

**Minutes of the  
MEETING OF THE Metropolitan Area Water Supply Advisory Committee**

October 23, 2013

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**Committee Members Present:** Sandy Rummel, Jeffrey Berg (Dept. of Agriculture); Sandy Colvin Roy (Minneapolis); Tom Furlong (Chanhassen); Katrina Kessler (PCA); Susan Morris (Isanti County); Michael Robinson (Chisago County); Steve Schneider (St. Paul Regional Water); Jamie Schurbon (Anoka County Conservation District); Lisa Volbrecht (Sherburne County)

**Committee Members Absent:** Randy Ellingboe (MDH); Chuck Haas (Hugo); Julie Ekman (DNR); Barry Stock (Savage)

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**CALL TO ORDER**

There being a quorum at 10:15 a.m., the committee elected Tom Furlong as Temporary Chair, who then called the meeting of the Metropolitan Area Water Supply Advisory Committee to order on Wednesday, October 23, 2013.

**APPROVAL OF AGENDA AND MINUTES**

It was moved by Schurbon, seconded by Schneider to approve the agenda. **Motion carried.** It was moved by Volbrecht, seconded by Schurbon to approve the minutes of the July 24, 2013 meeting. **Motion carried.**

**PRELIMINARY LOCAL FORECASTS TO 2040**

Todd Graham, Research Analyst, explained that the Metropolitan Council (Council) provides forecasts of population, households and employment in ten-year increments, forecasting what development will happen based on market demand. He presented a short introduction of the Council's forecast program and the preliminary forecast findings.

He explained that forecasts are benchmarks for future expectations, and are the basis for both regional and local governments' planning and capital investment and service provision. In this region we have an expectation that the local and regional governments are planning for the same future and forecasts provide a very discreet set of numbers for helping that coordination happen.

The forecast program is authorized by state statutes and is related to the 2040 Thrive plan.

In the past decade, development patterns, transportation behavior, and the housing market, have all changed, resulting in the use of a new set of forecasting tools.

The 2040 preliminary forecasts, which are a work-in-progress and subject to change, will fully replace the 2030 Framework forecasts.

Next Steps: Workshops will be held in October and November providing local governments the opportunity to comment and validate the data and assumptions. Revisions to the preliminary forecasts will be made in early 2014, and the 2040 regional and local forecasts will be adopted in spring with the Thrive MSP 2040.

*Transcript of committee discussion follows.*

**Morris:** One thing that we think that would really impact the growth in our area is if the high speed train comes through Isanti County and I know you said that you did factor in transportation modes was that something that

was looked at for that part of our region. I know we're not on the map technically 'cause we're right above where your map ends but...

**Graham:** We haven't done forecasts for Isanti County. I mentioned that we had a baseline set of regional policies. These are policies that are long-standing so they won't be controversial. Among the transportation network assumptions we assume that there are some modest additions of network capacity by 2040 but most all of it is work that is already planned and in a work program for the next 20 years. There really are no wholly new highways in our assumptions. At most we are in some places adding SOV lanes to I-35 for example. As for the high speed rail that's not included in our assumptions. We do assume that the transit way corridors that are part of Metropolitan Council's long-range transit plan would be operational by 2040 but a high speed rail north past Forest Lake is not among those assumptions.

**Morris:** even though it's in federal legislation and proposed... the time keeps getting moved out but you know we're looking at supposedly 2015 at this point but... It is definitely something that's in the works and might consider being looked at.

**Graham:** Again, the baseline policy assumption is that in 2040 we have the transportation network that is included as part of the Council's current transportation plan.

**Colvin Roy:** You mention that this is a work in progress and the forecast is going to be adopted did you say, or a basis for council approval in the summer of 2015? Did I get the timing right?

**Graham:** Yes, we are expecting to bring a set of local forecasts to our Council for approval in April 2014. This would be as part of the Thrive MSP 2040 plan. But there would still be the potential for local forecast changes to occur over the course of regional systems planning, so we would have another version and another round of forecast revisions in the second half of 2015. And this would be the Council's action to approve the content of system statements that would be issued in fall of 2015.

