don't know if anybody's received a copy or not. While he's doing that I'll read it. Mr. King writes:

read Mr. King's letter into record. I will make sure everyone gets a copy of this at our next meeting or we will email a copy of this. Then probably we should probably email these out to all the members so that everyone has a copy. Phil, are you ready to go?

PB: I'm ready. The handout I gave out is the slides that I'll present in this presentation. So, you can write notes on there. If you have questions, let me know and I'll give you an email address or phone number that you can get in touch with me. What I'm going to talk about today is a combination of projects we've been doing since 2007. Most of these projects have related back to the Water Department. The Little ark is an area that they are taking water out of the river, treating the water and then putting it in the Equus beds. Part of the dilemma with that process is it has to be cleaned up, and there's a lot of AG chemicals, sediments, nutrients and whatever that are in the water. So, what we propose to do and the original proposal was to USDA to do a paired watershed study. So, what we did is we took one watershed and then a similar watershed. In one watershed we did practices and the other one we did not. In the first problem that we looked at was a pesticide or herbicide called atrazine. You've seen that in the paper over and over again; it's a broadleaf herbicide that farmers use. It's widely used on corn and grain sorghum. We are seeing a decline on corn, now, with the genetic modification of corn to allow roundup application to corn. So, we don't see the early peak from atrazine that we typically did. And we see one from grain sorghum, which is the other crop that commonly uses atrazine. So that was the first project. I'll talk some about that. The next project, the real issues the water department has was not so much with pesticides, but it was with sediments and nutrients. The estimated costs for removing atrazine was roughly \$8 million/yr. But to remove the sediments and nutrients and all the other things that were in the water the cost was roughly \$26 million/yr, depending on how much water they actually injected. So, if they could reduce the sediments and the nutrients that would really help them reduce the cost of treating the water. We went to USDA first for 1st grant. We went to NRCS, which was our NUSDA conservation service for the 2nd grant. We currently have a 3rd grant that we're back out in the same watersheds doing work in looking at different forms of erosion. We've typically, and you may have heard these terms, sheep erosion is a common term describing erosion off of farmers fields. When we actually get out and look

at their fields we find another form of erosion and we call that ephemeral gullies. These are actual gullies that the farmers can farm through and actually drive thru. If it's a gully, he cannot drive his tractor through. So, this is the third grant we just started. I'll talk about this and then talk about issues with the City.

(Technical difficulties with PowerPoint)

PB: Okay the second slide here is just some of the projects that I've worked on over time. I am with Kansas State University, Department of Biological and Agricultural inquiry. I'm actually an Environmental Engineer. Over the years I've worked mainly with AG Coalition or non-profits. So, the projects that you see here have occurred over about 25 years. This is what I've done in my life on canvas. Kind of interesting side note here: most faculty members don't stay at a university their entire career. I do like KSU. We have outstanding students and I really enjoy the state of Kansas. I grew up in Wyoming, but my dad and mom grew up in Columbus and Oswego, Ks. My wife's dad grew up in Salina. So, it was kind of coming back to our roots. In the third slide, what I did to collect this data was look at upstream USGS sites and downstream USGS sites. Then just did a difference between the flows. Every flow is over a period, some of them have nearly a hundred years worth of information. So, I did long term averages and I just took the difference between what is flowing into and out of the city. As you can see that we are somewhere around 200 CFF's on average over the years. We have years that are very dry, very low flows, last year prime example of that. And we have years like 1993 that was relatively high flows. On average, though, you can see the red line there kind of gives you an indication of long-term average flow is. The numbers across the bottom are actually the days of the years and each one of the numbers is actually a month. So, 1-31 would be January and you can go from there. Typically our flows in winter are low. Our flows in the spring are high. They are typically flow events so we get fairly high flow rates, deep flow rates coming through the city. That's when we get our big storms like we'll try to get tonight.

PB: So, you can see it in a bit larger scale here. The scale on the Y-axis or the left hand axis here is the flow rate in cubic feet per second. This is actually a log graph to get all of our data on it. You can see here the data is one, ten, a hundred. So, the number here is on a large scale and that number where the line is somewhere around 300 and some CFF's. So, to kind of give you an idea of whether normal addition from the City of Wichita would be in flow rate.

JW: Are you talking about the big river now?

PB: This is a total inflow versus the total outflow at the bottom. So, I took the two main inflows which are the Ark and the Little Ark and then I took the _____ difference of the two. This is what you get long term. Now, there are some other sidepieces here: little creeks that come in that would add to this, but overall this is a pretty good number to use. The type of data that we collect in each of the sites I have an automated sampler so that I don't have to be out there in the middle of the night when one of these things comes through. We programmed it to collect data over the hydrograph and that's when the storm event starts. It's almost no flow and then it will go up to a peak flow and come back down. We want to collect samples over that and then we make a composite from those samples that will represent that particular storm. Each of the boxes on here, then, are the concentrations for those. If we have a period of time that doesn't have a storm event, during a week's time then we go out and physically take a grab sample from the center of the stream. We try to get it in the center of the deepest part of the stream. The sampler as you let it fall into the water is collecting water through the depth of water in the stream. So, these are the concentrations. The blue lines are the flow and the samplers. We actually have a device that measures the depth of water with the velocity and the depth then we can get a flow rate. You can see most of the time when we get an increase in concentration, and this particular one is sediment concentration. This is at Valley Center. When you get these increases in flow rate you typically see an increase in concentration. The next thing that we do we take daily values. Well, I can't afford to be out there every day and pull a sample and analyze it. So, what we do - we talked to EPA about this and they were okay with it - the lines between the discreet boxes are actually a linear interpolation of the data. So, sometimes it over estimates, sometimes it underestimates, but on the most part it is fairly close.

HH: Obviously total suspended solids are present. That's an important issue because it relates to a lot of nutrients and things like that. What is your opinion on the current ASR project of doing the clean up and then taking all the soil that has been taken out of the river and throwing it back into the river?

PB: You really want my opinion?

HH: Yes.

