

**EASTERN VIRGINIA GROUNDWATER MANAGEMENT
ADVISORY COMMITTEE**

WORK GROUP #1 – ALTERNATIVE SOURCES OF SUPPLY

MEETING NOTES – MEETING #3 - FINAL

TUESDAY, OCTOBER 27, 2015

DEQ PIEDMONT REGIONAL OFFICE – TRAINING ROOM

Meeting Attendees

EVGMAC – WORKGROUP #1	
Richard Costello – VA Home Builders	Mike Kearns – Sussex Service Authority
Larry Dame – New Kent County	Eric Lassalle – Smithfield Foods, Inc. for Bill Gill
Kyle Duffy – International Paper	Kristen Lentz – City of Norfolk
Judy Dunscomb – The Nature Conservancy	Craig Maples – City of Chesapeake
Jason Early – Consulting Hydro-Geologist	Dave Morris – City of Newport News
Katie Frazier – VA Agribusiness Council	Donald Rice – Newport News Water Works
Bill Gill – Smithfield Foods	Paul Rogers, Jr. – Farmer – Production Agriculture
Carole Hamner – WestRock	Erik Rosenfeldt – Hazen and Sawyer
Skip Harper – VA Department of Housing and Community Development – State Building Codes Office	Mark Sauer – DEQ – Tidewater Regional Office
Steve Herzog – Hanover County	Thomas Swartzwelder – King and Queen County
Bryan Hill – James City County	Chris Thomas – King George County SA
Dan Holloway – CH2M for Jay Bernas – Hampton Roads PDC	Brett Vassey – VA Manufacturers Association
Brent Hutchinson – Aqua Virginia for Ram Natarajan	Mike Vergakis – James City County
David Jurgens – City of Chesapeake	John Voorhees – Cardno for Gregg Jones
Whitney Katchmark – Hampton Roads PDC	

EVGMAC – WORKGROUP #1 – STATE AGENCIES	
John Aulbach – VDH - ODW	Scott Kudlas - DEQ
Allen Knapp – VDH - OEHS	John Loftus – VA Economic Development Partnership

NOTE: Advisory Committee Members NOT in attendance: Jay Bernas – Hampton Roads PDC; Bill Gill – Smithfield Foods; Jeff Gregson – VA Well Drillers Association; Gregg Jones – Cardno; Ram Natarajan – Aqua Virginia; Wanda Thornton – Eastern Shore Groundwater Committee

INTERESTED PARTIES ATTENDING MEETING	
Robert Crockett – City of Chesapeake/Advantus Strategies	Jeff Scarano – Brown and Caldwell
Barrett Hardiman – Luck Companies	Gina Shaw – City of Norfolk – Department of Utilities
Jamie Mitchell – Hampton Roads Sanitation District	Wilmer Stoneman – Farm Bureau
Chris Pomeroy – Western Tidewater Water Authority	Shannon Varner – Troutman Sanders/Mission H2O
Doug Powell – James City Service Authority	Andrea Wortzel – Troutman Sanders/Mission H2O

SUPPORT STAFF ATTENDING MEETING	
Elizabeth Andrews - DEQ	Craig Nicol - DEQ
Sharon Baxter - DEQ	Bill Norris - DEQ
Brandon Bull - DEQ	Mark Rubin – VA Center for Consensus Building

MEETING HANDOUTS:

- A. Draft Meeting Agenda;**
 - B. List of EVGMAC Members and Work Groups #1; #2A; & #2B Members;**
 - C. Balance of Meeting Schedule;**
 - D. Draft Meeting Notes – 2nd Meeting – October 15, 2015**
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1. Welcome & Introductions (Mark Rubin – Meeting Facilitator)

Mark Rubin, Executive Director of the Virginia Center for Consensus Building at VCU, opened the meeting and welcomed everyone to the meeting.

He asked for introductions of those in attendance and asked for the organizations that they represented.

