

City of Columbus
Public Hearing – 8830 191st Avenue N.E. Variance Application (PC-16-101)
(Barbara Ruppe and Sandy Learned – applicants and owners)
January 6, 2016

The January 6, 2016 Public Hearing to receive testimony regarding the request for a variance at 8830 191st Avenue N.E., Columbus, MN was called to order at 7:02 p.m. by Chair Garth Sternberg at the City Hall. Present were Commission members Jim Watson, Pam Wolowski, Jesse Preiner, and Jody Krebs; City Administrator Elizabeth Mursko, Engineer Dennis Postler, Building Official Leon Ohman, and Recording Secretary Karen Boland.

Also in attendance were City Council members Mark Daly and Bill Krebs; Sandy Learned, Karen Willy, Scot Rosevold, Dennis May, Mike Clemens, Kathy Clemens, Barb Ruppe, Chris Knight, Richard Whitman, Steve and Kate Massey, Jerry Willy, Jason Rud, Tom Carlisle, Darrell Thurnbeck, Mike Muske, and Pat Preiner.

Sternberg: So now we're gonna have a Public Hearing and discussion for address 8830 191st Avenue Northeast variance request, pages 1-34. And, at this time, I'd like to ask the secretary to read the notice as published.

Notice was read at this time by the recording secretary.

Sternberg: Thank you. And, at this time, I'd like to please have the applicants please come forward. Hi. And if you could, just state your name and address for the record.

Ruppe: My name is Barbara Ruppe, and I'm at 8830 191st Avenue Northeast.

Sternberg: Thanks. Can you just give us a little rundown on what you're asking this evening?

Ruppe: Sure. Um, what I'm asking for is a variance to put a Type III septic system in the front area of our home. And the main reason for the variance request is so that we can have a reasonable use of the land behind the house. The, we have like ten acres. So, um, we're asking to put this in the front. And because the property has a high water level throughout the whole property, we're asking for the variance to put it up front—a Type III—because there really is nowhere else on the property that meets the Code now, with the 12 inches of separation, anywhere on the property. So, we're asking to put this Type III in the front of the house.

Sternberg: So, nowhere on the property there's 12 inches of separation?

Ruppe: Not that we know. I do have with us today our designer for the septic system, so he's very familiar with that, who put together, you know, the borings, and the perk tests, and all that fun stuff.

Sternberg: Okay.

Ruppe: So he's here also this evening, if you have questions.

Sternberg: I'm thinking it'd be a good idea to have him at the table, possibly, if the Planning Commission could—maybe he could answer some questions?

Rosevold: Sure. No problem. I'm bringing as much of this paper as I can.

Sternberg: Sure.

Rosevold: Hey, how 'bout them Vikings?
(laughter)

Hi, my name is Scot Rosevold. I own a company called Rosevold Inspection Services. I operate out of Princeton. I'm also a building official, a zoning administrator and mold inspector, but I also design and inspect systems. Um, brief, quick introduction. Um, I want to get you guys a little larger map. That was the north property only. Um, I've got ten so I can give to everybody. Get a copy of the jumbo-tron, blueprint size. There you go. (distributed maps). I talked to—I think her name is Becky Wozney at the Anoka Water District, and, what I discovered briefly, was, I just wanted to clarify what she was looking at. And she was only looking at the north site. So, that was the day before New Year's Eve, and then she got back to me Tuesday afternoon at 5:20. And so it got kind of . . . Do you want a copy too?

Mursko: It's for the record. If you plan on putting it in the record.

Rosevold: Yeah, let's do that. Um, having said that, Barb got a hold of me during this process, because, what's happened is, according to your ordinance, (unintelligible), according to your ordinance, less than 12 inches of soil—is, is that how I understand it—requires a variance request? Is that what I understand?

Sternberg: Yes.

Rosevold: And that's true for your ordinance, which would be, I think, somewhat more restrictive than what I'm used to. Um, my understand—I come from the land of Type III mounds. I think here, you guys are calling it an 'other system.' So in speaking with the wetlands specialist—I'm gonna get back to her—I asked her to add more clarification for the south area too. So, on the large map, if you get—up is up. I wish I could've e-mailed it. I just ran out of time today. But, there's your north lot and there's your south lot, and the lot does continue past the bottom of the page. I think your lot is at 1322?

unidentified: 1330, I believe.

Rosevold: 1330. Okay. What I did get, which was pretty nice. I wish I would've had time to get it e-mailed, but I couldn't get good, high quality imaging, is, I did get a little bit better clarification from her. I don't know—did you get this letter? I, is this the one she sent?

Wolowski: This is the one we just got, here. We just got it tonight.

Sternberg: I think we have that.

Wolowski: This one we just got tonight.

Rosevold: And, so, everybody's got a copy of that one? Okay. Everybody's got a copy of that. When I read through it, what I looked at first, what I thought I should do is maybe clarify that this delineation that she did north, and now for me, since just yesterday and today at like four o'clock, um, was done off-site. She did not come to the site and do any, what they call, ground-truthing—found in the first paragraph—which means, I can kind of explain it very quickly. She would come out, and, because this area is mowed, up in here, she's able to use the satellite imaging, and her historical reference, and then use elevations that she has, such as 897, I think it comes down here to 895 right in here, and she develops this line, but then stopped it at the pond—right here. So, my thought is, okay, there appears to be some wetland impact, based on her, her information. So I said, well let's continue it down farther south. Um, I think Leon was correct, it does go up in elevation, but I don't think it goes up two feet. Okay? So, having said that, um, like she said, she has an existing lot of record, what I did on that map, is, I put elevations in there, and if you look to the left of where the mounds would be, um, you'll see a little thing that says here: 'soil average,' right on the top: 'soils average eight inches.' Okay? And then if you look down on the bottom, right above the other soils, it says the soils average 7.4 inches. And, I could, I'm a sewer guy, 'cause that's all I do for a living, but, that's an average of, you know, ten, nine, eight, seven, six, so, according to my calculations, based on the first letter that I got from Leon, he was indicating that he believed there was more soil separation in the back, that it was higher. Which I don't, I don't negate that it's higher up there, but the question is, is it part of a wetland? Are the edges part of a wetland? And that hasn't been delineated yet. So, um, what she did do for you guys, is, she got the blue line to go in there. What I discovered when I got my letter, late this afternoon from her, on the south lot—I should just walk and show it—um, that the wetland itself in the blue line cannot be officially delineated according to her letter. Uh, it was not ground-truthed in part because of the time of the year and the time the applicant contacted our office. So on-site analysis may or may not be useful, since snow now currently covers the ground, which she would use to delineate if there's wetland on the south side too. So, if I lost anybody, any questions at this point, where I'm headed with this? You guys okay? Okay, so, having said that, she was absolutely right, there is not more than 12 inches of soil separation over the whole site. So what I did, when I first went out there, is I walked back there. Now you guys got six inches of rain the week before, like two different times, a total of almost six inches of rain. And I got a phone call from her, saying, 'I need this information in five days. I'm having you come out.' So I came out and, what I did is found that another designer had been out there already. Okay? And apparently he had done a design, and—I don't know if he submitted it or not, I, I have no idea.

