

**EASTERN VIRGINIA GROUNDWATER MANAGEMENT  
ADVISORY COMMITTEE**

**JOINT MEETING #1**

**WORKGROUP #1 – ALTERNATIVE SOURCES OF SUPPLY  
(MEETING #8)**

**WORKGROUP #2A – ALTERNATIVE MANAGEMENT STRUCTURES  
(MEETING #7)**

**MEETING NOTES – FINAL**

**MONDAY, SEPTEMBER 19, 2016**

**DEQ PIEDMONT REGIONAL OFFICE – TRAINING ROOM**

**9:00 – 12:00**

**Meeting Attendees**

<b>EVGMAC WG #1 &amp; EVGMAC WG #2A</b>	
Elizabeth Andrews – WG#2A - William & Mary	Britt McMillan – WG#1 & WG#2A - ARCADIS
Larry Dame – WG#1 - New Kent County	Jamie Mitchell – WG#1 & WG#2A - Hampton Roads Sanitation District
Jason Early – WG#1 - CARDNO	Doug Powell – WG#1 - James City County
Bill Gill – WG#1 - Smithfield Foods	Nikki Rovner – WG#2A - The Nature Conservancy
Rhea Hale – WG#2A - WestRock	Donald Rice – WG#1 - Newport News Waterworks
Carole Hamner – WG#1 - WestRock	Paul Rogers, Jr. – WG#1 - Farmer – Production Agriculture
David Jurgens – WG#1 - City of Chesapeake	Erik Rosenfeldt – WG#1 - Hazen and Sawyer
Whitney Katchmark – WG#1 & WG#2A - HRPDC	Wilmer Stoneman – WG#2A - VA Farm Bureau
Mike Kearns – WG#1 - Sussex Service Authority	Erika Wettergreen – WG#2A - Marstel-Day
Kristen Lentz – WG#1 - City of Norfolk	Andrea Wortzel – WG#2A - Troutman Sanders/Mission H2O

NOTE: Advisory Committee Members NOT in attendance: Richard Costello – WG#1 - VA Home Builders; Kyle Duffy – WG#1 - International Paper; Judy Dunscomb – WG#1 - The Nature Conservancy; Katie Frazier – WG#1 - VA Agribusiness Council; Jeff Gregson – WG#1 - VA Well Drillers Association; Steve Herzog – WG#1 - Hanover County; Brent Hutchinson – WG#1 & WG#2A - Aqua Virginia; James Maupin – WG#2A - Maupin’s Well Drilling – VWWA; Rebecca Rubin – WG#2A - Marstel-Day; Gina Shaw – WG#1 - City of Norfolk – Department of Utilities; Kurt Stephenson – WG#2A - Virginia Tech; Thomas Swartzwelder – WG#1 - King and Queen County; Chris Thomas – WG#1 - King George County SA; Eric Tucker – WG#2A - City of Norfolk; Brett Vassey – WG#1 - VA Manufacturers Association; Michael Vergakis – WG#1 - James City Service Authority

EVGMAC STATE AGENCIES WG #1 & WG #2A	
Susan Douglas – WG#2A - VDH-ODW	Scott Kudlas – WG#1 & WG#2A - DEQ
Drew Hammond – WG#1 - VDH-ODW	Sandi McNinch – WG#2A - VA Economic Development Partnership

NOTE: EVGMAC WORKGROUP STATE AGENCIES NOT in Attendance: Skip Harper – WG#1 - VA Department of Housing and Community Development – State Building Codes Office; Allan Knapp – WG#1 – VDH; John Loftus – WG#1 - VA Economic Development Partnership; Dwayne Roadcap – WG#2A - VDH-OEHS

INTERESTED PARTIES ATTENDING MEETING	
Ken Bannister – Draper Aden	Matt Wells - WestRock
Jeff Corbin – Restoration Systems	

SUPPORT STAFF ATTENDING MEETING	
Brandon Bull - DEQ	Mark Rubin – VA Center for Consensus Building
Craig Nicol - DEQ	Jutta Schneider - DEQ
Bill Norris - DEQ	

## HANDOUTS:

- **Draft Meeting Agenda (Emailed and Hard Copy at Meeting);**
- **Combined Strategy Matrix (Emailed and Hard Copy at Meeting);**
- **Scorecard (Emailed and Hard Copy at Meeting);**
- **Summary (Emailed and Hard Copy at Meeting);**
- **Revised Strategy Matrix by Andrea Wortzel and Jamie Mitchell (Handed out at the Meeting)**

### 1. Welcome & Opening Comments – 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 this, the first joint meeting of the Eastern Virginia Groundwater Management Advisory Committee Workgroups on Alternative Sources of Supply (WG#1) and Alternative Management Structures (WG#2A).

He asked for introductions of those in attendance.

He noted that the overall goal for today’s meeting is for this group to review the Combined Strategy Matrices and Scoring Sheet and discuss proposed changes to those documents to ultimately arrive at a recommendation to the Advisory Committee for consideration of this work product at their next meeting scheduled for Monday, October 17, 2016. The hope is that today we will be able to go through this matrix and improve it and also to do some scoring and prioritizing based on the information that is available.

### 2. HRSD – SWIFT Project (Mark Rubin & Jamie Mitchell - HRSD):

Mark asked Jamie Mitchell to give a brief summary of the HRSD’s new “SWIFT” initiative. Jamie told the group that the “Sustainable Water Initiative for Tomorrow” (SWIFT) initiative was launched on

Thursday, September 15<sup>th</sup> the national “*Imagine a day without water*” to call attention to an initiative that could help ensure that future generations of Virginia’s will not have to contemplate a shortage of water. SWIFT is an innovative water purification initiative in eastern Virginia designed to ensure a sustainable source of groundwater while addressing environmental challenges such as Chesapeake Bay Restoration, sea level rise and saltwater intrusion. The event was an opportunity for everyone to have a “drink” of water from this Aquifer Recharge Project. She noted that the water met VDH Drinking Water Standards and Primary Health Standards. The reaction from the media and the public appeared to be extremely positive.