2. Meeting Notes – 2nd Meeting of Work Group #1 – October 15, 2015 (Bill Norris)

The draft meeting notes from the October 15, 2015 meeting of Work Group #1 were distributed with the meeting handouts.

3. Review of Agenda; General Sense of the Process and Introductory Comments (Mark Rubin):

Mark Rubin reviewed the agenda for the meeting and the plan for conducting the meeting and then went through some general meeting and location logistics.

4. Eastern Virginia Groundwater Alternatives Supply Sub-Committee Definition of "Options" (Eric Rosenfeldt – Hazen and Sawyer):

Eric Rosenfeldt introduced a document that he had prepared in looking at the options that had been discussed during the "Alternative Sources of Supply" workgroup meetings. He noted that he had used the meeting notes as the basis for development of this document and that he had researched sources of definitions for the various options that had been discussed. He noted that this was not complete but might serve as a good starting point to refine the "options" that the workgroup has been discussing. Mark Rubin noted that we would be using this document as a reference in later discussions of the workgroup.

Copies of the "Definition of Options" document were distributed to the workgroup.

ACTION ITEM: A copy of the document will be posted on the DEQ EVGMAC Webpage.

5. Communication with Members of the Advisory Committee:

Mark Rubin noted that a number of the members of this group are connected with members of the Advisory Group and because of those connections we are hoping that you are communicating with those individuals and keeping them informed of this workgroup's discussions. The Advisory Committee meets again on November 19th but it is a good idea to the extent that you as members of this workgroup can just communicate and keep those "decision makers" abreast of what is going on so that when we meet with them on the 19th that we are just not hitting them with a whole lot of information. We have three workgroups currently meeting and discussing various items which we will be presenting to the main group during their three hour meeting on the 19th – so we will have a lot of ground to cover in a short time period. We will do a lot to prepare them for the meeting but anything that you can do to relay any information to your contacts in the main committee would be very helpful and appreciated. It was noted that a number of the workgroup members had already been sharing information with the Advisory Committee.

6. Presentation #1 – Groundwater Conservation – Incentive Program Legislation – Western Tidewater Water Authority Proposal (Chris Pomeroy – Western Virginia Tidewater Water Authority):

Chris Pomeroy, representing the Western Virginia Tidewater Water Authority provided an overview of a Legislative Proposal related to Groundwater Conservation – Incentive Program Legislation. (A copy of the presentation will be uploaded to DEQ's Eastern Virginia Groundwater Management Advisory Committee webpage.) He distributed a copy of the draft legislation for consideration by the workgroup. (A copy of the proposed legislation will be uploaded to DEQ's Eastern Virginia Groundwater Management Advisory Committee webpage.)

Chris noted that there had been recent articles about Forbes' ratings as to how Virginia ranks in the Nations as a place to do business. For a number of years, Virginia has been right at the top, Number 1, occasionally Number 2 then back to Number 1. Unfortunately, we have slipped to Number 7. What is holding us even at the Number 7 ranking is the fact that for "Regulatory Climate" Virginia remains the single best state in the Country within which to do business. This group has been convened so that we can protect that position and not help it erode. That is the intent of the concept being presented. He noted that the Western Tidewater Water Authority (WTWA) is an authority that is essentially a partnership between the City of Suffolk and Isle of Wight County that came out of the State's emphasis on regional approaches to water supply planning and infrastructure. (Copies of the presentation were distributed to the group.)