Ruppe: We did not.

Rosevold: But, he was out there because she's selling the house, and she had to have a compliance report which starts it all. So, I come out there, and I haven't really done a total amount of research yet, so, um, I got a hold of the City, got some records from, uh, the City. And, the only records I had to get, before I went out there again, was the original septic design, which put this system in the backyard. Okay? There, there's one drawing on file that says there was supposed to be a system back here, but this is actually where the septic drainfield is right now; it's over here. And, having said that, there's a septic tank about ten feet out from the house, and it meets your code and stuff, but it's like 20—what is it, 1974 the house was built?

Ruppe: No, it was built in 1994.

Rosevold: So, as an ISDS designer, I do as quickly as I can to the fields. I walk on it, I assess the site. And I'm walking over the whole site, and it's 'squish, squish, squish,' going over the shoes. And then we get in the back, it's a little better; the squish isn't quite as much. You finally get up to the back part of the lot, and, on the bottom side of the drawing, you'll see an arrow that says, 'Hundred year old oak tree.' All right? That is the highest point on the lot. That's an elevation of, well, the wetland delineator calls it 900. Okay? Um, off of that site, in the back, it drops down two feet, maybe about 75-to-100-foot radius of the place, to an elevation of 898, which is this elevation around the house. Okay? And then after that it drops off to 895-96, but she hasn't delineated the wetlands, so it's kind of a moot point. So, my job is to look, as I got a Type III system no matter where I put it. And my job is to—okay, that's why I went in the back—get it out of the water. Let's go up top. Well, it's no difference, because it didn't have the 12. So, in my historical reference for doing designs, probably over 200-300 of these in the last 15 years, is a Type III could be placed anywhere—Okay—because you're creating your soil separation. You understand the creation of the soil separation? So, let's say you had two feet of soil separation—24 inches. You would bring in one foot of clean, washed sand, and now you have your three feet. So, a Type III system, which you guys have referenced as an 'other,' um, does it with the three feet of sand. So it creates that separation. Now, you do have to have some original soils to make these systems. You can't put three feet of sand on a parking lot. So, having said that, my thought was, in looking at some of the commentations here, I had an opportunity to go on line, and I looked up, well 2012, 2013, 2014 and 2015, and I did find one, two, three, four, five different variance applications for a Type III—I think you guys call 'em 'other'?—And every one of them was approved—okay—where these soils don't exist. So, on behalf of Barb, what I'm trying to do is, I'm trying to say that, logistically, I probably can't disagree that it's higher there, but that does not guarantee the future performance of the system. Okay? Just because it's higher, doesn't mean it's going to work better. So, having said that, when I look at heavily wooded areas, I try to explain to people, 'Well, here's how it works, we've got some big trees there. There's one that's probably a two-hundred-year-old oak and it dropped its little acorns not too far from the tree, and created four or five more big ones, that are probably 18 to 24 inches, right? Well, they have a lot of roots, right? And in between all of them, there's a lot of smaller wetland delineated kind of trees, like small poplar, birch and maple. So, that tells me that the hydric—the soils are very hydrated there, just like they are on the north side. So I get to make a choice, you know, logistically. How much is it going to cost to put one up in the woods, cut all the trees down, the back—and I've got another gentleman with me who's an installer, who might be able to clarify a little more what happens when you start a mound system. You have to scarify this 50 by 80 area, which means you have to basically destroy the soils. You rip it up and move it, rip it up and move it—scarify it. Then you place all your sand on top of that. So, having said that, the north lot, in the area that they want to put these trees alone—excuse me, in the south lot—um, you're going to destroy most of the soils where that dotted line area shows. That's the first thing: It's going to get destroyed anyway. And, you'll do the same thing up front, but it's an open area, and there's not much, you know, trees. Most of the trees are gone. There was two or three on one side, and maybe one or two in the northwest corner. So, then the thought is, okay, financially—I'm just going to say it. Or, logistically is probably a better word. You have to go from the back of this house, almost 600 feet to get to the oak tree. Uh, we got a septic tank here, we're going to get rid