### **3. Introduction and Discussion: Combined Strategy Matrices/Score Card (Craig Nicol – DEQ):**

Craig Nicol noted that with two different workgroups working on very similar issues and the need to arrive at some form of recommendation to provide to the Advisory Committee that there was a need to consolidate the conversations and the items discussed. He noted that in the last couple of meetings of these groups the common theme seemed to be the need for some kind of a “score card” – how do we rate these things and provide some kind of risk-based analysis to the different strategies that the groups are coming up with? The challenge was to find a way to illustrate that. This document is just meant to kick off the dialogue and then to provide you some ownership in the “final” document and better idea on how you would rate these various options and alternatives. He walked through the Matrix with the group and provided an explanation of the rationale for the compilation of the data into the matrix. He noted the following:

- In order to be able to provide a recommendation to the main Advisory committee sometime in December, we needed to get busy and to prioritize our efforts in our remaining meetings.
- Knowing that everyone took a different approach to the “Eastern”; “Central”; and “Fall-Line” strategies tables that will provide some good background information, not every single line item was captured in the matrix presented here today. The ones that are included are the ones that appeared to be consistent for the most part – they seemed to be repeated – which then meant that they were likely to be more important items. There seemed to be more consensus to these items. It doesn’t mean that we can’t add other items back in or take something off of the list.
- On the score card (“EVGWMAC Prioritization Scorecard”), the first two columns deal with Strategies, either “Primary” or “Secondary”. These strategies could also be ranked by “infrastructure requirements” or “capital development issues” but in order to keep it in context with the strategy tables that had already been developed, this approach was taken.
- The “regional impact” columns with the check marks in the “Eastern”; “Central”; or “Fall-line” categories does not mean that it is appropriate for that region or not or if it can be done or not in that region, what it means is that particular subgroup (Eastern; Central; or Fall-line) discussed that strategy.
- The first column under “Other Considerations” is “Actively being pursued by Stakeholders” means that is something that is currently on-going in the Commonwealth. So that there may be

some experience with that approach or strategy that we might be able to learn from. An opportunity for some local dialogue that will inform our decision making.

- The “Impediments and/or incentives” column is a consolidation of a lot of the information that was provided in the original strategy spreadsheets.
- On the “score-card” side of the spreadsheet are factors to consider for scoring or ranking a given strategy. These factors include:
  - “Health of Aquifer” – An important consideration.
  - “Technology” – Do we have the technology now or is it feasible?
  - “Economics” – Local, State, Potential Funding Issues
  - “Policy/Regulatory Implications” – Do we need to make changes to statutory or regulatory frameworks to make the strategy feasible and to make the decisions we need to make to move forward?
  - “Public Perception” – The “YUCK” factor.
  - “Interconnections” – Are they in place or can they easily be put into place?
  - “Long-Range” – Is it a long range strategy or is it something we can do in the short-term? Probably long-range would match up to a 15 to 30 year permit terms for surface water or groundwater or financial infrastructure requirements. There needs to be some dialogue about what short-term and long-term mean to the group.
  - “Seasonal” – Are there seasonal variations that need to be considered?
  - “Infrastructure Costs” – Are there additional infrastructure costs involved?
  - “Education & Outreach” – Are there education and outreach needs associated with the strategy/approach, such as the HRSD SWIFT initiative?
  - “Time to Complete (Years)” – How many years before the strategy is completed?
  - “Climate Resilient” – Does the strategy/approach take away from “climate resiliency”? That could be a positive or a negative.
- The final column in the “scorecard” would be for the final ranking – the final score given to a strategy/approach.
- One approach to how you would address each of these considerations in scoring a strategy is presented in the following legend:

CONSIDERATIONS	
Health of the Aquifer	A minus one (-1) illustrates a benefit to the Aquifer
Technology	Is the task limited by scientific technology
Local	Costs primarily absorbed by the locality or business
State	Will need state funding
Potential Funding	TIF, WQIF or other opportunities for funding may be available
Policy/Regulatory Implication	May have political or regulatory implications
Public Perception	Need to overcome perception issues
Inter-Connections	Will require inter connections on local level or interstate level
Long-Range	Will take more than one permitting term to implement
Seasonal	Seasonal variations may limit water availability
Infrastructure Costs	May be “significant” costs
Education & Outreach	Requires education & outreach
Time to Complete	How many years to implement that particular strategy
Climate Resilient	A minus one (-1) means will have a positive impact on resiliency

**Discussions included the following:**

- As presented having a -1 as a score is good – it means there is a benefit? Yes. A negative score means less impact and a positive score/ranking means “more impact”.
- As you look down the list of strategies on the matrix – did we include everything that we need or are there things that need to be added? Are there things that need to come off of the list?
- This was an attempt to be somewhere between “lumping” and “splitting”.
- On the “strategy” list there is a category/strategy entitled “Reclaimed water – Water Treatment Plant Interconnects”. These are two different things. That “Interconnection” concept as a “Primary Strategy” is can you connect to someone else. It was suggested that the phrase should read “Water Treatment Plant Interconnections”. Take out the reference to “Reclaimed Water”.
- The three regions that were used in consideration of these strategies were the “Eastern” which is basically the Tidewater area; the “Fall-Line” which would be around the I-95 Corridor and the “Central” which is essentially the area between the boundaries of the “Eastern” and the “Fall-Line”. There are really no defined boundaries – it was done on the basis of counties as a way to break up the discussions and needs into more manageable pieces.
- It was noted that this was a good job of consolidating all of the many pieces of information from the many meetings and many people providing input and suggestions into a manageable format. This is a great start. What we do with it from this point, we don’t know. At least we have something to start with/to work with.
- What do the terms “primary” and “secondary” mean in relation to the “scorecard”? It was a hard concept to figure out, for example, there were a number of strategies that would have dealt with surface water. So it was a way to lump those various strategies/options into the two categories of “primary” and “secondary” – maybe those are not the right terms, because people put values on those terms, one being better or higher than the other. It was more of a water source or type and then the second column (secondary) was more of the options that exist for

that source or type. It was suggested that it would be clearer if it was “category” and “subset” instead of “primary” and “secondary”. Yes, there are different ways that these could be labeled.

- Are the right terms – primary and secondary – or do we need to change them? It was agreed that “category” and “subset” might be the better terms to use. So somethings would be a “category” or a “subset” but somethings might not have a “subset”. It was noted that with the current listings that “surface water” could be both a “category” and a “subset” – this might be confusing. For the “category” of “Surface Water” you are saying that your options are a “direct withdrawal” from a stream or river or a withdrawal from a reservoir. For the “category” of “desalination” your options are either from a “surface water” source or from “groundwater”. The group discussed the categories and the suggestion was made that “desalination” should be listed as a subset under the category “surface water”. Then you would also need to add a category of “groundwater” and add “desalination” as a “subset”.
- Does it matter which subgroups discussed these options for the purposes going forward? Does it matter whether it was discussed by the “Eastern”; “Central”; or “Fall-Line” groups? Does that matter to the main group? A better information item for their consideration might be what part of the aquifer this benefits, i.e., which part of the state is that particular option available. When this spreadsheet was originally compiled the columns designating the three areas was not included since this was a consolidation process, but part of the way that those different categories had their discussions was “what do we think can really impact us here in this particular area of the aquifer”.
- It was suggested that since Andrea Wortzel has developed an alternate version of this strategy spreadsheet and before this group spends a whole lot of time getting into the details of this current proposal that we should see what changes have been made and what Andrea’s work recommends. It was agreed that made sense.
- It was suggested that if someone from the main Advisory Committee were to get this strategy material that they would likely go directly to the total score, where a low score means that it has a better ranking than a higher score. How should those total final scores be interpreted? In looking at the scoring, it appears that a project such as the HRSD project is ranked a “1” whereas a reservoir is ranked as a “3”, so HRSD would be ranked higher than a reservoir project. A statement has been made in the past that the state needs more water storage capacity. Given the way the numbers are, if you are sitting on the Advisory Committee is a “1” something that we are recommending to further pursue and a “2” or a “3” that shouldn’t be pursued further? That is part of the dialogue that needs to take place today within this group. That is a big part of why we are having this joint workgroup meeting today. An effort was made to not rank these for this initial review and discussion – this is just an attempt to show where there has been discussions and dialogues regarding a particular strategy in previous meetings and to bring those options that appear to have received the most interest to the forefront of the discussions – but nothing has been taken off the table – it is all open to discussion. It should be noted that not all of these strategies received the same level of discussion within the subgroups that brainstormed these idea – they all did not receive the same level of effort or interest within the