PB: Well, I have a couple of concerns: First, if you got it out of the river then, keep it out. Now the problem with this is the cost of treating that soil once you get it out. I mean its mud, basically. So, they have to dry it out. A lot of times it's anoxic, so it doesn't have oxygen in it. It's quite icky from the fact that it's in the bottom of the stream. So, they have to treat it. They have to almost compost it and dry it out. Once they do that it's actually *fairly, good* soil. So, the original project they did at Halstead, for the longest time the solids also contained activate carbon which has atrazine in it. They were concerned that it was atrazine rich. Well we went out and took samples out of the sediment, analyzed it. It had already met its half-life. We couldn't find any atrazine in it. So, we asked several people if they wanted to come and get it. One farmer took semis and hauled it off, but there was a pretty good pile of sediment. But this *putting it back* in the river just compounds the issue we have to deal with because not only going with that sediment is the nutrients. I'll talk a little bit about the nutrients. The other concern I have if this is a rapid process then the carbon absorbs the atrazine. They're actually an atrazine source back into the river. We didn't think about that a whole lot. So, it's still absorbed onto the carbon so I think we're *pretty safe* with it being an active ingredient in the water, but who knows. I was surprised we actually did that. I understand why we did it, because there is a cost associated with treating that sediment to get it to a point it can be used. So, that's why they did it, but I didn't like it.

GO: Was there a Canadian company that was interested in taking that material and had some marketability to it, or?

PB: I think there were probably a number of people and the problem is that they want the product after it's dried and ready to put back on the ground. That costs money to do that. It's not half the cost, but nearly half the cost of taking the sediment out of the water is in treating it once you get it out. So, these millions of dollars that we talk about, half of that money was for treating the sediment once you got it out. I can understand why they are shoving it back into the river. The problem is that downstream from there we have to deal with it. KDHE is going to come along and say, okay we've got all this sediment and everything and really is it coming from the city? It's not, but in a sense it's coming from the city. So, I was a little disappointed when they did that. I understand why they did it, but I wish they wouldn't have.

GO: Thank you.

PB: Concentrations and the flow, if we multiply those two numbers together and by a factor, we actually get the Daily loading value in pounds or tons. Go ahead and show that graph for sediments. I need to point out 2007 what was an extreme year. We have extremes and we have years that are not as extreme. But in this particular year you can see out here in and if you go across here again look at this...this is January, February, March, April, May we start getting some pretty high take offs. Then into June if you remember 2007 that's when we had these big storms come through here. They just lined up and we had storm after storm in this area. We had some fields out here that had three to four inches that flow in and out. Well, these fields some of them had _____ some of them didn't that had their conservation packages in place. The storm events were so extreme it actually wore some of these structures out. This is an extreme year but I wanted to point out the tonnage that we got for that particular year. That's just coming out of the Little Ark. We've got similar months coming out of the Ark, so there were a lot of tons of sediments and nutrients that came through.

In a standardized year would you maybe guesstimate Half of this?

PB: It's probably like last year if you remember didn't have any. The Little Ark has almost no flow. So, this is the big year and last year was the worst year. I would say on average half of that.

CB: How does this correlate to the maximum load that the channel at that velocity could handle?

PB: What happens is if you look back at these, when we get these maximum concentrations, it's also when we get the maximum flow rates. So, we're peaking.

CB: The sediment loads...the body of water at that point couldn't accept any more sediment, correct?

PB: If you go down there and pull a jar up and hold it up like that it would fill up about halfway with sediment. So, there is a lot of material moving in these events.

CB: It probably couldn't hold anymore at that point.

PB: Uh, no. One of the things that we have become aware of upstream and on through Wichita as we channelize it actually accelerates the water and that causes the velocity to go up and it can carry more material. So, what it does to get that material it will cut the bank or cut the bottom out. We have to be careful with that.

HH: What's the relationship on the porosity of the heavy-laden soil on the as it banks as the percent solids goes out?

PB: Typically as the load in the stream goes up then it has less ability to cut into the banks. So, it will reach a point and this is where we get in trouble in our farm, we're out there trying to put in conservation practices to keep the soil in place, but we want to get the water off the field as quickly as we can. So, we're putting clean water into the creek. If it doesn't have a sediment load it's going to get it out of creek. On these the sediment load was already in the water. It had come off the fields. Most of the time the velocity and the ability of the stream to turn more sediment, it couldn't carry anymore. Now, one of the problems with our streams here is they have _____ so they cut down some. We've built levies along the outside of them, so it can't flood out. What it did before we did all of this work, it would come up to a level and it would actually flood out into the flood plain and it would spread that sediment out in that flood plain. Our streams can no longer do that. So, what we carry down the stream it becomes lost in the stream. It's contained typically in the channel. If it's clean water coming down at that velocity, it will cut the channel. We really have to be careful when we channelize or scrape or build bridges or typically a bridge will cause the stream to be straightened. We see cutting along the grid. The Little Ark and the Ark River are probably not the worst streams. I mean we have streams like the black vermilion up by Tuttle Creek that the whole channel system there has been penalized. What they did there, they came along and put in watershed structures or dams, so the water runs off the field into the pond behind the dam; dumps the sediment out and then clean water goes on down the straight channel and it's heavy. And I told the people, I said if you don't quit this you're going to have a Grand Canyon. Well that's what they got. It's already incised to the point where it can't go any deeper & now it's starting to widen out. The banks there at one time when they first had the creek there were probably three to four foot high and now they're 20 – 25'. So, now the farmers are saying, hey, they're loading my field. Three or four rows of corn are going down the creek every year, but it's because we're straightened the creek. If we look at the phosphorus, same thing for Valley Center in 2007, we had 446 tons of phosphorus that came through. That's a lot of phosphorus. Why phosphorus is important, we need two main ingredients, not so much in the river, but when it gets into the lakes in Oklahoma that we're going to have to deal with. When you have nitrogen and phosphorus in those lakes and sunlight then you grow algae. The problem that we had last year is it rained for a while and then it shut off. The lakes become stagnate and it caused the layer about the bottom sediments in the lake to become anoxic and it just let all the phosphorus go up in the water column. So, a typical ratio that we have in our lakes is 10:1 nitrogen to phosphorus. Some of these lakes were five or four to one. When you get that then you get what we call blue-green algae or cyanobacteria. Oklahoma had it all over, it's nasty stuff. We had it all over. So, we're trying to figure out if it's the nutrients that we wash in every year or is it the bottom sediments or is it a combination of things? Or how can we treat the light to keep it where that ratio is 10:1 or greater. If you look at the fields that are coming in on the Little Ark there was a lot of phosphorus. The other

thing I need to point out. There are various forms of phosphorus, but one of the most important forms that we deal with is what's attached to the sediment. The majority of phosphorus is actually attached to the sediment. So, if we're carrying a lot of sediment there's typically a lot of phosphorus going with it. Occasionally, the turbulence in the stream will turn this over and, if conditions are right, will desorb off of the sediment. Once it does that it is active for plant growth (like moss and water wheat. Nitrogen in our field settings, typically our plants pick up a lot of nitrogen. They don't take up a lot of phosphorus. So, were still putting on a lot of phosphorus fertilizer. Another interesting side note: We train in our university people to sell fertilizer for penalty inspections. I trained people in my dept to build tillage tools. I'm promoting no till and reduced phosphorus and there are these people out trying to make a living selling these products. So, there's a little bit of a conflict here. But a majority of our nutrients are coming from erosion off our fields.