of, add a couple more tanks. You've got to come behind the house here with a line, and, you can see her little wetland line here, that comes like this? This is all wet. This is all wet right up to about the backside of this patio. This is the squishy zone. So now, when I think of my installer, he's going to come out with his equipment. Logistically when he installs his equipment, he'd be better coming over here to put new tanks in then driving around the house and coming back here. Now that's just this spot here, okay? So on your map, if you follow that line where it goes 90 feet from the house, 120 feet over by the shed—on the big map you know—and then it goes 384 feet more. Um, how do you get your water from that side of the house up to that mound? Okay? Well, it's gotta go on pressure. Well pressure's a good thing with mounds, as long as the distance isn't too far, because you have something called drainback. In other words, when that pump shuts off, and it doesn't put any more water or effluent into that mound, it has to drain back 574 feet back to the house. Well, logistically, that can't happen. Okay? That's impossible. That's almost eight feet if you go a quarter inch, a quarter inch per foot. So, how do you do that? Well, okay, let's go in the back, and let's add a series of tanks. We'll pump it out of that tank, which already has a pump in the basement. We're gonna pump it outside to the west side of the house. Then we're gonna come out of there, but we gotta come off that tank and we gotta go straight down into this wetland, six feet minimum, then go horizontally 90, 120, and some point, maybe, as we come out of that lower elevation, where it's still wet—I think on your drawing I would look at it—uh, this point, there's a little thing that says, 'little birch', right there. It's like in the middle. It's just a little birch tree. That's where the land starts coming up gradually, a little bit. So that would be a great place to go straight into the ground, you know, six, seven feet, go horizontally, and then, at that point, where that little birch tree is, we can put another tank there. Okay? We can put another tank there, but we have to drop, not only that line, but we've gotta drop that tank deep into the water table. So, when you start putting tanks way down into the water table what do they do when they're empty or what do they do if they're full? If you've got a million gallons of water in the spring, coming around those tanks, and you only have 1250 or 1000 in it, it wants to lift. So, yes, as designers we can add weights or we can strap it down, and we can weight it down and keep it in the ground, but we also deal with other things, like water freezes, soils move up and down—it's not the best. So, a lot of times when I design—either it's residential, and I've done some commercial also—you would switch over to a commercial-grade tank, which is what they use in cities. You know, the big round ones that go down almost ten, 20, 30 feet? And then you put little manhole covers in and ladders and stuff. That gets a little expensive. Now keep in mind, we're in the water. So, how do you put this stuff in the ground while you're in the water? That's not a very easy thing to do; it's called de-watering. Okay? Which would mean somewhere between that house and three-hundred-and-some feet, as we're getting the first line over to that one tank, then we've gotta go another couple hundred feet to this new mound on the south side. We've got to de-water so we can set that pipe. That's one option. Now the other option is use, what Denny would call directional mooring—where people will go straight down and then the equipment will laser-line these lines out into a directional. So, having said that, that could, if you went directional mooring, you could eliminate the mid-tank. And you could go from the house all the way down, six, seven, eight feet, go horizontally 600 feet, and then come straight up into that lawn by the oaks. Now, that's the interesting part of that; that's very expensive, and, I've done it in other places, like up in Benton County and Mille Lacs County, but we're way up on, above water, you know, and we're coming off a hill and we're going down, and we're not going below a water table. So, I have no historical reference for you on if that works. Okay? And servicing if a pipe breaks would probably be a bear. Right? So, having said that, as a designer,

what's the quickest point between, you know, the quickest distance between two points is very narrow, very short and straight line. And, that defaulted me back to the front. Now, when I default to the front, you set it up, you go, you do all your information up front, you set it up. And I think there was a letter that Leon had sent to Barb, that Barb sent to me. And I think in that letter it said that you wouldn't, you did not recommend putting it there? Is, is that correct? I'm, I'm . . . This one, right here.

Ruppe: Ah.

Rosevold: Uh, I'll just read it, so, 'The site chosen by this designer and owner has standing water in a boring hole.' He said boring holes at a depth of four inches. Um, yes, he suggested another site on the property should be assessed to treat the septic effluent. I agree, because that would be, uh, following your ordinance procedure in your last paragraph for some type of conflict resolution—usually it's soil. Um, then you meet at the site. So I met Leon out at the site, and we did go out to the site on soils. So, having said that, there was little or no difference in the soil separation. Meaning, yeah, it's higher, but it was still hydric and had redoximorphic features at a higher level, just like the front lot. So, reading on a little further, 'the south side has an elevation difference of approximately 24 inches above the front site.' I think if you took elevation 895, which is what these ladies are using—I'm using e.l. 100 'cause that's simple math—um, I don't come up with that much. I probably come up with a foot and a half, but that's to the highest point in the back, okay? And I, I should have told Becky, er, I think I'm, yeah, the wetland delineator, I wish she could've e-mailed the south site to me. She got me a beautiful drawing on that south site. The highest point is this oak tree that's about this big, right? (gesturing) Well, having said that, that's not where the septic's going. I'm not even gonna mess with that, so I backed it off to the south. And when I back off to the south, that's what you see on your drawing. It shifts downhill to the east, and it shifts southward. And there's a little spot in the back of the south end, it says, 'dug out area, disturbed soils.' Not the end of the world. It's where somebody came back with the front end of the tractor, you know, and dug out an area about, probably this wide (gesturing) by maybe—a table. About the table size. But that's in the absorption area. So, up in the front, you know, as far as the soils go, I don't see any difference between the front and the back for soil separation, and that's why I added up my average soils, and I actually have eight inches up front and only 7.4 average in the back, even though it's high. So, having said that, and going back to the letter, Leon went on after that and said, 'Soil borings show mottled soil at an average depth of 9 inches below the surface. With the difference in the elevation of both sites, it is not known where the water on the north or the front site actually is. The soil borings show black soil prior to standing water and mottled soil indicators are not visible in dark soil.' Well, that's an indication about soils. What I look for is some iron ore stains, which is—water table goes down, water table goes up, it'll leave iron ore stains in the soil. They were not there, and they weren't present. And that's why, when I did my first borings, I said, 'Yeah, I got standing water at six inches, I got standing water at eight inches, but you just had six inches of rain.' So, my thought is I, I'm a little disagreement about the separation on the stuff. Now black soils, I can bring a book for you, black soils are a good indicator of like swamp mud, but they're also an indicator of forest blend. In other words you have leaflet and it drops off the trees and creates a beautiful topsoil, and that is black also. So I'm not sure if that's where you were referencing the black soil. Um, and it says, 'An assessment was conducted by the Anoka