subgroups. The big question for today is how do you rank these strategies as we move forward? Are these the right categories and the right columns? Are these the right criteria? Maybe at the end of the day this material may be what informs the written proposal or recommendation not necessarily what defines the proposal or recommendation.

#### **4. Presentation of Revised Strategy and Scoring Framework Approach (Andrea Wortzel – Troutman Sanders/Mission H2O and Jamie Mitchell – HRSD):**

Andrea Wortzel with Troutman Sanders and representing Mission H2O distributed copies of a revised Strategy Spreadsheet and a revised Scoring Framework Approach to the group. She informed the group that she participates on the Alternative Management Structures Workgroup (WG #2A). She noted that when she had received the materials that Craig Nicol had compiled and that we have been discussing this morning that she thought about how do we blend the work of the Alternative Management Structures Workgroup with that of the Alternative Sources of Supply Workgroup and reflect that in the spreadsheet/chart? There are a couple of different themes in this revised strategy spreadsheet based on her interpretation of the concepts. She noted the following concepts were considered in developing this revised strategy:

- The First concept is: There is a need to ensure that the strategies that are truly regional are captured and identified as opposed to those strategies that are more individual and localized projects. Based on the way that the original strategy document was done it is hard to identify and reflect on what are the projects that are truly regional and which ones have a more localized benefit.
- The Second concept is: There is a need to identify what would work within the existing management structure that we have and what would require changes to the management structure in order to implement the strategy.
- A Third concept is how do we address water holistically? If there is a project that has benefits beyond just benefits to the aquifer how do we capture that and assign a weight when we are trying to evaluate and score a project/strategy?

Andrea noted that she took these concepts into consideration and took the spreadsheet/chart that Craig had generated and tried to lump things into different categories. These categories were: “Regional Project with Active Proposal within the Current Management Structure” (for example: HRSD SWIFT); “Regional Project Ideas without Active Proposal within Current Management Structure” (Who would champion such a project realistically? How would such a project move forward?); “Regional Project Ideas without Active Proposal and Requiring Changes to Management Structure”; “Individual Project Ideas with Active Proposal”; and “Individual/Small Scale Project Ideas without Active Proposal”.

In looking at the Score Card or Scoring it appeared that additional categories needed to be added to reflect the discussions of the Alternative Management Structures Workgroup (WG#2A), but also think about weighting some of those scores. She noted that she had enlisted the help of Jamie Mitchell with HRSD to look at this revision of the strategy sheet as well as the revised Scoring Framework, since she serves on the Alternative Sources of Supply Workgroup (WG#1) as well as she had attended a number of the meetings of WG#2A as an alternate. This helped to make sure that these categories were consistent with the discussions of both workgroups. A lot of the strategies and scoring criteria are the

same as those that Craig had compiled but there are some additions, such as “One Water Management”; “Aquifer Impacts”; and “Scope of Benefits”. The revised “Scoring Framework” was just an attempt to give more thought to some of those criteria.

Mark Rubin asked whether this should be considered as a replacement for the original strategy document and score card that Craig had presented or do the two concepts/approaches need to be merged/combined? It was noted that this was thought of as a substitute for consideration by the group. Mark noted that this is what we wanted to happen through this process was to make the product better. He asked whether, in terms of the projects and strategies, whether anything had been excluded from the original compilation? It was noted that an effort was made to try to capture everything but, for example, a separate line-item for the inter-basin transfer strategy was not included because it was hard to determine how that would be different from the interconnection strategy/concept. The term “decentralized” is not included but it is covered under the “small-scale” project concept.

### **Discussions by the Workgroups included the following:**

- How about the concept of “reclaimed water”? It is included in the category of “small-scale” reuse.
- Are there any factors that are missing that needed to be included? Everything seems to be accounted for. One of the areas of concern in the development of the original strategy spreadsheet was the concept of how do you weight the scoring/evaluation criteria? It was suggested that the inclusion of the “tiers” concept to the weighting factor was a good addition. If there is a need to add the concept of “inter-basin transfer” that could certainly be added but may not be needed. The basic idea is to get to a more common language in addressing the strategies and any scoring criteria or concept. The idea that has been proposed as a revision actually further consolidates the approach and concepts into a more manageable and understandable process – which is a good thing.
- A question was raised over the two little “Blue Boxes” included at the end of the spreadsheet entitled “Consider weighting combined scores in each category” and why they were labeled “Uncertain” for “Inter-Connections” and “Long Range”? Jamie responded that she had worked on the right side of the spreadsheet and that those were labeled as “Uncertain” because she wasn’t clear as to what they were. Could the idea of “Inter-Connections” or “Inter-basin transfer” become a row in the spreadsheet instead of a column? She wasn’t sure how “Long Range” differed from “Time to Complete”. She had changed “Time to Complete” to “Time to Realize Benefits”. So is the inclusion of the category of “Long Range” redundant? Can it be removed? It was decided that the column for “Long Range” could be deleted from the spreadsheet because it is covered under “Time to Realize Benefits”.
- A concern was raised over the proposed approach to the Tier System and the “High”; “Moderate”; and “Low” Weighting factors compared to the Scoring Framework Worksheet. Some of the criteria that you are considering in the columns across it is interesting to note that when you have a criteria that can only have a “-1” or a “+1” it is literally being weighted lower than those criteria that can achieve a “-2” or a “+2” rating. You have a category identified as “High Weighting” but you cannot achieve the same benefit or the same negative effect as

something with a Tier 2 weighting factor. It was suggested that the different weighting factors for each of the Tiers was a way to try to address that concern. There should be consistency across all of the tiers and weighting factors. It was recommended that the concept of a negative ranking being good and desirable and a positive ranking being considered bad and undesirable be switched. Change the negative to a positive and the positive to a negative. Perceptually, a positive is always viewed as the better outcome – the outcome with the most benefit to the aquifer should be a positive.