**Colvin Roy:** So my question is what sort of factors can you anticipate now that might make a change to this before 2014 – won't go all the way out to the 2015 second version but you're working right now towards something for approval in 2014 and you said it's still a work in progress, so I'm asking you to guess what kind of factors should we be looking at as potential changes.

**Graham:** We are... our modeling is being revised and specifically some of the things that we're already looking at are better capturing of recent development and greenfield areas, areas that are without prior development history..

**Colvin Roy:** does that mean more information when you say better capturing of recent development, greenfields...

**Graham:** Yes. Models do have difficulty projecting or forecasting what will happen when there's no previous history. And so that's a... that's one of the.. cloudy areas is if we have parts of the region that are just now starting to gear up with new development ... some of the assumptions that we make for those areas should be -- we are asking cities to help us verify our assumptions in those areas. Another change that we're making is we have made some slight corrections to land consumption rates in fully developed areas. This was something that we discovered in the last month that we had land consumption rates that were slightly off. We are working to verify our pro formas of what are the building and development costs for different parts of the region. Since it is a real estate market model that we're using the model is responsive to the spatial distribution of building costs and building values. The model assumes that developers will add real estate supply in the places that are most profitable, profitable because people would value being there or firms would value being there. So we are looking at the pro forma of what it costs to develop in different parts of the region. And that should have some impact on how the model distributes the half million household growth.

**Colvin Roy:** thank you. It seems to me that whatever our area drinking water supply policy ends up being, over time could have some impact on that.

**Robinson:** How accurate are you on your forecasting?

**Graham:** How accurate?

**Robinson:** Yeah.

**Graham:** It remains to be seen. I can tell you that in the past the Metropolitan Council's done very well with region level forecasts, if you go back to the forecast that was issued in 1978 forecasting what our population would be in 2000-2010, that forecast was pretty good within 5%. Local forecasting has more moving parts and we expect that there could be error but it's difficult to measure because forecasts, your target it something that hasn't happened yet.

**Furlong:** Just a couple of questions. You said you continue to work with the local government units with the cities and counties. How do you deal with differences if there are differences in outlook and assumptions?

**Graham:** I'd say at this point where we've put the preliminary local forecasts out for comment – these are forecasts that haven't been approved by the Council yet, they are in a draft state – we're taking the comments we get from cities as advisory to us. We are... ideally; we could come up with a forecast set that everyone would say "yes, these are the expectations of the future." There probably will be differences of opinion though. We find that some cities would like to have very high forecasts for reasons having to do with future cost benefit analyses and future infrastructure planning. But how do we deal with the differences of opinion. Right now the comments that we're getting from cities are – we're taking them as advisory comments. We are tweaking how the model spatially projects that future growth. I think there is a consensus among a lot of the developing communities that there is some systematic under-projection in our preliminary forecast set and so we're trying to find ways that would reasonably and fairly bring growth to those developing areas within the forecast model scheme. Beyond the preliminary forecasts, once we get into having a forecast set that's been approved by the Council, beyond that point, our interactions with the cities are, you could call them negotiations. We would... if cities want an adopted forecast changed, they can formally present to us the reasons why those forecasts would be changed and, historically, the Council has changed forecasts in response to changes in comprehensive plans. That's been the main way that we have maintained the forecast set over time.

**Furlong:** Thank you. Another question. With regard to the forecasts, and the population growth expected in different parts of the region, have you made any estimates or assumption with regard to the number of residents per household on average across the region as increasing, decreasing, staying the same.

**Graham:** Yes. This is a part of the demographic aspect of our modeling; we have a demographic sub model that we use. Because of the aging of the population, and a larger share of households being senior citizens, which are typically one and two person households, the overall mix of household's looks like there will be more smaller households. We do segment the market demand that is the households into different market segments that have their own preference structures, households at different places in the life cycle have different housing needs, certain age groups prefer single housing more than apartments, and vice versa. And so we do include that information as we are modeling where households will locate depending on the type of place, the type of community and the type of housing in that community, we do bring in those demographic assumptions about what is the average household size for the market segments that are being attracted to these places.

**Furlong:** Thank you and I think that leads in and maybe you started commenting on the other part of my question is the assumption with regard to the types of housing in the market you're looking at about I think your number was 31% population growth in the region, so is there a trend toward different, is there going to be based on your forecast estimates right now a change in the mix of types of houses, whether it's single family, detached, attached, multi-tenant, high-density and as I guess I'm well let me just ask the question – is there a change expected in the types of houses that will be developed over the course of the projection period.