Conservation District.’ Well, that’s what triggered my phone call to the Anoka Conservation District. She didn’t do an assessment, she did an offsite evaluation. An assessment is a different thing, so she clarified that for me. Um, Leon went a little further, and he says he does not want to recommend the north site, not knowing where the subsurface water is and how the groundwater could effectively, potentially pollute, and, dadadadada, this or that. So, having said that, in wetland, in wetland terms, which I love, is ‘cause she sent me the letter, and she goes, um, the very last paragraph that she sent, and you probably have it, the zoning person got it: ‘That said, ultimately the best septic design that is the least likely to fail’, okay, ‘is what should have precedence for the location of the field, since the WCA only regulates wetland impact.’ So, having said that, and the reverse of that in sewer language is, is my term, what I call future performance. Okay? The future performance of the system. Well, in 7080 through 7082, especially when you get into sizing mounds and things like that, when you get into Type III systems, the future responsibility for the future performance of this drainfield and the tanks, if it’s considered a Type III mound system, is the responsibility of the owner of record, for the life of the system. It’s not you. It’s not me. Uh, actually, it’s not even her (referring to Ruppe) after she sells the house. It becomes the ownership of that person, so there’s very limited what I call legal liability of the future failure of the system. Now, I’m not a guru, but I have done—oh, I don’t know, two, three, four hundred of these—and I have yet to sit in front of a court of law saying I improperly designed a Type III. And, when you talk about wetlands, we’ve got ‘em next to ‘em, we’ve got ‘em in ‘em, we’ve got ‘em around ‘em, and, so, in the wetland delineation land, what she talked about is a term called ‘de minimis’, meaning that it falls under some criteria or greater wetland research, and exhaustive banking, and clarification. So, this blue line that she indicated, when I asked her this afternoon at about 4:45, I said, ‘Well, is that official?’ and she says, no, that she really can’t make it official, right?, unless she does, and goes out to this site, in warmer weather, and ground truth—meaning she’s going to look at the aquatic vegetation, the grass, the seed. Uh, the front lot, which is mowed right now, she referenced, ‘Yup, I could do the front lot because it’s mowed, but I couldn’t do the back or the south, because it wasn’t.’ So, um, what I’d like to do is I, is give you—I wish I had her e-mail this, or if I had a way to e-mail it to you, to bring it up—you’ll see, on the south lot, more difficulties in getting back there. So, what, what I was looking at, is it seems as though this jurisdiction is worried or more concerned about what we call a wetland impact. Okay? And I know Leon had mentioned about protecting the groundwater. Well, if it’s considered de mini, de minim, de minimis—that’s kind of a big word—but, um, that’s something I’m gonna let her tell you what that is, because there’s more to it than just meets the eye, but it doesn’t mean that it’s that exhaustive. In other words, it’s not going to change the world. As a matter of fact, she identified it as 1800 square feet. Well, 1800 square feet is probably my whole mound area, but really where her blue line was had. Having said that, on your big map, when we talk about de minimis impact on a wetland or the environment, look at the distance that you have to travel from that tank on the left side of the house and go all the way down south to the back side of the lot, at least 20 to 25 feet wide, with very heavy construction equipment, backhoes, dump trucks, loader trucks, and then, eventually, a septic tank truck. Right? And what they will do for environmental impact on that is greater than the unofficial blue line. Okay? So, having said that, my recommendation is that you approve her variance, okay?, and let her put her system up front, with ever- if you want to wait ‘til spring to get the official approval, but until you can actually devalue the south lot, I don’t think you can make that decision here, based on just the north info you have here. Uh, any questions? Yes. I was going to find that little letter she sent to me this afternoon . . .

Krebs: Mr. Chair, I do have a question.

Sternberg: We actually do have a question here.

Rosevold: Go ahead.

Krebs: Um, looking on page 9, where you have your field evaluation form, number 5, it says Phase I reporting information, that's derived from the five soil observations that you made on the site in that proposed area, correct?

Rosevold: Page 1, I, I've got to grab my design set. Give me just a minute. Just a minute.

Sternberg: What page, Jody?

Krebs: It's page nine in our . . .

Rosevold: What's it say at the top of the page?

Krebs: It's your OSTP field evaluation form.

Rosevold: Field? Okay.

Krebs: Yup. Just to clarify that there were five soil observations?

Rosevold: Yes.

Krebs: And from that, your standard depth was six inches? Is that what you put in there?

Rosevold: My average depth. On your big map, on your big map my average depth was eight inches. I actually have a soil boring log that you—it should be in there, uh, uh, just continue your pages, you have field, field, field, you should have something that looks like this, called a soil observation log in there, about three, four—yeah, he's got one there.

Wolowski: What page?

Rosevold: And there, there should be two pages, two pages in those, and that is your B1, B2, B3, B4, and B5. Anybody get it?

Krebs: Oh, I'm sure I did.

Rosevold: You're in the way back.

Preiner: I'm only like 20 from the front.

Wolowski: Ten and eleven.

Krebs: Okay.

Sternberg: Ten and 11. It's on the back of the . . .

Krebs: Okay, Can you, uh, clarify that a little bit more for us, then?

Rosevold: Um, oh the field evaluation. Okay, based on the, the first part we mentioned about the field evaluation. This is a MPCA or MPCA said, 'U of M, University of Minnesota, give us a standardized form that we can use for all of our septic systems', okay? So the very first page is called preliminary evaluation. And you said you were on the field evaluation?

Krebs: Correct

Rosevold: And you went down to item number four?

Krebs: Five. Yup, four and five.

Rosevold: Number five?

Krebs: Yup, four and five.

Rosevold: Phase I, you have a question about the terminology or . . .?

Krebs: No, I'm just clarifying that the observations from the five borings that you did on that, came to this, this . . .

Rosevold: To the six?

Krebs: To the six that you're stating there.

Rosevold: Oh, okay. Good, that's a very good question. You have to take the worst one. In other words, if you have six, seven, eight, nine, ten, eleven as soil separation—meaning from grade down through the soil's horizons we call them. That one up in the northwest corner, right at the end of the arrow of the 45, probably in about 10-15 feet, that's the one where I had six inches to standing water. Okay? I had no redox to that then, but as I went over to—you see the numbers here? Uh, here's boring number one, and if you look there under B1—you may not have, it might be the first one listed—I think I've got, uh . . .