Chris noted that there were 3 Timing Issues that are all on different tracks that need to be taken into consideration. They are:

- The "Study Track" of August 2017;
- The "Permitting Track" which is a little indefinite but is likely 2016; &
- If the "Permitting Track" is 2016 then this proposal is a permitting concept that is a "2016 Legislative Track" issue

7. Questions/Answers (Workgroup):

The following questions were raised and discussed following the presentation:

- RE: The "Incentive Model" Approach: Is WTWA wed to the 50% reduction figure? Is there an opportunity to use a tiered approach? From an industrial point of view, 10% of some facilities would be a significant impact compared to 50% of others. Could this concept accept a tiered approach? It probably could. Just to clarify – this concept was developed by the Western Tidewater Water Authority and the thought process was that the 50% number roughly corresponds with DEQ's numbers at this time.
- RE: Section F of the Bill: Concern over the precedent with other forms of regulation with an "all of nothing" approach. Production is never consistent in the Industrial arena so there could be a "09" event again in just one industry and not the whole economy and that could open it up for DEQ to come in and pull that allocation. That approach would be a nonstarter. There would need to be something that accepts the realities of the economy that are different for different manufacturing and industrial operations. The allocation is what a lot of folks like by. We would call this "capacity confiscation" – you build a plant for 50 years based on a certain production capacity but if any of the variables change then you have reduced that production capacity. This is one of the "red flags" for manufacturing and industrial operations. This concept was drawn primarily from a municipal water supplier perspective so it may need some attention from the other impacted entities.
- RE: Impact on New Permittees: How do you envision this impacting new permittees? Because this is a reduction concept we were really focusing on existing permittees. The challenge is that it does establish certainty for existing users but it doesn't help us address our future problem, which is that new users are going to need offsets in the future in order to develop or have alternative sources. One of the primary purposes of this group was to address looking forward how to deal with the current "over allocation" condition. We have to cut back in order to get to a baseline that allows people to keep some useful allocation amount.
- RE: Legislation: This is legislation essentially based on the current system. Is it your judgment that the Legislature won't have an appetite to create something modeled on HRSD or the Eastern Virginia Regional Groundwater Management District? Why is it build on the current system instead of stepping out to look at other options? The Bill is not an attempt to be the "end all and be all" – what it deals with is the very simple, practical reality that DEQ could issue permits for Calendar Year 2016 – Are there other options that might not be available until after this study is completed in 2017? This is essential a short-term solution to address permits that potentially may be issued in 2016. It only focuses on existing permits.

8. Follow-Up Discussions (Mark Rubin/Scott Kudlas/Workgroup):

Mark Rubin summarized that it appears that the reason for this legislative proposal is to address the assumption that DEQ will be issuing permits in 2016 – if that comes about, in exchange for the

reductions you would like to have some certainty. Scott Kudlas noted that when the legislation creating the Advisory Committee and all of its subcommittees (workgroups) was being debated and negotiated in the General Assembly, one of DEQ's key points was that we wanted to reserve the right to do what we are authorized to do under statute. So if DEQ felt it was necessary to maintain a productive conversation by having the ability to issue those draft permits that was a reasonable goal. We have said that at this point that all of these permits are expired. Some have been expired for a long time. The statute doesn't currently allow DEQ to extend the terms of the permits beyond a ten year period. So from our perspective, if the issue is to get through the Advisory Committee process and find a "better mouse trap" then maybe this proposal is over-kill. Maybe what we really need to be talking about is how to get the "low-hanging fruit" that may be available while still talking through this process to figure out if there is a "better mouse trap". It seems that there may be a number of different ways to do that and this may be one possible way, but it seems like there is an awful lot of certainty to be gotten for that 2 year period of space to see if there is a better idea. We don't have any intention of issuing draft permits on January 1st. Our intent is to issue those permits during 2016. As long as conversations are going on with this group that are productive and getting us farther along the line towards a workable solution for all parties concerned, then we have the flexibility to delay the issuance of those permits. There are also other tools that are available to DEQ, such as the use of special exceptions or other things that could be put in place during the window within which this group is operating. There are a lot of different options available. There is still a lot for us to talk about and discuss.