**Graham:** I think it is evident from the presentation I've given that we expect more households in medium density and high density neighborhoods of the region and I think it's not a far leap to then conclude that housing will be townhomes or apartments or condominiums. We haven't explicitly put together a set of how many housing units of different types. That is something that we are working on but we don't feel it's ready yet. The types of housing are going to be informed by our modeling of what are the housing preferences of future demographic segments. And so with the fast growth of the senior population and also the populations of color we do expect there will be more demand for urban locations, apartment and condo and townhome products and it's difficult to know whether there will be increasing demand for single family housing products. We're still puzzling that out.

**Furlong:** In that, your comments with regard to the types of houses makes sense, especially with the projected growth in the Minneapolis/St. Paul core region there's obviously not much in the way of undeveloped land in those cities so they'd have to go... but I think from our standpoint of looking at water demand it would seem we can look at this that the demand for water usage in a high density or medium density household is going to be less typically than that of a single family residential home, and it may be dramatically less when you add in lawn watering and irrigation systems and stuff like that so I'm assuming that staff is looking at those same assumptions that the average use per population or on a per capita basis is now maybe different and if the housing type has changed even less in the future on a per capita basis so we may not see the same demand for growth and water usage all things else being equal and I know this is pretty complicated process so I... that was one of the things. The other comment that I'll make and it's just an observation... if you could pull up bar chart showing the growth and population – if my math is correct, when I look at the ages 25-64 which has historically been the working population age group, over the course of the projection period it's flipping from being more than, making it more than 50% of the total population to making it less than 50% of the total population in 2040. Maybe that doesn't affect as much water usage as we're concerned with but certainly other factors going on I something to consider when you, we might get to the point where over half of the population forecasts in the region would be in the non-working age group. Again, maybe not an affect from water standpoint but from an observation standpoint may have other factors as well.

## **2040 GROUNDWATER LEVELS AND CONDITIONS – METRO MODEL RESULTS**

Ali Elhassan, Manager of Water Supply Planning, confirmed that the model has shown that the 2040 preliminary forecasts do not change the Council's conclusion that the region's current approach to water supply is not sustainable, aquifers are being depleted, and lakes, streams and wetlands are being damaged. Under projected 2040 groundwater pumping conditions, similar to 2030 projected pumping conditions reported in the Master Plan, modeled groundwater levels have declined as much as 40 feet, roughly one foot/year. The committee reviewed model-projected draw downs for the Prairie du Chien - Jordan and Tunnel City- Wonewoc aquifers. The model does not include private well information, and also does not take into account water quality. Staff will look into including private well data in the model. The metro model results make it clear that a different approach is needed if a sustainable water supply is to be maintained for expected population growth and future generations.

*Transcript of committee discussion follows.*

**Schneider:** Clarification on two slides – metro region 2030 / 3.7 million, 2040 3.7 million. Redistributed population from suburban areas to urban cores?

**Elhassen:** yes

**Schneider:** Graham's presentation showed 2030 pop growth was not 3.7 million, but 3.7 in 2040. Disconnect. Need consistency between the different areas of the council.

**Graham:** 2030 is over 3.4 million.

**Moore:** the 3.7 for 2030 was the previous development framework forecast. The new forecast is somewhat less than the 3.7. We're working on re-doing the forecast now.

**Furlong:** You mentioned and pointed out the draft schedules for the Prairie du Chine and the Wonewoc - you explained or pointed out that the blue bridge coming across Mpls/St Paul – what were the changes that drove that again – this is groundwater right? So what is the explanation for why that's showing up under the new draft maps as opposed to not being there under the 2030?

**Elhassen:** more population are moving to the communities in the west. And most of those communities are using groundwater.

**Furlong:** so it's the demand of the population in western areas that are affecting the groundwater under MSP?

**Elhassen:** correct.

**Furlong:** and you presented two aquifers here the Prairie du Chien... and... How many aquifers are underneath the region?