HH: You mentioned plants do a good job of picking up nitrogen. We saw an article here recently that indicated that trees do a particularly good job of picking up phosphorus, and so a lot of your tree lined streams and stuff like that are creating sediment when the leaves fall in. We have Homeowners in the area literally raking leaves into the streambed. What we've done then is to increase the phosphorus levels.

PB: True, they do and really there are a couple of issues there. First, with the trees: they are very efficient at taking nutrients. They use a lot of nutrients and a lot of water. They are what they call phreatophytes. So, they want the water that's in the river, but also their roots are very important in stabilizing the banks. It's important that we have some trees there. A lot of the places farmers tend to cut the trees off and I hate to see that happen because we do need that stabilization. But two things with the trees: Leaves are one, in the fall when the leaves drop off they do fall in the stream. That does a couple of things: it brings the nutrients back in water and as they degrade it actually takes the oxygen out of the water so we get a double claim – a lot of nutrients and a low D.O. in water. So, a lot of the regions here that we have trouble with low D.O. it's related to actually the leaves falling into creek, high temperatures and other things that come into play. Another thing that's very important, I want to mention our people like to put a lot of fertilizer on their lawn. They like a nice green lawn. They might mow that thing once or twice a week. What you need for sure is someplace for grass clippings to go, because they are very nutrient rich. If they take those out and dump them in the creek, guess what? You get the nutrients right down the creek. One of the things we've tried in a lot of areas is to do an educational program to talk to landowners. We've talked to the cities. There are a number of cities that have free access for people that mow their lawns to take clippings out to the dump. They areas that they compost grass clippings and you can take it back to use for fertilizer. There are ways we can deal with it, but if they're dumping it in the creek, which people do or along the road or the row ditch it's a good place for the water to carry it along the creek.

GO: Tom Stiles was here and gave a talk in regard to nitrogen. What I've understood before for quite a long time coming down from KDHE was that we need to do something with it. Then, all of a sudden, I took from his comments that nitrogen is off the table. Was I hearing that correct or what's your observation of that?

PB: I think the issue is the nitrogen levels that we're seeing in our streams were about 3x what phosphorus is.

GO: So, it's less of a concern.

PB: Well, it's still a concern. We need to do the things that I'm going to talk about. We need to reduce the amount of runoff and contaminants coming off our fields and our yards getting into the creek. But our nitrogen is so much higher than the phosphorus that it's going to be something that's hard to deal with. I've argued and KDHE has heard this several times: I would like to see standards set for nutrients in our streams and lakes. I have received calls from various people at KDHE, the Conservation Commission and saying shut up. We were under lawsuit for a while to set this standard. That's what happened on atrazine. Once we had the lawsuit and they sued us to set a new standard then that allows us to get out and work with landowners. Most of our waters now meet our drinking water standards for atrazine. So, now saying that about nutrients, we are so far away from where EPA wants us for a standard right now, it's scary. I mean it's going to take a number of years. We are

starting to see a Change in the right direction. We are seeing a reduction of nutrients in our stream, but as our climate changes and we have years like 2007. We can't control what is coming off of field. There was so much rain and such intense rainfalls that it's very difficult to control those type of losses.

DL: What I understand is most of all of this is really- field and agricultural based, little of it is city based. And most of our things we're trying to do are directly in city. I mean, we're trying to do point source in the City and that's not really where this is coming from.

PB: I think and I will show some information here, but the majority of our pollution, currently, is non-point. The City of Wichita does have some issues with our sewage treatment plants and the phosphorus being released.

DL: Sure.

PB: But the majority of the contaminants coming into the city are non-point whether it's pastures or farmland or whatever upstream or the streams themselves. So, what I'm trying to sell is a program where we actually get out and try to work with farmers and get those numbers down before they get to the City. Then if the City is contributing then let's deal with the City. What's coming off the city right now we can't even see. I mean the pollution is so bad from upstream, you can't see anything coming off the city. You can put samplers out on the parking lot or wherever, I've heard a fellow talk about it, and you can measure things, but if you relate that back to these numbers that I'm showing here; they're a part of one percent.

GO: So, really, any dollar spent is almost a wasted dollar in the city versus doing a program...

PB: I think, and this is going to take a number of years, but the best way to get these numbers down if the EPA really wants low numbers and Oklahoma wants low numbers; we're going to have to get out and deal with the farmers. We know that. The City is part of the issue with their sewage treatment plants.

GO: With a point source like that, that's a concentrated point source. That's a single entity or a couple of entities we can kind of work with as far as that. But beyond that it's really an uphill fight.

PB: This has been the argument from day one. I have dealt with Kansas City, Topeka, with all sorts of cities and they've said, "why are they pushing the button on us?" when the problem, especially with something like atrazine, "we don't use atrazine in the city. Why are we having to take it out of the water?" There are reasons why they are taking it out of the water, but we have a drinking water standard of three parts per billion or micrograms, a very small number. You can't even imagine how small that is. I mean, these numbers here, we're talking ppm. I mean, they're big numbers. There is a wide range of things that we're trying to do. Let's talk about atrazine, our drinking water standard and this is kind of exciting. This was the first year of our study at Valley Center again on the outflow of the low Ark. If you look at the average, it has to be at or below or at 3ppm. You can see we're 1.28. So, we hadn't done a whole lot of work out in the watershed yet, but we were already starting to see some improvement in the water quality related to atrazine. I honestly believe with efforts out in the watershed we can actually bring the sediment and nutrient levels down as well. A lot of people have said you can't fix that. I don't believe that. I'm frustrated with the Conservation Commission. I do sit on that commission. Their feeling right now is that they have all the conservation practices in place that they need. I don't agree with that. We have farms that don't have any practices whatsoever, but atrazine is a real success. Ron Graber is here. He's your watershed specialist. He was instrumental in getting with the farmers out here and setting us up with watersheds. One of the things is you have to know somebody that knows the farmers. I can't just walk out here on some farmer's field and say I want to do this. He's going to tell me where to go. Ron is very important to our program and he knows the farmers here. He knows their practices. He's kind of the one that opens the door and lets us come out and do these things.