Mark asked the group to identify other "interests" that need to be considered. Prior to the identification of other areas of interest, the following items were discussed:

- Chris Pomeroy has brought a proposal from the Western Tidewater Water Authority and shared it with the group. He clearly has an interest in taking the proposal to the General Assembly. He is seeking input to the process. DEQ has indicated a willingness to think about the proposal and maybe some other implications and different approaches to address the concerns. The task for this workgroup is to take a look at the proposal and see if there is a way to accommodate all of the areas of interests. Chris is a free-actor and can move ahead with what he is going to do at the General Assembly. The notion would be is there something else that we might be able to work out here or is this proposal the "greatest thing since sliced bread"?
- So we are looking at 15 years to come up with a 50% reduction through conservation and other methods. The proposal says that DEQ would have the authority to provide a transition period where you would have up to 15 years. The assumption is that the department would have the authority to exercise that option on a case-by-case basis. There may be some near-term "low-hanging fruit" that can provide the reduction or it may take 12 to 15 years achieve the required reduction percentage. The legislation looks at DEQ's current targeted reductions and their existing permit power to issue permits in 2016 as part of the timing assumptions.
- Every business and every locality is looking for growth. If you have a set amount over a 20 year period and you cut back so you are just meeting that amount there is no room for growth. This locks a business or a locality into a situation where it is very difficult to grow.

- Costs over time do not go down – they do go up. Politically this may be very easy to sell but down the road when things have to be done to meet the reductions the costs will be way up. Concern with long term impact.
- Since this is a "watershed solution" – some of our bigger industries are in a consolidation phase so it is within the realm of possibility that with two facilities that one would close and the other would get partial capacity from the other – so we want to be able to share capacity between the two facilities – they really don't operate independently.
- When was the last time that DEQ issued a permit for a new source that came off of groundwater? Not sure but it would have been on a small scale – it would not have been a viable municipal supply – certainly not at the scale of the top 10%. The consequence of having a minimum over that period of time is that you are agreeing to lock things up and you are committing to finding alternative sources of supply or offsets for future growth – that is the consequence of this approach. DEQ doesn't have any particular concerns with this concept of a transition period or with providing incentives. When we have been talking to the permittees about how to implement the kinds of proposed reductions that are being considered, we have talked in terms of two permit terms – the first permit term get what you can that is easy to do within the first 10 years and in the meantime work on what this implementation plan is for anything that has any significant capital expenditures so that we can cross into the next permit term and have a reasonable window within which to implement it. What is being proposed on the "transition" side is not terrible inconsistent with that. It's when you lock in over that window that really has an impact on those users that haven't been identified in that "Top 10" and anybody new that comes along.
- It is clear that there will need to be a transition period no matter what. It appears that DEQ has a transition program in its future.
- There is going to be "sticker shock" in the small localities.
- From the state's perspective, we certainly appreciate this need for certainty. It is not the permit term that is the issue it is the matter of how do you immortalize the certainty? The longer term certainty piece needs to be a part of this larger discussion about the future and what the implications are of that minimum certainty. The other concern that the state has is that when we look at a 20 to 35 year proposal in addition to the up to 15 year transition period – we currently receive our revenues based on a 10 year permit term – those revenues come in at less than 10% of the costs for staffing the program – we repeatedly hear from permittees that they want faster permits; better service; more monitoring; more technical work; want the model maintained on a more frequent basis so that we always have the benefit of the most recent science – where does that money come from? If we are losing 3 opportunities to get revenue then that needs to be addressed. One issue is that the revenues are too small already and we would be giving up two opportunities to obtain even that small source of revenue.
- Concerns were raised over having a 25 to 30 year permit horizon – an example of the on-site sewage systems was given.

- A concern was noted that it doesn't appear that having this proposal being promoted at this time doesn't really benefit the stakeholder process.
- It was suggested that the real issue related to timing is not this proposed piece of legislation but the permit timing. The premise of the bill is that the next permit ought to have more certainty and longer horizons with it.
- The bill attempts to work with DEQ's number in looking at the 50% reduction figure.
- Technological improvements/alternatives are currently reviewed and approved on a case-by-case basis. Injection has been approved for recharge in one case.
- Do we know the impact of the improvements of stormwater infrastructure on this problem? Are the improvements impacting the available groundwater? The USGS believes that may be the case for the superficial aquifer/the water table aquifer but not to the confined system.