Wolowski: Ten inches?

Rosevold: They go one, two, three, four, and I put the fifth one in the middle. So, if you have two soil boring pages you would go to soil boring, page one—I'll just help you out a little bit here. Here you go: auger, primary site north of home, B1 zero to four, B3, B4 or B5. Let's see if you've got it? There. There's B1, B2, and then down here is 3, 4 and 5. You've got B1, uh, B2, B3, 4, 5. There, you got it.

Krebs: Yup. I got it now too.

Rosevold: Okay. Excellent. Excellent. Everybody's got it. And then I've got 'em re-listed on the big map. And, and put it into elevations, because we had to go out and survey and re-shoot elevations, because we had to find out what was going on on the back site. So that's when, right next to the elevation numbers, you'll see an indication that'll say, 'What does that mean?' Ten. That's the soil separation, ten inch, nine inch, eight inch, seven inch, five and six inch. So that's where I come up with the average of my eight and my 7.4. Does that help you out a little bit here? In other words, on that form, in that section that you're looking at, I had to put the worst one I found on the north side.

Krebs: Okay.

Rosevold: Which would differ—Leon, I think, mentioned he saw water at four inches, well, I, I can't deny that. I, I don't know if you came out the same day I did or . . .

Ohman: When we dug that hole. When you dug the hole, in the front side.

Rosevold: We didn't do any in the front.

Ohman: Yeah, we did.

Rosevold: We did?

Ohman: Yeah.

Rosevold: Oh, okay. So, that's a, when I do my soil design and I put them together, that's what I see, so . . . Does that help on that one?

Krebs: Yes. Thank you. Yes.

Rosevold: In closing though, one of the things I'd like to do on her behalf, is also invite my friend, uh, Denny May, from DT Excavating. He might be able to explain to you a little bit more about the equipment, the accessing, and the actual logistics of putting this system on the south, if you decide to do so. So, come on up, Denny.

Sternberg: You have a question, Jim?

Watson: Mr. Chair?

Sternberg: Jim has a question.

Rosevold: Yes, sir.

Watson: Um, my understanding of a Type III or other system, it's based on evaporation.

Rosevold: Uh, no.

Watson: No?

Rosevold: No. Um, how would I say this? Um, I've been doing this 20 years. It took me 20 years to figure out all the answers, and, during that time, they kind of changed the rules about three or four times too. Um, but a quick generic history of, I think you're talking about soil separation?

Watson: Well, with this system, even if we talk about 12 inch of separation, what's the impact to the ground that's there currently? And maybe this, even to Leon.

Rosevold: Okay. Soil doesn't—oh, I see what you're saying, evaporation. I saw, I went on line and I looked at some of your other approvals, and there was some talk about something in there about evaporation, and that it evaporates better in something. I think I saw one in those comments you have up. The way we want to deal with septic effluent. That's the, the sweet corn, you know, the stuff that we have that goes through a series of tanks, and turns into water or effluent. And then we take the effluent and we put it out into a drainfield, right? What we want it to do is go percolate through minimum of 36 inches of soil, which is the rule now—it used to be 24 inches—and, at that point, your rock bed—your distribution is in the rock bed—at the bottom of that rock bed and up on the sides, down on the bottom, is something called a biomat. Okay? And if you ever dig up your trench or drainfield in the backyard or a gravity box, you will see this black sludge on sides in the bottom of the trench, and there's a lot of bugs in there. So, what we want to do, the soil thing was a University of Minnesota thing, and it's a nationwide deal, we're using the soils as a filter, okay? And we're filtering this stuff through the soil. The sand gets down to that level. And, and that's where we want it to develop a biomat. The biomat, over the course of time, is the engine that gets rid of the nitrates and some of the effluent, and it eats the bugs. And that's what keeps you from getting your poison to your well—such as nitrates, coliform bacteria. That, that's the quickest explanation I can give you, versus let's make a seven-foot sand lift, let's just put a lot of stuff in it, all the sewage is going to stay in there and it's going to evaporate. If the water evaporates, you still got your nitrates there. That's where this biomat comes in, and that's what the University of Minnesota does with all their testing and rule changes, saying, we need to keep the amount of water going in to a certain level, but we need oxygen in there to help develop the biomat. So they don't, now they don't even want you to put septic systems more than four feet in the ground, 'cause there's no oxygen, so . . .

Ohman: And there's no oxygen when you hit the groundwater.

Watson: Okay.

Ohman: Type III is, is just a definitive term that says that it isn't . . . A Type I system is a system that has a minimum of 12 inches of native soil. Okay? So, that, like Scot had said, that if there was two feet of native soil above redoximorphic features, you added your foot—and, again, I'm using his example from earlier—and that gives you your three feet of separation. Type I system is a, I'm going to call it a standard system to where you have a minimum of 12 inches of good soil before you hit the redox features or mottling. And, Type III, basically is a term that

says, 'We don't have that.' So it's something else. So a Type III, yes, you can do other things, but it isn't a standard. So with a Type III system you, there are more concerns with failure. Uh, they're, they require more maintenance, and monitoring. So, both of these sites that they had submitted were, are Type IIIs.

Watson: Basically we're just moving it out of the ground, into an area . . .

Ohman: Right. Correct. Correct.

Watson: Okay.

Rosevold: There's actually five different types of systems. Type I, II, III, IV, V. and as you go through 'em, if you get past Type III, now you're getting into what they call technology systems, where they treat the effluent through filters and sand filters and bubblers and nibblers and all this high-tech stuff that costs tons of money, and then the water comes out cleaner. But, they still can't put it in, you know, less than 12 inches of soil. So you're still stuck with what kind of system? A mound, a trench, a bed, an at grade. And that's where, they, they, you know, I was going to say, if you can put one in the ground, you need five feet. If you want to put a pressurized bed, you need about four feet. If you put one right on the ground, called an at grade, that means you have three feet of separation. Well, if you've got less than three feet, now you're getting into the mounds, you know. So let's say we had 34 inches of soil, but, yeah we need 36, you know, but we can't do it. We have to add a foot of clean sand on top of the existing ground. Now we've got more than three feet that way, so . . .