?Are you seeing a lot of those problems relating to over application or are you seeing more how we're handling things?

PB: Most of what is happening here, and this is kind of a map that will show that is we have fields that have not put the conservation practices on it to stop erosion.

?So, it's more of a conservation issue not an over application issue of all these matters. So, the application levels that farmers produce are an appropriate amount within normalized ban; it's just a matter of how we handle the runoffs.

PB: That's right. With our soil-testing lab at Kansas State, Ron will send some in. The county agent sends some in. The farmers can send them in. recommendations come back to that farmer. We also have consulting groups out here that work with the farmers; AG consultants that look at the soil fertility. One of the things we do look at; you have to look at the economics that the farmers are facing. When they buy fertilizer, if they buy phosphorus in dry form and put it on the surface it's a whole lot cheaper than buying the liquid form and knifing it in. Well, what I want them to do knife it in. Get it down in the ground so when that top washes off it does not wash off with the soil. But if they've spread that dry fertilizer on the surface, not only will it move with the soil, but it washes the fertilizer right off the field. So, this is something that we've tried to work with the farmers. I think they understand it, but the economics really drives what they are able to do. Some farmers are in better financial shape. They have these big, fancy wide planters that you see driving up and down the road. They have big tanks on there that can knife in fertilizer and do all sorts of things. They are our big farmers. Then we have the farmers that don't have that equipment and they dry spread and it washes right off.

GO: If there was a tax or something...I hate taxes...but if there was some kind of usage or taxes or volumation on that application it may change.

PB: I think what we'd probably end up doing is like with the Water Department; they don't want to have to take this out of the water. So, they are willing to pay for equipment or for practices out in the watershed and they actually get clean water. so, it reduces the cost of treatment. Now, with us having to deal with what's going into Oklahoma, your program may want to also put some money into that to pay for some practices. That's kind of what I'm promoting.

RON GRABER: If I could just add real quickly an additional comment on the dry spreading. There are ways to manage that where it doesn't leave the field.

PB: Sure.

RG: One such way is one of the things that we've talked to you guys about with atrazine is a light incorporation. So, we spread that fertilizer on the surface. Then we come back with the tillage equipment, do a light incorporation to the soil. Then it's much less apt to leave the field when we do get that gully washer.

OVERLAPPING SPEAKERS

RG: It's not an either or. Fertilizer is terribly, terribly expensive. I don't know any farmers that are over applying. Fertilizer follows petroleum. You know what's happening at the gas pump. Every time you see gas go up, fertilizer goes up, too. It's just a very direct relationship. We're talking about these dry materials at \$600/ton. That may be material that's 30 to 40% nitrogen, but we're paying close to \$600/ton for that. Then you put it on the ground and it washes away.

DL: So, really all the data here leads to a regional approach, the direction we should consider highly because that's what's really going to address these issues. If we focus on some of these particular issues that are city based there isn't really an application for it.

CB: Let's make a note of that, because that's important.

PB: I'd like to show some more slides that will show that. This is our Little Ark watershed. This is a project that we put together and it doesn't show up too well. These little lines off to the side here are actually areas that have a high potential for erosion. We can go out into these watersheds and go to

these locations. We have a computer with a GPS unit in it. Put the antenna on the roof, right down the road. We look in here where the field is and then drive out to the field. We get Permission to get on the field, and then we go out and look and see have they put on practices or do we have big gullies out in the field. We've found both. We've found farmers that do an excellent job. We've found farmers that don't do anything. There's a wide range of things. The ones that we're trying to deal with, typically in about 10 to 15% of our farmers in the watershed are the ones that we have to deal with. Typically those farmers don't like the government. They may be renting the land. If they're renting the land, they call the landowner and say I need to spend so much money to fix these gullies and whatever. I need to put in terraces. Next year they may not be farming the land. So, they a lot of times abuse the land. I think they abuse the land. People disagree with me on that, but when you see gullies out in the field this they are mismanaging their fields.

GO: If they're mismanaging the land, then the actual landowner is the one that's actually being harmed.

PB: I think in a general sense these people may be old or retired. They may be in a rest home someplace. The kids really don't know what the heck's going on. If they get some income off the land then they're happy. They could, if they farmed it right, they could get a whole lot more income, but there are a lot of issues with that. We've tried to address that. I physically went to an old fellow that had some land out here was in a rest home. We went out to talk to him and he said, "You know, I raised wheat on that land for 50 years and that's what I want my tenant to do. As long as he's doing that, I'm happy." Well, wheat requires tillage and a lot of tillage causes a lot of erosion. Talking to somebody like that it's very difficult for them to understand the issues we're talking about.

RB: You're also got a lot of absentee landowners and they may be urban dwellers in Wichita or California, Chicago. Also, generational differences if people are three times removed from when they're grandparents farmed. I mean, nobody's parents farm anymore. You know, they move to town and it's not the same. Those people in Wichita if they're taking care of their yard, they don't have a clue what's going on at the farm in McPherson County that they inherited.

GO: They have no knowledge of farm practices, but they do see a check.

PB: That and again they don't want to spend extra money. This is an income cash cow or...it makes it difficult to educate these folks to think about the long-term picture.

PB: One of our main programs is trying to get out to these people. Sometimes we know who they are. Sometimes it's very difficult to find out who the landowner is. If you go out and talk to these guys that are farming the land, the tenant, and he is very cautious about giving you any information about who owns the land.

GO: He's living on it. You're going to affect his income and his livelihood. I understand.

PB: Yeah. Okay, this is our atrazine project started in 2006. We've actually got another year's data in 2011. But, you can see the reduction over the years between the paired watershed, with and without the treatments. I think eventually what we've got to do is go into these watersheds. I don't know, Ron, whether the EPA or KDHE has talked about this, but eventually we are one of the few watersheds in the country that have a special TMDL for atrazine. It's what, 4B option?