**Elhassen:** we have 9 layers

**Furlong:** I think probably the Prairie du Chien... is the most used?

**Elhassen:** Yes.

**Furlong:** in terms of capacity of the different aquifers, part of the Mt. Simon obviously, the Prairie du Chien... – how do they compare in terms of the capacity?

**Elhassen:** in general, Prairie du Chien is the most productive aquifer.

**Schurbon:** Model does not include private wells. If we were to incorporate that, would we see a lot more blue in the outlying areas on these maps?

**Elhassen:** one of the problems that we are dealing with and I think all the agencies are dealing with is that they don't know how much exactly the private well owners are using. We know the number, we know that we have 55,000 permitted private wells in the metro area, but we don't know how much they are taking. We can make some assumptions, but we are not counting it at this point.

**Schneider:** 2 questions. Do we know what aquifer they typically are tapping?

**Elhassen:** yes.

**Schneider:** Do we know what the majority of them are?

**Elhassen:** glacial and Prairie du Chien ...

**Schneider:** secondly, your model takes into account volume of water, what about quality as far as known contamination areas.

**Elhassen:** no. this is a groundwater flow model, but we can add that component of quality.

**Schneider:** which would further complicate issues, obviously.

**Elhassen:** that's true.

**Schurbon:** Just one last kind of follow up comment I think you've got a good point that these private wells aren't necessarily all using the same aquifers in some of the municipalities, and the amount of information that's gathered on that and available is growing. I think over time we should really make an effort to include that as for instance in Anoka county there's some incredible information on the depth of all of these wells and if we would take those and simply count them up and apply some household average uses we could perhaps get some handle on that.

**Elhassen:** and we could add that. It's just that we want to make sure that our assumptions are good assumptions. But it's a very interesting comment I heard in a public meeting recently when we said that private well owners, we have about 55,000 unpermitted, that means that DNR doesn't have any regulation on them for the appropriation or anything like that. And DNR provides permits whenever you are pumping 10,000 gallons/day or 1,000,000 gallons per year. So if you are pumping 9,000 gallons you are unpermitted, you don't need a permit, you can still pump. And someone made this comment, "okay, if it's 9,000 and we have 50,000 that's about 450,000,000 gallons a day." That's a worst case scenario. I know for sure private well owners are not using that, but this person he was just putting it in simple terms.

**Rummel:** so Ali, Jamie sort of anticipated my question – will we ever put that data into our model?

**Elhassen:** I will check with staff and consultant and come back to committee with some ideas that we will like to incorporate in our model.

**Rummel:** any expectation that the permitting of private wells may scale down to more granular levels that we have more accurate information on water use?

**Elhassen:** the issue of private well owners was a big discussion this year in the legislative session and there was a bill or two prepared to go forward for management of private well pumping and both of them failed. I expect that they will come back in the future because I understand that there are some legislators who are really interested in putting some control on the private well owners. At this point it's not a high priority in many agencies but it could be in the future.

## **CITY OF MINNEAPOLIS PROPOSED NEW WELLS**

Bernie Bullert, Director, Minneapolis Water Treatment and Distribution Services, and Dale Folen, Engineer, Minneapolis Public Works Department, discussed the Minneapolis water system goals, explaining that planning groundwater supply would provide system resiliency and reduce risk. They reviewed ground water resources in Minnesota. Resource limitations include aquifer capacity, well interference, and contamination potential. Sites being considered for wells are: Fridley campus, public areas near the Columbia Heights campus, north Minneapolis open spaces, and southwest pump station. Well drilling costs and yields were reviewed. Of the seven alternatives reviewed, alternatives

five, six and seven (north Minneapolis, Fridley campus, and Prairie du Chien) are the favored alternatives and the least costly (approximately \$40-45 million over several years). More detailed investigations will be conducted and strategy will be adjusted as each well capacity is known.

*Transcript of committee discussion follows.*

**Colvin Roy:** Remind everybody that back on slide 6 where Dale laid out the project goals and that the groundwater supply is 50 million gallons per day – that would be an emergency basis. This is a backup plan. He did mention considering a small volume of regular use and that's something that will be in discussion with the DNR of course.