Mark noted that the water utility "interests" that were noted in Chris' presentation included the first 5 items identified below. During discussions by the group additional items of "interests" were identified and are included below:

- Long term aquifer protection;
- Value from existing infrastructure/investments;
- Time to make any needed transition;
- Regulatory certainty for planning and investment;
- Access to EVGMAC Study solutions
- Flexibility for growth is needed;
- There is a need to have a "guaranteed minimum" (the proposal includes the intent to have a guaranteed minimum);
- Need to have a robust conservation effort;
- Flexibility on target (tiered approach);
- Needs to accommodate business cycles;
- Accommodate new users;
- How to memorialize certainty – process – interest;
- Revenues to run the regulatory process – adequacy;
- How to regulate – keeping of the records for 30 years;
- Sovereignty of government in face of long term permit (reopener clause);
- Effect on supply of groundwater – how does it substantively impact/effect groundwater
- Effect on process

9. Options:

The group discussed possible options that appear to be available based on the previous discussions, these include:

- Proceeding with the WTWA Proposal;

- Delaying the issuance of permits for a period of time;
- Issuing special exceptions to keep people under an instrument during the time we are talking;
- Pursuing something like North Carolina's statute that identifies the allocation with specific milestones and time periods.

Discussions included the following:

- RE: Exceptions: It is basically a certificate issued by the state that allows people, in a situation where their current permit can't be issued for some reason or another, to continue to operate under whatever conditions are stipulated in the certificate. It is a negotiation with the permit holder that DEQ is not going to issue a new permit at this point in time but you can continue to operate under a specified set of conditions.
- RE: Fundamental Question: The fundamental question that the bill raises and the fundamental policy question for this entire process is "Over what time horizons is there "certainty" in the permitting process and the allocation amount? It was suggested that the current 10-year permit term is too short of a certainty period. Certainty is needed.

Mark noted that Chris will be taking the WTWA proposal to the Advisory Committee on November 19th. He asked for the feeling of the workgroup on supporting this proposal or saying anything to the "decision making" committee regarding the proposal. There was some support but not overwhelming support for the proposal.

- It was noted that the draft legislation was probably better than the do nothing (keep the status quo) option.
- It was suggested that nothing should be taken off the table – everything should be looked at as another tool in the tool box.
- Need to be able to look at the other options that may be coming out of the other workgroups.
- There should be a multi-prong approach not one single one in particular.
- Certainty is needed.

10. Break:

11. Presentation #2 – The Role of ASR (Craig Maples – City of Chesapeake Department of Utilities):

Craig Maples with the City of Chesapeake's Department of Utilities provided an overview of the ASR program in the City of Chesapeake. (A copy of the presentation will be uploaded to the DEQ's Eastern Virginia Groundwater Management Advisory Committee webpage.)

He ended his presentation with the following "Lessons Learned":

- Geochemistry impacts can be difficult to anticipate.

- Redundancy is inadequate with only one ASR well.
- Operational best practices are essential for maintaining overall system health (e.g., back-flushing protocol).
- Impractical design considerations can be crippling (e.g., losing a level transducer in the well casing).
- A highly trained technical consultant is essential.