RG: 4B alternative. We're actually one step short of establishing a TMDL. It was the 1st agricultural _____ in the nation to have that designation. What it is, is that the EPA recognized that there was a group of local producer systems in place have management plans to address the atrazine issue and were already engaged in that process. So, they gave three of the seven watersheds and the Little Ark this 4B alternative, which also puts them under closer microscopes in terms of us being able to demonstrate that we can manage atrazine in a fashion that can get those streams delisted. It's unique in that sense.

PB: And I think we are headed to that point where it will be delisted. So, it will be another issue that we're had with the Little Ark that we can check off and say this is not a problem any longer. Now, the

sediment/nutrients is a different issue. We don't have standards, so when we go and try and deal with this we have to deal with it talking to the farmer that is actually losing topsoil, organic matter and nutrients that would raise a better crop. We did propose a project on Black Kettle Creek. It's one of the sub-watersheds, which has one of the highest sediment losses of any watershed we monitored. We modeled the watershed. We have models that will predict the amount of erosion and nutrient losses. We selected the top 10% of that group of farmers, the 10% worst. We looked at their fields. We actually looked at every field in the watershed, but we looked closely at the top 10%. Some of them had already done practices, so we moved it down a little further on the list. What we ended up doing is looking at what they're erosion rate was. Then, paying them so much a ton for practices they would install to reduce it. One of the interesting things on this watershed and on a number of watersheds we have in Kansas, we have ephemeral streams. Ephemeral streams flow only when we get a big rain event. Typically, the farmers farm right through these types of streams. So, if they are doing that they are pulling loose soil off their field into the creek. Then when you have one of these big events off the field it goes. In this one we had three or four farmers with that condition. I went out and talked to them. We got them to farm on contour so they didn't farm through the creek any longer. We put in buffers. At least one of these fellows is no tilling now. So, he has a lot of residue there to protect and a buffer along the ephemeral creek. He is no longer farming through the creek and we saw an almost 50% reduction in sediment and nutrients out of that watershed.

CB: Just treating the top 10% of the abusers.

PB: Yeah, 10%.

RG: Let me clarify, not 10% of the abusers - of the fields, because in some instances, some of these guys had other fields where they had done all kinds of conservational practices. It just happened it might have been a field that hadn't been farmed in a couple of years or something.

PB: A lot of them were rental fields and they are not going to spend a whole lot of money. When you go and look at the equipment, I would like to see all of our farmers go to "no till", but the equipment to make that conversion is very expensive. What we saw our in the watershed is actually, there were one or two farmers who bought equipment. Then they actually planted for the farmers that didn't want to spend the money to buy the equipment. So, they actually go a payment for doing no till, but someone else did the planting in the spring and everything.

JP: That's the second time the issue of absentee landowners has come up. Do we have a sense for this Little Ark watershed what percentage of the AG acreage is owner occupied vs. rental?

RG: No, it's a guess. The reason is the FSA (Farm Service Agency) office has that information, but you can't get it from them. They're a federal government organization and it's a privacy thing.

JP: If it's 100%, 75%, 50%, 25%, or zero, do you know what you would pick on an educated guess?

PB: I'm going to say looking at our farmers today, most of them are getting up to be my age or closer to retirement and so most of them probably within the next five years will hopefully find someone else to farm their land. We do have a number of young farmers that are coming into this watershed. They really have to "no till" to be able to farm the number of acres, because what's our farm size out here? 800 – 1000 acres, something like that, these guys are farming 5000 – 8000 acres. To cover that the only way they can cover that is no till.

CB: How much does it cost to do that?

PB: To do this reduction?

CB: Yes.

RG: \$280,000.

CB: That's not much.

GO: No, that's incredible impact for a low cost.

CB: We need to look at that in the context of what it's costing individual developments here in Wichita to spend the money on tiny little areas to do erosion control, which would be miniscule in quantity versus your \$280,000.

RG: Let me back up. \$280,000 is what is what went to farmers in incentives. We had a little money in the modeling and identifying where this top 10% of the fields contributed and that sort of thing.

CB: Sure.

RG: But in terms of incentive money that went to the farmers, \$280,000.

GO: Ok, but...

TOO MANY PEOPLE TALKING AT ONCE

HH: We've got Wichita and we've got Cheney which is kind of a sand based collection process. We've got El Dorado Lake, which is a clay-based process. And we're got Lake Lenexa in Kansas City, that's beautifully, wonderfully clean because they've got six or seven retention ponds upstream. What can we learn from those comparisons in how to deal with the sand based and clay based groups and what are we doing right or wrong here locally? How can that help us understand this whole process?

PB: I think in the work that we're doing in the little ark that we need to go a lot further than what we're doing now. We've done one sub-watershed, and we need to expand that out to the entire watershed. Comparing that to Cheney the City of Wichita is spending a lot of money in Cheney. We just completed a study there as well looking at did they place their treatments in the right place. That's kind of what we were doing with this study. What we've found out: some of them were placed right, some weren't. If you put your treatment ten miles away from the creek it takes a while from the sediment and stuff from that field to get to the creek. What you want to deal with are fields fairly close to the creek. That's the lesson that we learned there. I think the City is still dealing with that, trying to figure out, how can we get to those fields? In their project the farmer has to come into the office and talk to them. With this one, Ron and we had a couple other fellows out in the watershed that went directly to the farmer and talked to them, because we already knew that they had not come in to the NRCS office. When we talked to them we had a dinner meeting. These guys don't trust the government. That's something we have to deal with.

RG: The other thing to keep in mind is everything before even conservation, terraces, waterways, all those practices came into being, the federal government had been very careful and very strict about equal opportunity, non-discrimination, that sort of thing. So, whoever walked in the door was first come- first serve and it didn't matter where your farm was or whether it was next to the creek or ten miles from it, like Phil said. So, this is a paradigm shift to see change come for FSA and soil conservation and those folks to start looking at this and saying, "no, we need to target out here" because target can be a word that has lots of implications. You really can't go talk to Joe Smith farmer just because he lives next to a river. He's not a bad guy just because he lives next to a river, so you're got to be real careful how you approach this and market it and get it out into the community. So, that's been an issue, as well, for a long time.