Watson: Okay. As, as we look at any system, I don't think I'm as concerned about engineering, the engineering aspect of it, as I am the mechanical failure part of it: pump, lines freeze, crack, break, shift. Now, now we've got serious problems.

Rosevold: Good thing on the pump.

Watson: My, my thought is keeping the equipment, the amount of equipment, to a minimum, would be a better situation. Uh, that having been said, and lifting this mound out of the ground, what would be wrong with scarfing off the drainfield that's currently there, moving that field farther south . . .?

Rosevold: It's also a Type III. If you, if you choose to do that, it's also falls into a Type III. You could put it right back where the other one was. You'd come in with a truck, you'd take out all the stuff, you'd build three and a half foot sand, you'd put it in the same spot, and you'd put a rock bed on now. That, that's a Type III. And the monitoring is actually the responsibility of the owner of record, to keep the record, so when they go to sell it, that they didn't exceed their water use. 'Cause that's why mounds fail, is people exceed their water use. Or, unfortunately sometimes you might have hit some bad sand there first. But, yes, you do need some original soils at the bottom. If you scrape out the old site, where'd the original soils go? They're bad. Okay? Denny could talk to you about Type III box mounds, Type III dig outs, Type III build-it-on-top-of-the-ground and . . . There's all sorts of Type III systems. But, that's the uniqueness of them. Is, is they used to call 'em experimental, then they called 'em other, and now they call 'em

a Type III. But, they are engineered systems. U of M said, 'Hey, let's do this, let's put it out there.' Does it work? And they said yes. It's listed in the book. It's actually . . . the term standard is interesting, because it is considered a standard system in one sense of the word. It's just as good as the rest. The only difference is that we're creating the separation; where we have natural soils are better. If, if that helps you out. Any kind of natural soils are better. But think of a small lot, for instance, like Coon Lake or a small lake lot, where there was no place to put any type of drainfield, because the old drainfield was up by the driveway. Well, you could dig down five, six feet if you were up on the hill. Dig it out, put 4 ½ feet of mound sand. I'm doing one in Sherburne, one in Benton now, just like that. Where I'm digging out an area that's 30 feet wide by 60 feet long, four feet deep, and I'm dumping in the sand. Now, the original soils, outside of that area, was good down four feet, right? Which means I can put a bed in. So that's why we dig it out the four feet. That's one example. Denny's got examples of like a box mound, smaller lot. There is no room to meet the setbacks. Let's build it, a retaining wall around a giant mound, and let's come up in the air with it. That's called a box mound. Maybe Denny . . .

May: I've done probably . . .

Sternberg: Denny?

May: Dennis May.

Sternberg: Yeah, just name and address for the record, please?

May: 20550 Potassium Street, Anoka.

Sternberg: Thank you, sir.

May: We've done, I think, four this year in Lino Lakes, in the box mound, where they couldn't meet the setback. We did one in Nowthen, on a lake, that couldn't meet the setback. And in, in this situation, where you see one and two on your, on your, and then she drew that line coming across between two and 82 on angle. If that was such a big impact issue, you could do that in a box mound and snug it toward, tighter to the driveway. But, it's gonna be this high (gesturing). Typically done with timbers; can be done with concrete blocks as well. And, as far as impact on the rear, going back there to build it, I think you're gonna do more wetland damage than you would in the front. I mean, I understand Leon's point, and I was out to the site as well. Yes, it's very wet. It's very wet. It was very wet all the way back. But, at the same token, we had had quite a bit of water. I don't think that truck, this will support trucks back there. I think once them trucks break through that sod, you're gonna have a mess back there. You're gonna tear up way more than you would doing it in front. And I'd be, whether it goes in the front or the back, obviously the back one is gonna cost a heck of a lot more money, and a lot more potential issues that—who's going to find them when it leaks? If it's in the front yard they're gonna, it's gonna be up where they can see it. They're gonna notice something. That pipe down there, underneath the ground, could—if it was used PVC—could break with the frost heaving it, and there you would be. You'd have that being pumped out there, and no one would ever see it. And it would be a larger impact on the environment than putting it in the front, where it can be seen. And as far as digging out the old, in this particular situation, I think you had mottled at three inches up where they did

the compliance, along the side of it. And because this house has a grinder basket in the basement, the tank size is gonna be increased. So the tank that's there, even if it stayed and was good, you'd be putting another one there that size, to accommodate, because of the new code change last year regarding the grinder basket. So there's not a lot of decent area there to work with, to start with. Um, I still point to the front, for a lot of issues as far as mechanical issues, your pump lines are shorter, your pumps. Everybody'd be able to see what's going on 'cause it's right out in front where they mow the lawn. They can see if they get a wet spot, if there is something broke. Any other questions?

Krebs: Mr. Chair, I do have . . . So, you would stand behind your system if you put the system in, even if there was an issue later with the wetlands people?