- In the vain of simplifying the spreadsheet, what is the difference between needing “Education & Outreach” and the concept of “Public Perception”? It was noted that these are both the “costs of doing business”. The concepts are fairly duplicative. It was suggested that the concept of “Public Perception” should be left under the Tier 2 – Moderate Weighting category and “Education & Outreach” should be deleted from Tier 3 – Low Weighting. It was noted that “Education & Outreach” is an integral component of every project or strategy – it is the cost of doing business. The group discussed this concept and agreed that the better approach would be to combine the two concepts of Education & Outreach and Public Perception and rename the Tier 2 category accordingly and to remove the “Education & Outreach” concept from Tier 3.

**CONSENSUS:** The group agreed that the new title for the Tier 2 – Moderate Weighting category of “Public Perception” will be “Public Perception/Outreach”.

**CONSENSUS:** It was agreed that the concept of “Inter-Connections” would be eliminated as a separate column since it is already addressed in the body of the strategy document.

**CONSENSUS:** It was agreed that the scoring numbers should be flipped so that the higher the positive number score the better the project.

- The group discussed the concept of a “0 to 5” scoring and that there should be no negatives. Since under the original concept a “0” score was considered as neutral, does that mean that under this proposal that a “3” would be considered neutral? What do you do if you have 2 projects that have identical scoring? The perception that there should be some “negative” scoring allowed since there are likely to be some “negative” impacts that should be taken into consideration for some projects. The change essentially is if there is something good it should be a “positive”. “Zero” should be representative of “no impact”.
- The concept of having a weight applied to the score for each Tier was discussed by the group. It was noted that this revised proposal does include such a weighting factor. (Tier 1: Score – Weight = 0.5; Tier 2: Score - Weight= 0.3; & Tier 3: Score – Weight = 0.2).
- The intent is for this group to create something by the end of today’s meeting that can be sent out to the workgroups for their review and consideration and to allow time for folks to provide their comments.

- It was suggested that it is sometimes easier for a chart of this nature to be filled in with an example to see where the choices and options for scoring and weighting lead you before deciding on the “final” components. That type of exercise may help guide you to where the weighting needs to go and how the weights may need to be adjusted.
- In regard to the “Time to Realize Benefit” factor, are we talking about groundwater solely and dealing with a 10-year permit term; or surface water and a 15-year permit term or is it a 30-year loan term? It was noted that this concept does require some additional consideration, because there is “Time to Implement a Project” and then there is “Time to Realize a Benefit” which are different concepts. Andrea Wortzel noted that her group was working on some model runs to try to identify the different time frames for realizing a benefit from the different ideas/strategies identified in the spreadsheet, but that data is not available yet. There are some projects that you might be able to implement very quickly but you won’t see a benefit to the aquifer for a long period of time because it is a smaller scale or because of where the project is located. Then there are other projects where you might see a huge impact but the project might take a little bit longer to implement, but the benefit is significantly greater. In addition, there may be other things that because of their size, even though it may take a longer time to get the project constructed, the benefit may be almost immediate.
- The “Time to Realize Benefits” is ultimately what is important to us in terms of the environmental resource with the caveat that “time to realize benefits” is a sliding scale both in terms of “location” and the “amount of benefit”. In regard to the HRSD project, the folks closest to the HRSD Project site will see a significant benefit very quickly, while the benefit for folks furthest away will be delayed. The “time you start seeing a benefit” versus the “ultimate end point” can be a long period of time. “Time to Realize Benefits” is not necessarily the “time to realize the ultimate benefit” but is rather the “time to start seeing benefits”.
- The committee was formed on the premise that there is going to be a real problem in 50 years if we don’t do something now. So in terms of time that may be our time period – where are we getting to that 50-year mark? Maybe we can’t get anything to reverse in 5 years but if we can get it to reverse in 50 years then that’s success, because that’s when we project that the problem will be culminating and causing the most harm – impacting the most people.
- A fundamental question/concern was raised that the scoring sheets don’t really provide for a lot of options to choose from and appear to be very limited.
- It was noted that the spreadsheet developed by Andrea and Jamie, include the HRSD SWIFT project under the header of “regional project with active proposal within current management system” while in fact it does not truly fit under the “current management system”. The state has not figured out how that facility is going to be regulated; who is going to be looking at the water quality of the water being injected into the aquifer. There is still a lot of work to do before this project can be official approved. We know that EPA would be the one to permit it, but who is going to manage it? Who is going to staff it and look at it?
- It was suggested that we might want to consider taking the spreadsheet developed by Craig and apply the scoring and weighing factors that Andrea and Jamie developed to that list. At the end

of the day, the legislature and the general public would feel better about the scenario if there were a greater number of options and alternatives that were considered. Andrea noted that she had tried to capture everything from the original listing but it may be a perspective that is presented by the way that the information is printed out and presented that may be causing the concern.

- It was noted that we all recognize that the HRSD Project proposal has potential impact for the entire area but it is not the sole solution. One of the things that Andrea's proposal does is that it allows for the consideration of multiple solutions, depending on the geographic area and/or the size of the jurisdiction that is working on a project. For example, there is a potential for a remote economic development site of 4,000 acres – in looking at how the proposed water and sewer service for that project would work, a progressive plan is being looked at where they would start with groundwater using RO because the available groundwater is salty and using onsite wastewater treatment, but then it evolves to “wastewater injection” as the system gets connected to the entire service system, that groundwater RO facility and use that as local injection point. It is not part of the HRSD SWIFT but it is the same idea. That would be recharging the aquifer where originally they had been using the aquifer. It would be a long-term plan that helps “do the recharge”, but that would be something that would be on a lower tier because it just has local impacts/benefits. What this revision effort is doing is trying to recognize that some people are not in the HRSD SWIFT area, they may be benefiting from them and they can benefit from use of the concept on a local level – they can do other things that are not area wide that can benefit their localities.
- It was suggested that you could take Andrea's list and have the two categories of “Regional” and “Local” as the two main groupings.
- It was suggested that you could just put the “concepts” on the left-hand side of the spreadsheet and then just include another level of “regional” and “local” to demonstrate where there may be benefits/impacts as additional items to consider in the weighting of the strategies. It was suggested that the “Scope of Benefit” weighting factor includes consideration of whether there are regional or local impacts and/or benefits.
- A concern was raised that with the revised spreadsheet, we would be calling a project out by “Name” instead of by “Project Type”.
- It was noted that the revised spreadsheet contains a column labeled “Scope of Benefit” while the “Scoring Framework” document identifies it as “Scope of Impacts” which could be two different things. What is meant by this? The label should be consistent; it is either “benefit” or “impact”.
- How do we account for the overarching benefit to the water supply? (Regional vs multi-jurisdiction vs a single locality?) Is the consideration on a geographic scope/scale or long-term benefit? It was noted that the idea was for the projects to be evaluated on a “geographic scope”.
- Is there something in the spreadsheet that gets to that “long-term” impact on the water supply in general? Something that is going to be continuous for example? Maybe you could capture this concern under “Temporal Availability” or under “One-Water Management”.