**Folen:** That is the main thing. Our goal would be that we want to be running these wells at least a few hours a day maybe it would be one well a day or some kind of regular use so we know the equipment is going to run but other than that... for us it's actually more expensive to treat the groundwater because of the cost of softening that water, it's generally harder than what we're seeing. Nonetheless we just have to work out the details. Our goal would be really minimal use to make sure things are running as the primary goal and then it would be for emergency uses.

**Robinson:** On your alternates 5, 6, and 7, you mention about the Mt Simon Hinckley as kind of being a back up to this plan. Do you take all the water you want or is there a limit?

**Folen:** There is a limit. If we go back out with a upper yield the Mt. Simon was – if you add the two sides of the river, there's maybe somewhere between the high teens and the low 20 mgd range from the Mt. Simon. There is a state law restricting the Mt. Simon use if there is no other alternative so we've had some discussions early on with the DNR that we may go to the effort of trying to drill wells into the Tunnel City Wonewoc and if they're effective we would use them, but if for some reason they dry up which has happened in some of the southern suburbs or southwest suburbs then we would have that well intended to be able to drill further into the Mt. Simon. So that's kind of been our philosophy. Try the Tunnel City Wonewoc first and then use that as a backup.

**Schneider:** Just one quick question. So, in using groundwater in an emergency situation for resiliency, one of the things obviously if the treatment plant is impacted somehow, is this water that you could send right to Columbia Heights and go to the membrane rather than send it in through the softening if need be?

**Folen:** Yes, that is the case. We have our softening plant and then we have our two filtration plants. So, through the filtration plant, that's a possibility. This alternative in the Columbia Heights site actually includes a low cost method of doing radium removal, so that's a possibility of just using the filters. In the extreme case, even if the filter plant was down, we're looking at the possibility of the Prairie du Chien... other than having iron in that water it could be sent straight to the distribution system. So, we'd have to do something to minimize the red water complaints from that because that would be more scary for people to see brown water coming out of their faucets than having an invisible contamination so to speak, but those are some of the issues that we want to work out in these first couple of years to make that plan to be able to use in whatever piece fails or is damaged we want to maximize our ability to recover.

**Vollbrecht:** Are you looking at multiple options as far as taking it straight to the distribution system versus running multiple, you kind of look at them like raw water lines, from the north, south, east, west to the facility versus both options.

**Folen:** Our goal... the first bullet here is... we've already started working out the idea of how to make sure that we have our various connection points, how much can go up to our Columbia Heights site filter versus our Fridley site, so we have some initial thoughts on these, but we really want to pin down in the next – now that we have the knowledge that we have – now the next step is to figure out how we absolutely maximize our recovery modes through this process.

**Vollbrecht:** My assumption is, you said that JWC has their own backup system. Are you looking to provide backup for them also or?

**Folen:** Negotiations to date is that they would rather do it themselves. So that's one of the reasons why we're able to cut back to 50 mgd as our goal for capacity.

**Robinson:** Will the new mayor be on board with this?

**Schurbon:** A couple of comments. I guess, using this as an emergency backup, I'm pretty skeptical, and piggybacking kind of on what you're saying is that it may be very much the intention of this council and this staff that this will be a backup supply, but that is so subject to change, and probably multiple changes in council over the years and I'm really concerned. You make it a very good point about the economic value of this water and the same is true for the surrounding communities, and so I think about communities like Fridley and Blaine which is growing very quickly and experiencing some difficulty with water sources and new wells, and this will take out an enormous amount of water potentially if it were used on a regular basis, and I'm wondering if that becomes less than available to these other communities. You know, if it's sort of claimed first by one city then does the city of Blaine then suffer. I'm concerned about that on a big picture scale.

**Folen:** And that is a big political question. I think that's a real question and something that needs to be negotiated with the DNR and groups like this. Right now we have the technical findings to give us our ideas, but that's issues that need to be worked out over time.

**Schurbon:** I understand that there's bonding money that's being sought for this. If bonding money is not approved, is there still action?

**Folen:** Technically we're asking for grant money only. Right now we have budgeted out of our revenue monies – water revenues – \$1.5 million for the first two years, \$3 million for the next two, so our intent, what we've asked for in the State grant is the amount to match what we are already planning on spending whether we get the grant or not. So the State grant would be a way for us to accelerate the process financially. So we would be able to do twice as much work in the same time period.