12. Questions and Answers – Discussions:

The following items were discussed by the group regarding the ASR presentation:

- The water that was injected through the ASR process did not show manganese and the groundwater did not show manganese until the water was injected. There was a chemical reaction with the water that was injected and the subsurface materials that caused the manganese to come out of the subsurface material into solution. The geochemistry involved is where all of the "rocket science" comes into play with this process. The literature regarding "injection" indicates that the dissolution of metals (iron, manganese, arsenic) is a very common complication with these types of systems. This was an unanticipated complication to this process.
- During the presentation the figure of 30% rejection from both surface water and groundwater was referenced. Why would there be a rejection amount and what do you do with the rejected water? How do you handle this rejection amount? The RO membrane process is completely separate from where the ASR facility is located. When there is a feed into a RO system you have reject that comes out of the system while product water is traveling across the membrane as permeate – depending on the nature of the water that is being treated – the ionic strength and the osmotic potential that the process has to overcome dictates how much you can operate at in terms of your rejection rate. There is a constant loss of 30% of the brackish water throughput going through the system. Surface water has a less than 30% rejection rate. The rejection water goes into a concentrate pipeline and is discharged.
- RE: Spatial impact: When the rejection water is discharged, how far away from the injection well site is the discharge point? When you are doing the injection all you are doing is reversing the flow. When you inject you increase the head conditions in the aquifer. There are monitoring wells located around the well so that a profile of impacts can be monitored. When you withdraw from the well the monitoring wells help identify the cone of depression that is created. The monitoring wells are located as far away as 3,000 feet from the injection/withdrawal well. The discharge point is located well outside of the monitoring well perimeter.
- The movement of groundwater is very slow but is also dependent on the location of the injection well in the system – the water in a well within the Tidal area moves faster than water in a well in the Piedmont. Slow movement is what we want. Some studies have shown that the

pressure impacts of injection can be fairly far reaching – likely dependent on the change in grade.

- Don't want to have to treat the water twice. The idea with the Chesapeake ASR project is that they want to be able to store the water in the ground and then be able to pull it back out when it is needed. It has been a challenging technical issue that has cost more than originally anticipated.
- What was the permitting process for this project? Started with a UIC permit which evolved into a Permit-by-Rule. They are continuing to report the volumes of water that are injected into the aquifer - the volumes that are stored and they are not having any negative impact on the aquifer. Because it is not an industrial facility no UIC permit is required.
- Are there credits for injection? There are currently no credits available for injection. The withdrawal amount, even though it was of previously injected water was being counted against the City of Chesapeake permit so the process was stopped last year. There should be some credit for this process.

Mark Rubin noted that one of the topics that this group needs to consider when looking at injection as an option is the notion of credits and how they could be allowed/included as part of the permit process.

13. List of Options – Criteria List (Mark Rubin):

Mark Rubin reintroduced the concept of the "criteria list" that had been introduced at the last meeting of the workgroup and asked for the group to consider the list and to identify ways that the list could be refined as a basis for the recommendations to move forward to the Advisory Committee. These were the points by which we would be judging any alternative source by. The list included the following criteria:

Mark Rubin distributed a listing of “criteria” that resulted from the discussions of the group at their September 17th meeting. The group discussed the criteria and made several revisions to the original listing resulting in the following list:

- **Money Issues/Economics/Costs:**
 - Affordability
 - Practicable – available – affordable – feasible
 - Minimize the stranding of existing infrastructure
- **Quality:**
 - Protect public health
 - Consistency of quality
 - Protect the quality and integrity of products that rely on water
 - Assurance of safety to the public
 - Effective waste management from the purification process
- **Supply:**
 - Adequate/Sustainable Supply
 - Optimize demand management where practicable

- Reliability and Volume
- Adequate quantities in the future for both current needs and growth that doesn't damage the system
- **Sustainability:**
 - Insure a balance between the needs of current users with future needs
 - Availability during emergencies
 - Ease of monitoring as to quantity and quality
- **Regulatory Consistency:**
 - Long Term State and federal consistency and certainty
 - Consistency in design standards
 - Consistency in consumption standards
- **Future Growth/Future Concerns:**
 - Regulatory impediments and expectations
 - Look into unregulated sources/unpermitted users
 - Protect the interests of private well users/owners
 - Rural and small locality sensitivities – fairness concerns
 - Allow citizens to build and live where they want – fairness concerns
 - Encourage the development and use of small scale alternatives
 - Think about where to put the water back into the ground, either through water reuse or other (injection)

It was suggested that the three major categories (triple bottom line concept) should be:

- Economic Impacts/Concerns
- Environmental Impacts/Concerns
- Social Impacts/Concerns

14. What do we tell the Advisory Committee on November 19th:

Mark discussed the next step in this process which was to develop materials related to the actions and discussions of this workgroup that the group would like to share with the Advisory Committee. It would be a report on what the group is doing and that once the advisory committee sees that report that they suggest that the workgroup focus more on some other specific area or to concentrate on one of the topics that they have been examining.