- It was noted that part of the reason that HRSD SWIFT was included specifically was because they were not only trying to separate by regional and individual but also by whether there was an active proposal/project on the table. Other project names could have been inserted if the project names were known – once this has been vetted we may want to go back through and name additional specific projects as “Active Proposal” instead of the use of generic project type labels.
- Should we develop a “scorecard” that can be taken as an objective tool to evaluate generic types or categories of projects? Then as we identify specific projects we could apply that “tool” to those projects. We don’t do water supply planning that way – it is always about the specific project. The question then is “what is this scorecard for?” It is to take to the Advisory Committee for them to be able to make decisions about recommendations that go into the final report. It is more about setting a direction and providing a tool to help the Advisory Committee, rather than as a way to approve or disapprove any specific project.
- It was suggested that the “Blue Lines” included as part of the revised spreadsheet are confusing. If there are truly a number of concepts that need to be scored then take the “blue-lines” out of the spreadsheet. Then also, we should identify the HRSD SWIFT project under a generic term as only a type of project not a specifically named project. These changes may make it easier to identify that this is a collection of options and types of strategies that are available for evaluation as possible options. If at the beginning of this process that all the options are equal then take the “blue-lines” out of the spreadsheet. The group discussed this suggestion. We don’t want to eliminate the small things that can be done locally in favor of the regional concepts. It was suggested that there be two categories of items to be considered, one being “regional” and the other being “local or non-regional”. Somehow the spreadsheet needs to be reorganized to ensure that all of the options are equally considered and evaluated. It was suggested that maybe the inclusion of another column that indicates whether the strategy is “regional” or “local” might be a good way to designate and clarify the options – this could provide another way to be able to sort the information. In addition, the identification of whether a project is “active” or “not” could also be included as an informational column since that status will change over time.
- Based on the spreadsheet which items aren’t competing against each other? If they are equal and are competing against each other than the artificial separations (blue-lines) need to be eliminated. It was suggested that the way the spreadsheet is currently designed that it appears that it would drive the scoring in one direction. It was noted that in fact these options are not competing against each other, because there is no “surface water reservoir project” that has been proposed, there is no one championing that approach or willing to move forward. The only project currently on the books is the HRSD SWIFT proposal. The reason for having this and other options to score is to be try to address future needs. We still need some way to capture proposals that are “active” and that are “on the table” versus “ideas” that are floating around out there that don’t currently have someone championing or pursuing them.
- A concern was raised that this has the appearance that the only project that is out there is the HRSD SWIFT project and that project is fix all of our problems and the rest of this exercise is

just a way to make us feel better about it. What we are trying to do through this process is to identify whatever proposals are viable, so that someone may take that type of project and move forward with it. If different things come up with higher scores for the geographic areas that they impact then those are the proposals that we may need the Legislature or the regulations need to be more flexible to allow them. We may need to identify funding so that someone can do them. What this process does is to evaluate the viability of a project, so that there may be a champion. As far as a “reservoir” project goes there have been enough people on this workgroup and across the state have been burned or heard about stories of the issues with trying to get a new reservoir that there isn’t going to be a champion for that type of project unless it is acknowledged at the state level that it is a really good alternative and that there is actually a chance that they might succeed.

- It is not a question of one project competing against another – it is a question of prioritization.
- It was suggested that it might be a good idea to add a column under the Tier 1 Weighting to capture the “active project” concept to differentiate that from “abstracts”.
- Some projects may be more regional than others.
- Don’t want to lose the concepts but we need to find a way to make it less confusing.
- The group discussed the spreadsheet and what items of information should be included. Right now the spreadsheet is broken down in the following fashion:
  - Regional Project with Active Proposal within Current Management System
    - § HRSD SWIFT
      - Capital costs already dedicated
      - Benefits to Bay TMDL/water quality/stormwater
      - Increases water levels across the aquifer
      - Agency/Administration support
      - EPA approval needed
      - Costs to non-users
      - Must be treated twice
    - Regional Project Ideas without Active Proposal within Current Management System
      - § Surface Water Reservoir
        - Multi-jurisdictional
        - Federal permitting
        - Limited land availability and water supply (must go upstream and may be limited by upstream users)
        - Agency supported
        - Impacts to wetlands
        - Protects private well users
      - § Desalination
        - Discharge of waste concentrate/impacts to tidal biota
        - Uncertainty about placement

- Regional Project Ideas without Active Proposals and Requiring Changes to Management System
  - § Interconnections/redistribution of surface water
    - Current contracts in place
    - Stakeholder resistance to moving water to other areas of the state.
- Individual Project Ideas with Active Proposal
  - § Surface Water withdrawal
  - § Small Scale Reuse
    - Need end-user
  - § Small Scale Reservoirs (quarries/impoundments)
    - Seasonal
    - Cost for infrastructure
- Individual/Small Scale Project Ideas without Active Proposal
  - § Stormwater Ponds
    - Limited yield
    - Vulnerable to contamination
    - TMDL credits/SLAF funding
- It was suggested that the additional rows (items) included under each option are more like a set of “pros and cons” for each of the options and some of the options have more things listed and different things listed than other options. These really don’t have a particular place or value added to the scoring criteria, because we are not scoring those items individually. This information should go away and just get factored into each of the scoring columns. It was suggested that these items are helpful notes and shouldn’t be lost.
- It was noted that the HRSD SWIFT Project is not going to affect the areas very far north – we have to stop thinking about just the Tidewater area, we have the Northern Neck areas where this project is not going to have an impact. The time frame for the project is not going to meet the problems in other areas. The SWIFT project is being looked at by other localities as a possible option as far as the type of project (aquifer recharge) that could be used in different areas and by different localities that can all learn from the experiences of HRSD in undertaking this project, especially if the project works. But it is not something that will work everywhere and in every instance, so these other options/strategies are things (good projects) that we all need to be looking at as possible options. No one fix is going to fix our problems. We need to keep all viable alternatives on the table. We have to be able to consider and to determine the best project for a particular area.
- It was suggested that we get rid of the “regional vs local” lumping in the spreadsheet and handle it under scope of benefit. If it is “regional” or if it is “local” it is identified there.
- It was suggested that we add a column to the spreadsheet for whether there is an active proposal/an active champion for that particular project or category of strategy. We can just make the definition of the “scope of benefit” more distinct so that it is clear that there needs to

be an identification and consideration of whether a project has “regional” or only “local” implications/benefits.