CB: I'll give you the 30-minute warning. I want to make sure we have time for questions.

PB: This is actually my last slide. I think this is a question you're been asking, several of you. I want to try and address the issue of SCALE. We are dealing each year in Wichita with about 700--1000 acres new development. If we look at what part of the watershed that is, its .004%. I mean, it's a very small percentage. If you take area out of that landscape and put it in practices, whatever they are and you get carried away with it, you're not going to make any difference at all. I mean your .004% of what the problem is here. The City as a total is .34%, so what I'm suggesting here is we have to look at what we're doing in the City. We can't just go out willy-nilly and tear up the ground and not put in some sort

of protection for erosion. I have seen that. We worked with areas in Lawrence where they just went out and ripped up the hills and started building houses and didn't put anything in. It plugged up the road ditch. We had a big storm and rocks and everything came off of this landscape. It went across the road and the people there were outraged, but we didn't have any erosion control. So, we did a demonstration. We put in erosion fences and stuff like that and these things are relatively cheap. The other thing is once you get your development developed there are simple things that you can do in that landscape, like street cleaning, talking to the landowners that are going to fertilize their lawn. If we have a "ChemLawn" or whoever, that's treating their lawn, we have best management practices to treat that lawn where it's not going to run off and get into the storm sewer. There are a lot of things that we can do relatively cheap and not to lose a whole lot of land putting in Bioswales. I have done work both in Topeka, Kansas City, and Lawrence with these practices that are described in your stormwater ordinance. They are functional, but I tell you it's a beautification. You're not really changing this picture right here.

CB: Okay, in your dealings in this area have you see a Kansas City or Lawrence or Topeka approach the EPA or the State of Kansas approach the EPA and say, "look, we have an alternate solution to doing our in town program and that is moving outside of town to our contributing watersheds and implementing a program that systematically does these things in an ongoing aggressive program to assist in that fashion as the City's stormwater quality program." Have you seen that?

PB: I have and it's dealt more with the drinking water side of things. Both in Kansas City and Lawrence, the watershed, like Clinton Reservoir for Lawrence, had major problems with sediments and nutrients and blue-green algae and the City takes a major portion of their water out of Clinton for drinking water. So, their treatment costs were very high. They were willing to put dollars, kind of like your Water Dept. here at Wichita is willing to put money back in the watershed. I think ultimately, your program is take some of these dollars that you would spend on these practices and put it back in the watershed and I think you're going to see a vast improvement over what you would do in town. Now, that's not to say that you don't need to clean this up, but let's not get carried away and take a big chunk of your plan. This has happened in Kansas City. We have major areas that are parks now. That's okay, but they put in Bioswales and ponds and everything. What happened? It's happening right out here. When you walk in, what do you see walking along your water out here? Geese! We're sampling the ponds and stuff over there and they are nutrient rich. They said we put all these BMP's in. We can't understand what the heck's going on. Then you look out there and there's fifteen geese out there just crapping to beat the band all over the place.

TD: What was the large affect for the size of the Black Kettle creek?

PB: Its 20,000 acres. So, we're looking here, you're developing each year about 1000 at most. The treated acres out there, we didn't treat that many acres.

RG: We treated 5,000 acres.

CB: Is the affluent from the sewer department out of that? Has that been bifurcated from that number?

PB: This is just acres.

CB: Yes, so the sewage output is taken out of there.

PB: If you look in...

CB: They can compute how much that is off of each acre. It's about 850 tons.

PB: If you looked at Tom Stiles presentation, he showed data from Derby. If you notice they had jumped way up. Wichita's site also jumped up a little bit. If you take the total load coming in from the Ark and Little Ark and then compare it to Derby the difference is what City contributes with the flow. When it turns out a major portion of that is coming out of your sewage treatment plants. But the phosphorus loading that Tom's concerned about, I mean, he openly said that he was concerned

about needing to work with the sewage treatment plant. I think the nutrient loading coming off your landscape here is some nutrients. I'm not going to disagree. If you really want to know what's happening in your City you put a sampler on the top end and the bottom end and you take samples. That's what we've been doing.

GO: Let's say- how much money are we talking about if you had farmers cooperate with the different programs out there - If you go to them, to help and assist them and they are willing? Let's just say we get rid of the barriers. If you had a 25% reduction in all these numbers over a ten-year period. What kind of money are you talking about a year? I mean your wildest guess.

PB: We treated a watershed that was less than 20,000 acres and it was I think 300,000. So, take the total area there and just do a ratio of that. I mean, we're going to have to do that same sort of treatment in each one of these sub-watersheds.

GO: Well, what would your guess be to get a 25% reduction over 10 years?

PB: I can give an example. I'm not sure here. We'd have to look closer because the Ark is a contributor here.

GO: Sure.

PB: But, like New York, their water system in New York City actually comes out of the mountains. Their farmland, they pay the farmers to do practices there. They spend several million dollars a year paying the farmers to do these practices so the water that comes into the City is clean. They are happy with it and it's a cheap way of treating the water.

GO: So, \$1 mil/yr will make a great impact? \$3 million/year could we clean up our water in this entire regional area?

RG: It would go a long ways. It's a cheaper way to do business.

CB: It would be a marked difference.

GO: We're talking about \$25 or \$30,000 in some instances on a site, maybe.

CB: That we spend in Wichita.

GO: So, if we plan on doing ten sites at \$25,000 that is a quarter of a million dollars right there for ten developments.

CB: That's a lot of money.

DL: Keep in mind one thing and Ron, correct me if I'm wrong, but in the atrazine program out there, a fair amount of that was information, education, and management style. It was REAP application. It was crop rotation, so you didn't need it this year because you were growing something different. It was the incorporation. It was not owners who were talking about terraces, waterways, some of the more expensive, I mean, anytime you're moving dirt, as you guys wells know, it's costing you \$100 an hour to have smoke coming out of a D6. So, some of these other areas you're getting into, if we're talking hard erosion, then you're talking about more expensive practices and the dollar isn't going to go as far as the atrazine might lead you to believe.

DL: Sure, it's a diminishing return as you do more and more product as far as improvement. So, yeah, the costs is going to go up for improvement, but this seems like when I take a look at...

CB: 2000 tons of sediment removal for, let's say a ½ million bucks.

DL: Yeah, A regional solution actually does what the EPA is trying to instill as far as management. It helps our farmers. It helps our communities. It does the right thing.