In terms of a report format, we would likely include:

- Criteria for each of the workgroup topics;
- A brief summary of the presentations from each of the workgroups; &
- The list of options that each workgroup has looked at during their meetings and what they are planning on looking at in the future.

It was suggested that the group might want to review the meeting notes to see if there were specific items that they would like to be included in their report to the Advisory Group.

Mark noted that staff would be preparing a summary document related to the topics covered by each of the workgroups for distribution to the workgroups so that all of the members of the various workgroups will be aware of what is being looked at by the groups and will be able to see the areas of overlap among the current workgroups. That document will be distributed as soon as it is available.

Mark asked for recommendations as to who should report the findings/summary of this group to the Advisory Committee. It was suggested that Scott Kudlas might be the logical choice to make the presentation. It was also suggested that Mark could also give the presentation. Eric Rosenfeldt also offered to be there to support the presentation.

15. Next Steps – Next Meeting:

Mark asked the group if there was an interest in getting back together again for another meeting during the time period between the Advisory Group meetings on November 19th and December 14th. The work of the Advisory Committee needs to be completed by August of 2017. Also, is anyone available or willing to meet during the General Assembly session? The group was asked to look at their availability during the next several months.

Questions that were raised regarding the groups "next steps" included:

- If the group does not meet until after the General Assembly Session are there things that DEQ staff or some combination of staff and workgroup members can be working on to develop for when the group is able to meet again?
- Is there research that we need to be doing that would be helpful to the group's continued discussions?
- Are there other topics/subjects that you need or want information about?
- Within the State Water Supply Plans one of the categories that were supposed to be included was an identification of "alternative sources of supply" for each of the plan areas. Can that list of alternatives be compiled for consideration by the group?
- Could a map be developed that identifies areas served by existing sources and proposed sources?
- Is there any information regarding estimates of future growth in the regions that might be helpful to these discussions?
- Are we going to see a presentation regarding incorporating "surface water" at some future meeting? Use of surface water as an alternative source not just for irrigation but for water treatment as well.

The issues/topics that were identified during the discussions included the following:

- Quantity and quality;
- Projected demands;

- Map – existing sources/proposed sources – from water supply plans;
- Surface water as alternative source – costs/treatment issues;
- Demand management;
- Residential irrigation;
- Framework for small projects;
- Rainwater Harvesting;
- Grey-water/rainwater reclaiming;
- Stormwater use;
- Reservoirs;
- Aquifer recharge;
- Desalination;
- Trading;
- Converting stormwater BMPs;
- Direct potable reuse – indirect potable reuse;
- Increased use of surface water;
- Alternate use of wetlands;
- HRSD – aquifer storage - focus on long-term – timeline;
- Credit for ASR;
- Funding mechanisms – how do we make the economics work?
- Better understanding of the timeline – demands versus existing sources – when do you get the benefits;
- Demands versus existing sources – what is the timeline?

It was suggested that the workgroup should try to meet again after the Advisory Committee meets on November 19th and before the Advisory Committee's meeting on December 14th.

ACTION ITEM: Staff will develop a Doodle Poll for a meeting to take place during the first 2 weeks of December.

16. Public Comment: No public comment was offered.

17. Meeting Adjournment:

Mark Rubin thanked everyone for their attendance and participation in today's meeting.

The meeting was adjourned at approximately 12:10 P.M.