- It was suggested that there is a difference between the concept of a “management structure” and a “regulatory structure”. It was suggested that in fact HRSD does have a “management structure” but what may need to be clarified and what is uncertain is the regulatory structure under which the project will be approved and regulated. It was suggested that there should be a way to distinguish between a “management” and a “regulatory” structure.
- Is there a way to make the distinction between “regional” and “local” based on number of localities affected? Or maybe by population might be a better way to look at it?
- It was suggested that rather than coming up with a perfect scoring, maybe we should just be going with a “check-mark” approach. If the ultimate recommendation that you are taking to the Advisory Committee is maybe a combination of projects that say that if we did this series of projects then everyone would have a long-term water supply and here are the places where we need regulatory changes and/or funding to make these happen. If that is the ultimate goal then we are not really trying to say “which one is a 5”, etc. So you are not championing one particular project in a particular area. The number or score of a project is not important as the concept (this project does this or helps this many people, etc.).
- A concern was raised about losing the “regional” vs “local” categories. We still need to be able to look at both a “regional” and a “local” when evaluating a project. It was suggested that we need to make sure that we incorporate a column that identifies whether a project is “regional” or “local” and a column that identifies whether a project is an “active” project or not.
- A concern was raised as to the lack of information regarding all of the “active proposals”. Who knows what projects are active – which types of strategies have champions? That information could be reflected in the final report. A question was raised as to whether the agency (DEQ) would be willing to include actual project names in the report since Director Paylor will be the one sending the report forward? Or is it going to be concepts? It was suggested that as long as the agency is not making any sort of “case-decisions” about a particular application that there is a way to finesse that to endorse that particular alternative as solving the problem while not saying that we think it gets a permit that there should be no problem.
- What is wrong with keeping it generic for the purposes of this committee? The generic category for the HRSD SWIFT project would be “aquifer recharge”, but then there could be another column to indicate where there were “active projects”.
- Is the idea then to take the “active projects” information and include it in an additional column (a comment column) that would not be included as part of the scoring concept and would not be included in the “final score” for a concept/strategy? Yes, it could be just an informational item.
- It was noted that the work done by Craig and Andrea was greatly appreciated. It was suggested that there is one thing that seems to be missing from the scoring sheet and from today’s conversations and that is “rating a need for a project”. This seems to be a pretty basic part of this conversation/discussion. There are some entities represented by those in the workgroups who are looking at immediate water supply issues due to the groundwater withdrawal

reductions. It seems that the “critical need” should be factored into the weighting criteria somehow. There is no criterion that considers the “need for the project”. One way to address this might be to address on column types, i.e., “Time to Realize Benefits” especially if there is a perceived local immediate need. The spreadsheet could be sorted on those factors that are most important to a particular locality. While it is important to understand the need for a project, the “need” for some is driven by “proposed permit reductions” for groundwater withdrawals. How do we look at what the benefit of a project is? Is it solving a short-term need caused by a permit reduction or is it solving the need for the area as a whole?

- The suggestion of putting in “where the benefit is” as opposed to there “is a benefit” was supported. We need to be able to identify where there are gaps in “where the benefits will occur” so that we can identify areas that might be suitable for filling in those gaps and addressing specific areas of need. We need to be realistic about what is on the table and what is funded. We do have an issue in front of us that we have to solve, but we do need to be realistic in our approach and the types of projects/strategies that we would recommend.
- The problem that we are trying to solve is that over a 40 to 50 year horizon that there is not going to be sufficient water in the aquifer if we continue along the lines as we are now. The idea was to come up with a strategy over that 40-50 year time period that would hopefully address that problem. So what we are looking at are immediate concerns, which are the permit reductions, and long-term concerns. Both of those need to be addressed. The strategy doesn’t just say that at the end of 50 years we need to be here, but is more of a “how do we get there?” approach. That results in a combination of projects, some of which are more immediate than others. It is a tool and a broad strategy that hopefully will solve the problem.
- This is a decision support tool but it is not the “end-all”. It should serve as a standardized tool to build discussions upon and to guide and inform decisions. What is feasible and viable? It is a tool that can be used to discussions and decisions as to what combination of projects from the “feasible” list that should be pursued as we move forward – which ones best fit our needs.
- It was noted that the charge also directed the committee to look at the issue on a regional basis. The idea is to come up with a strategy that will incorporate a combination of small local projects as well as regional projects. The idea is to come up with a strategy.
- Part of what we are struggling with is “at the end of the day” the committee has been charged with coming up with a comprehensive package that includes “what are we going to fund?” What regulatory changes are we going to be proposing to enable certain things to move forward? While on the one hand we are looking at developing a tool for the future, on the other hand we are looking at a comprehensive package of “this is our plan for solving the problem”. That might involve endorsing certain projects. There might be a project where there is a concern of a “public perception” where there is a committee or group that comes out to endorse that project or type of project that might help overcome that “public perception”. The thought is that this process may result in some specific project recommendations or endorsements, as well as these are the types of additional projects that we would like to see happening and here is how we are going to create incentives, funding opportunities, etc. for these other projects to take

place that aren't currently on the table. Part of the analysis has to be "we have this pool of projects currently in play"- Are we endorsing these projects? – Do these do what we want them to do? And then what more do we need and how do we get there? We are trying to do two things with this chart. We are trying to vet the projects that are currently on the table but it could also be a mechanism for identifying what more is needed and how are we going to achieve it.

- A concern was noted regarding the concept of "picking projects". Are we in the business of "picking" and/or endorsing specific projects? The thought was that we were in the business of recommending to the General Assembly and to DEQ criteria for them to pick projects and decide upon projects. The thought was that this overall Commission was about, "give us some guidelines about what the policy of the Commonwealth of Virginia ought to be" both legislatively and regulatorily so that any individual project can make its way through or not, not necessarily picking a specific project or projects. If this is about "picking projects" then we need a long list of all the projects that we need to consider. That list is probably not available nor can anybody in this meeting compile that list. We are about creating policy and criteria that can be applied by DEQ or the General Assembly to pick individual projects and that is all the more reason why some of these things included in the chart need to be generic in nature. We need to figure out – Is this criteria important? – Is this policy important? – Which one of those is the tier that we use?
- The report, clearly will have criteria, because those are all the things that you are looking at in terms of "scoring" something. That is a large part of this process, here is how you judge projects. Here is how you should look at these projects in terms of whether you should fund them or create incentives for those projects. The next question is do you look at what we have now or what is on the table now as an "active" project and say to the General Assembly, we have looked at and we are aware of these projects and we think that these specific projects fit these criteria. This would be a recommendation from the committee because we are not the decision makers in this process. It was suggested that it is important to have a generic list of criteria, but because the legislators deal in realities then you use a "for example" clause to include references to specific projects. You could use those "existing projects" as examples and not as "specific recommendations". That way you would have your generic list of guidelines as to here is where we need to change legislation and regulation and find funding, etc., but then you would have the "for example" list to illustrate specific projects that exist now, but you don't rule out any other projects that might exist in the future.
- The question then is how do you modify page one of the chart to make this concept work?
- Down the road there will have to be a list of specific projects in each of the generic categories. That will eventually have to be developed. No matter what this workgroup says, it doesn't mean that a specific project will or will not happen – we are not the decision makers in this process. We are just trying to provide a tool for the future evaluation and consideration of a type of projects that can ultimately be used to look at specific projects.