**Colvin Roy:** The amount we're talking about setting aside isn't going to actually accomplish a well, as I understand it. This is the further investigation that's necessary.

**Furlong:** I have a few questions. Just to clarify the \$19 million being sought or the \$9.5 million that's currently programmed plus the additional request from the state – that's for planning purposes, there are no wells incorporated into any of that money?

**Folen:** The answer is in the back of your handout (our application to the state). The first, in the 2014 two-year period – it's actually after the slide show. \$1.5 million is spent in 2014-15 and then I think we said \$3 million in 2016-17. So in that first \$1.5 million we would probably start doing some construction but the first year, the first half million-million would be kind of design phase and doing a lot of planning, additional groundwater modeling, things like that.

**Furlong:** Okay, thank you. That's helpful. I think the, you know I'm, I guess overall from a planning standpoint and looking at backup sources makes a lot of sense. The residents and businesses that you mentioned obviously, all of us in our own cities and constituent's reliability of water is very important, so I think that makes sense. I think Jamie's comments about the additional demand are some of my concerns as well. And then compounded on that from a funding standpoint if through the state, whether by grants or geo bonds or whatever means half the system or half of this backup is insurance policy is funded by state then not only is there competing demand but being funded by those that might be affected as well so, you know with our system the beneficiaries, the users, whether it's current users or people that hook up to the system they're the ones that pay for the system. And so I think from a funding standpoint I'm still, you know your concerns about the demand and I guess the question is in periods of when it would be used as a backup that's when the water is running low because of drought there maybe excess demand on the aquifers already so that raises some concern and then, you know, who pays for it. I think as much as there's economic benefit to the region and to the state, clearly the businesses and all the people, the users, that are listed there, they're 100% affected. And just with our businesses in our town and residents we're paying for our system I guess I'm trying to figure out why they should also pay for half of this insurance policy. And I don't know if that's a question you want to respond to but that's obviously a policy question but it's one that as I look at it, understand, fully understand and appreciate and from a planning standpoint looking at how can we provide reliable water. All of us do the same thing in our cities and counties and everywhere. So I'm not criticizing the look at, do have the concerns that you mentioned about competing demand even as a backup but also how things can change over time and then also the funding I'm struggling and concerned about sources of funding.

**Rummel:** Good points. I will take one more question and then we have one more item on the agenda.

**Schneider:** Not a question. Really just a comment to react to Jamie's concerns and Furlong's as well. At St. Paul Regional Water Services we did just recently complete a ten well field backup and I concur with what Minneapolis is trying to do and their contention that it's a source we don't like to use. We don't want to use it ever certainly at its full capacity. We do turn on one once in awhile just to keep things operational because it is more expensive to treat. But we did feel it was a responsibility to everybody that we provide water for to have a redundant supply in case our existing supply became unusable via contamination for a short period of time. There is drought concern and that kind of thing too, but for the most part it was done as a result of unintentional impacts to our watershed area that would preclude us from using that source of water. We had to have some type of backup supply, so we did invest in it. I won't go into the funding part of it; we funded it ourselves, but it is something that, it's just a responsible act by any water provider to have that redundancy. But there were a lot of approvals necessary. We had to go to legislature and get the approval for this redundant emergency backup supply. It's not just the Met Council or the DNR that has to approve it; it has to go all the way to State Legislature to get approved.

**Furlong:** What's the comparative size of capacity of the two systems in Minneapolis and Saint Paul? MGD, average use, average capacity.

**Schneider:** Our goal was to get our average capacity in a backup system, so about 42 MG capacity in our well field and our average use is about 43 MGD

**Folen:** Minneapolis is in the range of 55 MGD so we're a little bit bigger, but we're in the 10-20 % larger in capacity on average use.

#### **UPDATE OF WATER SUPPLY UNIT WORK PLAN FOR 2013-2015**

Ali Elhassan informed the committee that four consultants have been selected to work on projects supported by the State Fiscal Year 2013-2015 Clean Water Fund appropriation. The report to the legislature is due January 15, 2014.

#### **ADJOURNMENT**

Business completed, the meeting adjourned at 11:57 a.m.

Susan Harder  
Recording Secretary