CB: It actually deals with the problem, because that's where the problem is; also, working with the sewer treatment plant and street cleaning.

JP: My question is how close we would be, where we are today, given all the work that you've done already – how close are we to being able to develop a cost benefit analysis for this alternative. In other words: in a year and with \$100,000 could a study be done or are we talking 10yrs and \$20 million?

PB: I would say in a year and a few dollars, probably \$100,000 or something like that.

JP: We're not negotiating a proposal, yet.

PB: Yeah, I think I could give you an idea of what it might take to do what we did in one watershed, what it would take to do in multiple sub-watersheds. And the farmers, they are starting to change. So, a lot of these guys, even some of the older farmers are starting to say "I can't drive back and forth and till the land like I used to. Give me some alternative." Well, we're trying to give them alternatives and if we can help them out a little bit. I think if we did a study we could pretty well tell you what would be needed to get this done.

JP: Do you have enough information at this point to put together an unsolicited proposal that you could submit to the City? I think that would be extremely useful.

JB: Do you have any idea how the state of New York enforced it, for one? And then, I mean right now you're going and talking to old time farmers and suggesting things, but you're not really– you can't find them or anything like that. You just tell them what you'd like to see done. What would be the next thing?

PB: What was done in New York is they had someone that went out, someone like Ron, and he knew the farmers. He knew the ones that were doing a good job and the ones that weren't. He talked to them and said, "what will take for you to do things right?" The one we did out here, we originally talked to the farmers, one fellow said \$250/acre and I said, "Oh my god. We can't afford that." We got to looking and one of the fields that we treated was losing 10 tons of soil/acre/ year. We pay them \$40/ton.

JB: So, is it a handshake and a look in the eye or a contract?

PB: We do have contracts here and New York does as well. New York City agrees to pay these guys a certain fee for doing whatever they ask them to do.

GO: We discussed quite a bit in our working group, that if we approached a farmer, we said "Okay, we're going to do a study on your property and we're going to ascertain this data." And we come in and install green strip barriers to prevent the erosion of material off of their location. Then, we went to them and said, "We want to install that, and you'll sign a contract." But after that in perpetuity, you maintain it. To me the value is that at some point the EPA is going to start to have to deal with or want to deal with some of these farming situations. That may be a long ways off, and politically it's a tough point, but I would think that if you went to a farmer and said, "Look, I can get you out of the target zone, forever or at least for what we're dealing with." Do you think a farmer would be receptive if we did the installation and they took care of it after that?

PB: I think we pretty, well did that in Black Kettle. We went out and talked to farmers and said what are you willing to do? Then, we scheduled contractors to do most of the work, not all of it.

GO: But you're had some success that you can show that this is achievable?

PB: Yes, now, I need to say one thing, we had 1, maybe 2 farmers who reneged. They won't get their money. One of them, at least, has come back and said, "I just didn't have time to do everything and

he will go ahead and do it.” One farmer, I’m not sure where we are with him. I think there’s one that we didn’t get signed up.

GO: Another thing we looked at was the regional approach, which was the City owns land up and down the river. A lot of it is flood control area or flood plain; does it make sense to at certain floodable times to divert water from the Arkansas River or set up some kind of program through wetlands area, which from what I can see is probably one of the best natural filtration systems that you have.

PB: That’s something that has been used in other areas. I think it would be usable here as well, if you do have land that is wet part of the year and it’s not really, say farmable or you can’t build houses or whatever. Use it for something that can be useful, like a wetland or something like that. Now the problem with some of your streams here, they have incised so much or cut down so much it’s going to be hard to get the water out. You’re going to have to pump it to get it there, but I think these are things we can deal with.

DL: I was just going to go back to the farmers and comment. It seems to me as you work this program as time goes on you’ll probably more people commit to this program. This is a new program. Once others see it’s working. It’s a good thing, others will follow thru. So what if we don’t get everyone. Every person we do get is to the benefit of our community.

PB: One of the things that we want to do and this is very important, when we sell a program we need to make sure for that farmer that the program works. If he goes to no till and all of a sudden he can’t his weeds or whatever, he is going to go right back to what he was doing before. We need to make sure that we’re out there saying do this treatment or this and help them through. It takes a while. No till takes a while to get going and get used to.

GO: What is the cost of a no till conversion?

PB: Typically they buy a new tractor, planter or drill. The tractor, what are they today \$190,000 something like that. A drill is similar cost. So, there is a lot of money, and they typically will buy a spreader. So, a true no tiller, what he’ll do is plant, and any control like for bugs or weeds or whatever he’s going to spray the field. He’s not going to do any tillage at all. Then he comes in, in the fall when the crops ready and he harvests. That’s it. Now, some of our farmers are reduced till or low till, and they do some practices. They may get in and once a crop comes up, they may cultivate. There are a lot of different things they could do.

GO: Even that reduction is beneficial and with the cost of fuel and fertilizer and equipment...

PB: We’re going to see and we may give the farmers a boost right now to get them started, but I think as the price of fuel continues to go up, like Ron said the price of fertilizer is going up. The price of the AG chemicals is going up. They are at a point right now, even though they are getting pretty high commodity prices, the costs are going up and they are about in the same boat they were before. So, they’re looking for alternatives that they can cut down the amount of fertilizer. Those are things that we need to grab a hold of.

RG: Quick point then, Gary’s point about paying the farmers to do this, which is great, but you may not be able to look at that as a onetime expense only. Some of these practices if you put in a grass buffer and its occupying 5 acres, the farmers going to look at that and say, “well, I used to farm that 5 acres. So, I’m losing possible income off of it. Plus, it’s going to need mowing or burning or tree removal or something over the years to keep it in condition to function. Same way with terraces and waterways, and terraces bring the additional onus, if you will, of creating point grows, meaning everything won’t end up square and machinery likes big, square corners. So, your options are do you farm over the terrace or wear it down and you’ve lost the affect of it or do you spend a lot of time bagging and turning in an inefficient manner in order to farm it. That’s a cost, plus fuel...these are items to factor into negotiations. Changing from a tractor, at some point he’s going to buy a new one anyway. Management kind of things can be assimilated and learned and built in, but if it’s a true structural thing, then you may have some ongoing costs that you need to pay them a small incentive to keep up maintenance over time of the life of the practice.

JP: It's almost like an endowment.