- In regard to the use of the concept of inclusion of the “for example” clause and information regarding specific projects, there also needs to be a notation for projects that “are in the proposal stage”. We need to clearly identify those specific projects that are being actively pursued and developed – those that currently have a champion. We have to be able to deal with reality and to recognize those specific projects where there are ongoing local efforts to develop the project. We need to be able to identify and include information about specific projects that are currently being funded and what benefits those specific projects would have.
- Regarding the HRSD project, if everything went according to plan, it would be 10+ years before the project would be up and running. At the point when the full project is up and running and it is injecting into the aquifer, how long before a benefit to the aquifer would be realized? It depends on where you are in the system, but likely by 2037. That is just from 2 plants. Even the full development and implementation of the HRSD SWIFT project is not going to solve the problem tomorrow or within a quick time frame. HRSD is not the silver bullet that will solve our groundwater availability issues. There are going to be other issues out there that will need to be addressed. In the Northern Neck, up around Fredericksburg area, which is in the Groundwater Management Area will not see the benefits from the implementation of the HRSD SWIFT project, so they will still be looking for different options. We need to keep other options on the table. We also need to consider the impacts from usage in Maryland to consider in this area as well as impacts from usage in North Carolina in other portions of the Commonwealth.

In order to keep this process moving, the idea that has been presented in relationship to the chart that Andrea and Jamie developed is to remove the “blue highlighted” rows, but to not lose the content – the data contained in those rows. The two additional columns that are being recommended, would be one column that lists whether the concept is regional or local or other things that fall into that category and then also have a column that identifies whether a project/concept is “an active proposal” or not. In addition there could be a third new column that indicates whether the project or concept is within the “Current Management System/Structure”. Those would be informational columns, so they would not have a rating for the purposes of “scoring” a project/concept. They would just be a way to sort or filter the information. In addition we discussed adding a specific identifier notes column that provide the “for example” information for specific projects. This would also not be included as part of the “scoring” or “rating” aspects of the chart – it would be more of an informational column.

### **Further Discussions:**

- This approach would work as long as we don’t lose the “local vs. regional” concept. There are going to be some “local” projects that are going to be important to solving some immediate localized issues that a larger “regional” concept may not immediately address. Don’t want to lose the power of a “local” solution. “22 small pots of spaghetti can make as much spaghetti as a large pot can and may be distributed better.”

- It was noted that there was a recognition of “regional vs local” in the consideration of the “geographic” extent of a project.
- It was noted that the perspective of “regional” as presented in the original “blue” rows didn’t necessarily get at the scope of the benefit or the regional nature of the benefit it was really there to indicate that there were existing regional partners for that specific project or concept. For the HRSD project, they are going to be the lead on the project but they are going to need regional partners in making that project happen. “Individual” was intended to mean that, for example, in James City County’s case, they have a project that they can do independently – there may be regional benefits but it is a local, a James City County, project. They are not going to be relying on “regional partners” to implement the project. The concept and the difference between “regional partners” and “regional benefits” needs to be captured in this analysis. The concept of a project or concept requiring “multiple parties/multiple partners” as opposed to a “single entity/locality” project needs to be part of the consideration.
- In regard to the “scorecard”, there are some generic guesses you can make about scoring some things but for specific projects you have data and information that you can make your “scoring” much more informed. The inclusion of the “for example” information column will be useful, but it might also be useful to include a “score’ for those examples. For example, if you just put in “aquifer recharge” that can be small or that can be large, but if you look at a specific project that will tell you more about the extent of the possible impact of that project. We don’t want to lose the opportunity to show how specific projects meet the criteria – but that can be done in a “for example” column. We should provide a score for the examples that are included in the “for example” information column.

**5. BREAK: 10:55 – 11:10:**

**6. Process (Mark Rubin):**

Mark indicated that the next steps in this process will be for Andrea Wortzel and Jamie Mitchell to take the proposed revisions that we discussed this morning and use those to create a revised spreadsheet that will come back to Craig Nicol for review and then that revised spreadsheet will be provided to the group for their review and consideration.

**ACTION ITEM: Andrea Wortzel and Jamie Mitchell will work on development of a revised spreadsheet incorporating today’s discussions for review by Craig Nicol and for review and consideration by the Joint Workgroups.**

The sense is that we are going to need another joint meeting of these workgroups prior to the meeting of the main Advisory Committee on Monday, October 17<sup>th</sup> so that we can have a product and a possible recommendation that we can present to the main committee. Bill Norris will be sending out a “Doodle Poll” to identify a possible meeting date and location for that meeting.

**ACTION ITEM: Bill Norris will identify possible dates and locations for a 2<sup>nd</sup> Joint Meeting of Workgroup #1 and Workgroup #2A and distribute that to the workgroup members.**

**7. Introduction and Discussion: Scoring Framework (Andrea Wortzel/Jamie Mitchell/Mark Rubin):**

Mark suggested that the next step in the process for today’s meeting is for the group to discuss the “Scoring Framework” document that had been developed by Andrea Wortzel and Jamie Mitchell. The “Scoring Framework” document was provided as a handout and is presented below:

## Scoring Framework

Aquifer Impacts	Benefit to Aquifer		Risk to Aquifer			
	Preserves Storage Capacity	Increases Available Water Supply	No	Low	Medium	High
	-1	-1	0	1	1.5	2
Time to realize benefits	Within 10 yrs.	10 - 20 yrs.	20+ years			
	-1	0	1			
Scope of Impacts	Regional	Local				
	-1	0				
One Water Management	Provides additional surface water benefits	Provides no additional surface water benefits	Potential negative impact to surface water			
	-1	0	1			
Technology	Available and implemented elsewhere	Available but untested	In development	Does not exist		
	-1	-0.5	0.5	1		
Funding	Funding Available	Partial Funding Available	No funding Available but potential to receive funding	No funding available and low-no potential to receive funding		
	-1	-0.5	0.5	1		
Infrastructure Costs	Low	Medium	High			
	-1	0	1			

Policy/Regulatory Implications	Policy and regulatory framework exist to readily support project	Either policy or regulatory framework exist to support project	Policy or regulatory framework does not exist	
	-1	-0.5	1	
Public Perception	Significant Public support likely	Neither significant public support or opposition	Significant Public Opposition Likely	
	-1	0	1	
Climate Resilience	Positive Impact on Resilience	No effect on Resilience	Negative Impact on Resilience	
	-1	0	1	
Education & Outreach	Low investment	Medium Investment	High Investment	
	-1	0	1	
Temporal Availability	Year-round	Variable		
	0	1		
Interconnections?				
Long Range?				