Rosevold: I'm required by State statute, under the licensure of the designer, that they have my name on the hook as designing it. They have the installer on the hook for installment. Right? And they also, now, because it's a Type III, actually have the owner on the hook too, versus a standard system he was talking about the default would go back to the installer, the designer. And most recently in '08 and 2011, they added local units of government by verification of soils, which is what Leon did, uh, so they could put them in on the hook too, because systems were going in, and they shouldn't go in where they are, so, back in '08, potentially '11, jurisdictions were forced to verify soils prior to issuance of permit. Now, where a Type III system exists, we know it has less than three feet, two feet, one foot—doesn't even have, well Leon's got four, I got six. We all have different opinions of where it's at. My thought is that three years down the road I doubt you'll see me in a court of law that this thing is failing. Now, as far as wetland delineation or any wetland impact you mentioned in your statement, I did talk to the soils lady, Becky, and uh—Becky Wozney—and she did say that she would have to apply for a permit, because part of that system's corner or upper northwest corner is considered a wetland. Now, as she comes out there in the spring—and, let's say we approve that front lot or the back lot—she's going to go look at the grass and the other stuff, and say, 'Hey, there's a water buffalo flower, where we can't wreck, so you've gotta move it over this way.' She may find some ground vegetation that may alter a lot of stuff. But, at this point in time, she's making it pretty simple and saying, 'Hey, two-thirds of the front area in the mound is okay. The one corner's stuck in the'—what she's classifying as a possible wetland. Um, and that she has to apply for a permit to go through the process which invites them out, and then it's ultimately the responsibility of the owner to get approval through them, and, as far as she was concerned, she said they're actually an item number four as far as authority. And, I, so to answer your question, do you want me to sign up for that wetland? You mean, what, that a sewer system is gonna drain out the end of that thing and go in the wetland, is that what you're saying?

Krebs: No. What I'm saying is if, if, um, Ms. Wozney comes back in the spring and says, after you've put the system in, 'No, it can't be there', are you gonna move it to that back site then? Um . . .

Rosevold: Oh, I'd have, well, well that's the part I was trying to say earlier, is that she's never been to the site at all yet.

Krebs: No, but if it's determined now, when they come out in the spring that, 'Oh, my gosh, the City approved this, and now we have to go back to the developer, because . . .'

Rosevold: Oh, it wouldn't be the developer.

Krebs: Well you, the, whoever developed the system.

Rosevold: Oh, as the designer, I . . .

Krebs: Designer.

Rosevold: I would go back into the design and say, you know, 'I put my hands up. I give up.' She says that there is no wetland impact back there, which isn't—wetland impact is another term versus septic impact. And then, like, his concern was, 'Are we adequately treating this effluent before it hits some type of groundwater', i.e. water, right? And is more soil a better idea? Yes, it is. In this case, um, we're adding more soil to create that separation. That's kind of what I'm trying to get at, so . . . If there's a problem where I have to redesign it? Yeah, I mean that's part of the deal. I mean, that's how I go, so, for instance, if you approve the north site, subject to nullification of the south site, that would be fine, or, both, or approve the north site or the south site, subject to re-verification for soil and water at ACW—is it ACW? Uh, Anoka Water District to come out in the spring and finish their ground truth part. And then, when they do that, if they find that there's some ground truthing up front that's, they don't like, right?, that would default me back to the back, where they would disallow it. But that's where she used the term de minimis, okay? So, it doesn't get that complex with, with this type of application for her, so, I, I think that answered your question.

Mursko: That's only if you meet the de minimis amount.

Rosevold: Right.

Mursko: If you go over the de minimis amount, you have to replace it.

Rosevold: Right. You have to get into the banking system and find another place to fill it in. You've gotta pull it out. Yeah.

Mursko: But then you go through sequencing, and that's when you have to find an alternate location versus that.

Rosevold: Right. Sure, like if you're not on site, you might have to get into the bank and go to some other place in Minnesota.

Mursko: Correct.

Rosevold: Put your site—well, it's kind of a weird thing, but . . . She knows it, that's good. She's good.

May: Leon?

Ohman: Yes?

May: Do you have the homeowners give you records? How many gallons have been pumped on these Type IIIs?

Ohman: Yes. Well, we do, we are on an annual or tri-annual pumping schedule. So, when you guys do the pumping, that goes into the permanent record. Yes.

May: Okay.

Ohman: Yes.

Rosevold: And the Type III system actually, well, actually it's been out there for a couple of years, any pressurized distribution system requires either a flow meter, an event counter or a cycle counter. And those have to do with, well, obviously water use. So if this system is designed as a 450 gallon per . . . Three bedrooms?

Ruppe: It's three bedrooms.

Rosevold: Three bedrooms. Four hundred fifty gallons per day. And the pump kicks out 100 gallons every time it pumps on and then it cycles off, that's called an event-event counter. So, there's actually another page in a septic design—that I actually made one and modified it—that actually shows, uh, let's just say I put it in March: March 1, 2016. And then for 30 days they go daily, and then for one year or two years they go monthly. And at the end of, whatever you guys decide, but I didn't find it in your ordinance, you didn't have it in there. I use two years, 'cause I'm thinking, 'After two years it would've failed in the first two months if they were using too much water.' But, it's up to the owner to keep that record with them. Now it's up to the jurisdiction to actually require that information be submitted, but, you'd have to do that by ordinance, and me and my jurisdictions, we don't want the extra work to be honest with you. We want that management plan, we want that event counter, and you keep track of that record. So, if there's a problem, and you call up two years down the road, 'Well, where's your water usage record?' 'Oh, what water usage records?' 'The one that we gave you when you issued your permit that was part of the septic design in the homeowner's package.' And then you're off the hook. But, but that's why Type IIIs are, are kind of interesting, because, it goes back to the owner. To me they're the best—I wish they'd do all systems like this. Then nobody can blame anybody else but the owner. So . . .

Sternberg: Any other questions?

Rosevold: . . . there you go.

Sternberg: Okay. Thanks. I'm gonna—if you guys could—thank you for everything. That was a good presentation.

May: Thank you.

Rosevold: Oh, you bet. I did find that other picture of the (unintelligible). This is the south site, that she sent me at 4:30 today.

Sternberg: Sure.

Rosevold: And that's what I was using, to let you know. Um, that's the highest point in the middle. And these little black lines are kinda, how it zigzags, and then they go like that, and then they get out in a bigger area of two-foot drops.

Sternberg: Okay.

Rosevold: So that's really a good one, and she had that here, so, but she didn't have the other half, so, maybe we can get her to send that.

Ruppe: Will you explain to me what the process is from here forward?

Sternberg: Well we're gonna, I have to open the hearing to the public, and let the public speak. Then we deliberate and then we'll do a variance. We have a questionnaire, and . . .