RG: Yeah, a little bit.

DL: It's not a 100% tomorrow, type of solution, but it's a path to a quality solution and what I see from this meeting is this is a problem for all of us. It's not the new developers problem. It's everyone in Wichita and the entire community in which we live and the state of Kansas. This solution helps clean Kansas and Oklahoma. Hopefully, people north of us help clean for us, but this process should be going on across the country.

CB: I would like to stop a moment and pay some focus to what Joe Pajor mentioned in the form of a solicitation and a benefit cost to ratio. I think it would be appropriate for this board to make that in the form of a motion to present to Alan King. After listening to Mr. Barnes' presentation, it warrants further investigation and if they would consider at least reviewing a proposal from KSU to a benefit cost analysis for silt removal from watersheds in Kansas. What I'd like to add to that is a calculation on how much silt reduction tonnage from standard development of a given size, 1000 acres, in a city setting, in other words to contrast that. So, if you could come in a brand new development and eliminate siltation 100% from a new development over 100 acres, how many tons in that versus a tonnage from a restoration project, if you will. So, we could contrast the cost per acre in a city setting, how many tons are we going to get removed for X dollars vs. the same amount of dollars how many tons if we could get out into the watershed as we discussed.

GO: I think it's more than that. I think we, just like the Poe & Associates letter, I think we need to meet about this and go through a number of steps. For instance, we still need to know what Wichita's actual impact is. Right now if you look at the testing areas there is a lot of agriculture area between those testing locations. We need to move those testing locations to our city boundaries so we can clearly identify what is Wichita's impact. We also need to look at some of these sites that we have post development and test those so that we can have some data that shows our true impact and then we can look at the numbers outside the city and inside the city. That will lead us to proposals. I think there's a whole host of items we need to then launch on and list out.

CB: I think that could be done concurrently.

HH: My only comment would be, let's keep it within lower ark watershed, because we're not going to try to treat parts of the Mississippi. Let's keep it to our own backyard for that. there is a water district and a water quality board that we can work with and the water does end up coming into Wichita. So, I think that's the appropriate district to look at.

TD: You said, Lower Ark, did you mean Little Ark?

HH: Both the Little and the Big Ark.

TD: Would the EPA go for that? I don't if cities are targeting different _____.

JP: Let's work on building the tool. Then, we'll see if it does anything.

CB: Yes, and we don't have to make this push today. Maybe we need to have a workshop on the motion as to how do we frame up a Request for Proposal.

JP: Let me throw out an option: if in the next ten days, the committee members that have an interest would send Scott Lindebak an email with what you'd like to see in an RFP in terms of scope, intent, and outcome. Then we will bring that to the next meeting of the group a first draft of an RFP scope for discussion.

CB: That's fair enough, if everyone here will commit to getting Scott an email.

JP: We can start to meet your individual expectations and put them together and with background and see what they look like to you.

CB: Because then I understand exactly what Gary was talking about in the monitoring. However, what I am saying is sometimes you do an analysis; you can do a 100% analysis, a sensitivity analysis. If we could say 1000 acres in Wichita, 100% removed from siltation as our standard and compare the cost or even just the tonnage; if you could do that, regardless of the cost you would get maybe what X tons, maybe it's a factor of ten times with the same amount of money to do something in a watershed. Instantly, it almost negates the need for investigation within the community and you know that you need to go to a different location.

I agree.

JP: Be forewarned there's a magnitude of difference...

CB: Okay, so everyone on the board has homework

JP: That's SLindebak@wichita.gov.

CB: This was a very interesting and enlightening presentation, today. I think all of us are concerned about how water quality affects our community, if not, our whole state and our downstream states. To me it seems if we could come up with some evidence of efficiencies we could then approach the EPA and say, "Look, let's make a new program we can possibly use to treat our water quality issues."

JP: Those discussions would at least be data enriched.

CB: Yes, are there other questions or comments?

RG: Real quick when the fertilizer came up for discussion about he didn't like taxes and maybe taxes on fertilizer would help moderate overuse of them. Farmers do pay taxes on fertilizer. Every ton of fertilizer sold in the state has a water use tax associated with it, but it goes to the Water Office and the general water fund. So, there are funds that do come out whether it's your yard fertilizer or the guy out here putting _____ on his wheat ground, everybody's paying a fertilizer tax that the state already set.

PB: I might comment that we have WRAPS groups and the funding might get cut on what, but the state water plan dollars are really intended to work on the issues that we're talking about. One of the things the City of Wichita may want to do is put some support in it, but they may want to talk to the Water Office or Department of Conservation and say, "Hey, we'd like a little support out here. Could you help us out?" They have in these projects that we're working on right now; they have put dollars in them. KDHE has put dollars in. The City of Wichita has put dollars in. So, I think It takes a combined effort of all these. I think what you're talking about is the first step for the City.

CB: A couple of items for next meeting: Gary wanted to speak as kind of a follow up to what Phil has presented today on the economic impact of the Stormwater Management Program. So, I'd like to schedule that for the next meeting, along with the normal committee reports. Then Scott Lindebak was to make commentary on Joe Hickel's analysis on some of the drainage calculations. I will follow up with Scott and find out if he's had a chance to review that in the context of hydraulics and such. I will check with him and that might be an agenda item for next meeting. We've had a couple of folks approach us: Todd Black with a hydrodynamic silt separator device. And if the board would like to have a presentation on that and/or for the porous pavement concrete we could get those scheduled. What's the pleasure of everyone?

JW: It sounds like you've got a lot for May. I would suggest that those are June, but maybe we revisit that in May and see if we're getting really tied up in this other deal that's more important than these two things, so.

HH: You can walk out this back door and see the new Lafarge sidewalk which is a different process than our parking lot.

NEXT AGENDA

1: Welcome

2: Review and approve minutes

3: Gary speaking on his follow up to Phil Barnes presentation today.

4. Discussion of possible RFQ or request from City of Wichita for information on watershed restoration

5. Verify next meeting schedule, talk about possible presentation by vendors at subsequent meetings.

6. Scott Lindebak schedule review of Joe's hydraulic methodology

7. Location for next meeting

Next meeting will be the third Friday in May, the 18th.

Thank you, Phil.

CB: I will entertain a motion to adjourn the meeting, if there are no further questions or comments.

? So moved.

? Seconded.

Meeting adjourned.