Ruppe: Okay. I just want to end it by, and summarizing it on my part, is, again, I agree with you Leon, we want to protect the water, the water table, the groundwater. And, I think the system in the front is—as he said—much less chance of failing without all that other equipment and tanks and pumps and whatever as in the back. So . . .

Sternberg: Thank you.

Rupee: Yup.

Sternberg: So, at this time, if there's anyone here from the public that wants to speak on the matter . . . Come on up.

B. Krebs: I have a question for Leon and the design guy. Councilmember Krebs. Columbus. Uh, I was out to the site along with Planning Commissioner Watson and Krebs. And, uh, I have a question for you, Leon. I understand a wetland issue. This whole thing is a nightmare. There's nothing virgin about anything on this piece of property. It's wet; it's horrible. Can't we just take the old site, er, can't they just take the old site, dig it up, combine it what, with what is available? Nothing, nothing's good here, but can't, the old site, redo that and maybe use this whole area—not even touch this part of the wetlands? Can't, can't the (unintelligible) be in here?

Ohman: It's possible, but that isn't what was submitted.

B. Krebs: I understand that, but I'm just saying . . . He just said a few minutes ago, that he would be willing to redo his deal. If you gotta wait for Becky for spring and everything, it, it could go horribly wrong. I've been there with that wetland stuff and it, it'll just go south.

Rosevold: See, and my job as the designer is to find any original soil, whether it's one inch, four inch or six inch. Well, when I found that that's where the drainfield was, that's not where I'm supposed to go find one. I'm supposed to go find virgin soil.

B. Krebs: When I was, when I was there Sunday, the, the pole barn—it's in the back and, we've been talking about these lately, being too low. You can tell it's been shoved around by frost, like a bunch of other ones in Columbus, because it's too low. I mean, I kind of agree with those guys, going through that whole low area with pipes and everything might be kind of an issue. So, I'm just asking you guys if that is maybe a solution to this issue for these people.

Ohman: It may be, but we don't know, because it hasn't been—there hasn't been a design on it, it hasn't been submitted. What we, what we deal with is the two design sites that we have submitted.

B. Krebs: Right.

Rosevold: I, actually, a little clarification. There has not been a design submitted for the south site. There has only been a design submitted for the north site.

Ohman: For the north site. Correct.

B. Krebs: But you've got a staked out area in the back?

Rosevold: Sure. I could do another design where I turn it the other way, we'd scrape out all the soil next to the house, 20 feet away from the house, we go out 55 feet towards the blue line, uh, maybe shove it a little bit more—we need 55 by 80. If I could make it fit, I'd make it fit there.

B. Krebs: What I'm just saying is that when I walked on that, not only in the back yard, but just behind the barn, is a place where you walk in, there's a shelf there. Where somebody—looks like—and it's a straight cut like this. . . . When the house was built, they pushed all that top soil forward. My guess is, the front yard, probably the same way.

Rosevold: Berm.

B. Krebs: So, virgin soil is . . .

Rosevold: Right. He's got a point. He's got a point.

B. Krebs: That's just my question for you guys, if we could . . . whatever. If you could . . . Thank you.

Rosevold: It's a difficult site.

B. Krebs: Oh, it's horrible.

Sternberg: Anyone else from the public that wants to speak on this?

Clemens: Yeah. I'll speak on this.

Sternberg: Sure.

Clemens: Um, for the record, Mike Clemens, 8742 191st Avenue. Um, happen to live in the area, and, listening to all this here, I'm not going to claim to be an expert on septic. Waste, I do know a little bit about wastewater with my job. Um, I haul and operate. I know how flow works; I know how lift systems work. And this, this situation here, to me, is not unique in the City of Columbus. I think if we look around the City of Columbus, this affects many, many people. And, I'm really struggling with the decisions that not allowing a Type III system on a property, um, only at the back location. I know the area. I know that lot. They're very—there's an elevation change. I don't believe it to be that great. I feel that a proven system, a Type III, should be allowed on the property where it best fits. I agree with what you had said earlier, and him also, as far as, you're going to add infrastructure: piping, lift stations, tanks; you're gonna have more issues. And so, I think the City of Columbus has really gotta look at this here, and do what's in the best interest of the people, of the environment. We know this system works, a Type III system. It's proven. So, it's nothing new. We're gonna bring in, they're gonna bring in this dirt. They're gonna build it up. I agree that I think that the existing system that they have is a very logical place to undoubtedly retrofit and maybe utilize if possible. So, that, that's all I wanted to say. I support the decision of the, the homeowners to be able to be able to build and put it in a different place than in the back. I, the other thing is, that the trees I feel—you're gonna worry about this, and then you should be looking at also about the 200-year oaks and some stuff there, back there. Thank you.

Sternberg: Yup. Thanks. Anybody else?

Rosevold: If that's a 55 by 80, can I put a 55 by 80 here? Can I turn it that way?

Sternberg: I gotta let this, I gotta, we're in the public hearing part of the hearing.

Massey: Yeah, I'm Steve Massey. Uh, 8855 191st, right across the street from the property we're talking about tonight. In '98 or '99, on maybe six inches of mottled soil, we put an experimental or Type III system maybe 200 feet from where this is proposed, and it has functioned extraordinarily well. I, I'm far from an expert, but our system has worked extraordinarily well. And, if it's feasible to put an experimental system, or Type III system, on the, the north side of that property where we're talking about, from an aesthetic standpoint, from an operational standpoint, we fully support that; it makes good sense. I, I would hate to see anybody spend the dollars it's gonna take to put it three hundred yards out, out, out the back, tear down precious oak trees, um, not, not to mention the tremendous impact on, on the environment just to get there, and accomplish the work. So, we fully support—if, if that site will support a Type III system—it makes great sense to us. Thank you.

Sternberg: Thank you, sir. Is there anyone else that would like to speak? Okay, then I'm going to close the hearing with the right to reopen if it becomes necessary.

Hearing closed at 8:04 p.m.

Respectfully Submitted:

Karen Boland, Recording Secretary