Jamie Mitchell informed the group that all of the elements that are included in this scoring framework are the same elements that were contained in Craig Nicol’s original scorecard except that she had included as the concept to “One Water Management” to convey the idea of managing our water resources in a holistic manner. In addition the title of the element “Time to complete” has been revised to read “Time to Realize Benefits”. There may be things that are missing – things that we may want to discuss adding to the list of elements. She noted that we probably also want to tweak the “scaling system” so that we are not inadvertently ranking one thing higher than another based on the scoring.

Mark noted that the two questions that we need to discuss are: 1) Are there other things that we need to add to the scoring categories? And 2) how do we assign “weights” to the various categories and what should those “weights” be? There are likely other issues that we need to address but these will get us going. It was suggested that the “weighting” factors need to be discussed as well as the question of how do you “score”? What gets a “1”? What gets an “0”? What gets a “-1”? That is important to know so that you know how to fill in the score card.

The categories are pretty much the same as those introduced in the scorecard that Craig provided this morning. Is there anything that should be taken off is there anything that needs to be added. Also note that the scoring framework has two categories that have question marks on them: “Interconnections”

and “Long Range”.

### **Discussions included:**

- It was noted that the left hand column of the scoring framework was the same as the top row of the “category weighting/project” list. If so, then we should delete the two elements of “interconnections” and “long range” as we did in our earlier discussions.
- A suggestion was made that for the element entitled “stormwater ponds” in the “category weighting/project” list that the element be changed to read “stormwater reuse” to more accurately reflect what the project would be. We need to be as clear as we can with the labels as to what it is that we are putting forward.
- With the scoring framework, the assumption is “benefit to the aquifer” and that is appropriate. But it was noted that there may be some projects score well under this framework but at the end of the day of you do not have an adequate water supply where you need it, then we have not succeeded. It was suggested that these frameworks are not addressing the issue of “need”.
- The group discussed the necessity of including and considering a “need factor” in the scoring framework. There has to be some consideration of “need”. Maybe the factor is not even “need”, maybe the issue is that there has to be an adequate water supply for everyone in the region at the end of the day. That appears to be a critical part of what this group is tasked with. It was suggested that maybe it could be included in a category of “what is the driver” for a specific project. Some projects may have a driver that is an immediate need due to a permit reduction; due to a contamination issues; or any number of “drivers”. Maybe it is not a scoring consideration but should be included as a “narrative” in an “information column”. It would apply more to a “specific” project as opposed to a “generic” project of concept. In the generic concept there is no driving “need”. In the “generic sense” the need is to preserve the aquifer, but in the “specific sense” there are some “drivers” for implementation of a project. The “permit” should not be the driver at this stage of the discussions. It was suggested that “economic development” is a “driver”.
- It was suggested that “reclamation” needs to be included as a category of project in the matrix, especially for rural communities/localities.
- Understanding the “need” does affect the “lens” with which you look at each of these projects. There may be a project where ordinarily you would say that never in a million years would we consider that project (i.e., a reservoir) but all of a sudden when you recognize impact on the aquifer but also the local need, suddenly that project becomes a lot more attraction.
- The group discussed the idea of the “area that would be impacted” by projects and the use of a map to illustrate that area of the management area as part of this consideration and evaluation, where all of the areas impacted and benefited could be highlighted so that any gaps could be clearly identified and you could see where additional projects are or may be needed.
- It was suggested that it almost breaks down into a “must have” versus a “nice to have” scenario. In order to people to achieve the reductions that are being imposed on them through the permit reductions, they “must have” certain things happen and then going forward it would be “nice to

have” additional projects that give us more flexibility or room for growth or economic development. It would be “nice to have” additional projects that would come on line to provide a buffer, but there is an immediate need in some instances that has to be met.

- Is there a way to set criteria to address “projected needs” or “projected water supply or quantity”? Criteria that could start to identify how significantly or what percentage certain of these projects/concepts that we have been discussing would meet that “projected need”. That is likely to be very location specific. Unless we know the specific project that would be very difficult to identify.
- It was suggested that the scoring matrix in and of itself can stand without some narrative components. There are a number of different things that are starting to be discussed that are better handled through some narrative, because there is not necessarily a good way to convey the relative importance of some of these things just in this numeric fashion. It was suggested that the 2<sup>nd</sup> column from the left in Andrea’s matrix of projects and project weighting factors could serve as the start of this narrative.
- The question was raised as to you was going to develop the narrative?
- We need to think about some way of visualizing some of the relative benefits to the system and the timing of those benefits for the main Advisory Group and for whoever the main audience ends up being.
- Which of these elements or categories address the long term impact to the resource?
- One of the things that we touch on in different ways but really don’t identify is does each project or that type of project, whether it is generic or specified, result in reductions. Is it about the reductions goals or is it about an individual needs goal or is it about long-term sustainability? Is there a way to bring those three facets into the analysis? These would not be part of the scoring but would be included as information or as a comment to consider in the overall evaluation process. Should we take the numbers out of the score card and just include “negative” (-) or “positive” (+)? In the end, the score doesn’t matter at this stage of the evaluation/analysis.
- The inclusion of a “scope of benefit” category was discussed. The overall scope of the benefit of a project should be taken into consideration.
- It was suggested that you don’t want the regional to overshadow the local. The local project only serves a single need and only address a localized problem. A local project may not score as well when compared to a regional project, but we do not want to discourage a local project. We don’t want to lose the value of local projects. It was suggested that we include whether a project has a local or a regional impact/benefit should be included as an information element and should not be scored.
- The need for a mapping exercise to provide a visual for consideration of the areas of impact/benefit for specific projects was discussed. The map could include “specific projects” that are being championed and proposed; “generic projects” that could be considered; as well as “completed projects” that have been implemented in the past within the Groundwater Management Area. The “completed project” piece could provide some useful historic data.

- The “benefit to the aquifer” would be more of a “sensitivity’ analysis/consideration. If you have a project in this particular area, what is the relative impact to the aquifer? This would relate to the size of the project.
- What is the advantage of having a local project? A local project meets a local need or neutralizes a local impact on the aquifer. It provides a local benefit and meets a local need.
- The issue may not necessarily be one of “local versus regional”. A regional project may not benefit everyone in the region. The concern was raised again about this group recommending a set of projects that may not ensure an adequate water supply for the Commonwealth (Groundwater Management Area) in the future. There are benefits to regional projects, but if we don’t have a list of projects at the end of the day that ensures an adequate water supply for the entire region, then that may not be what this group is supposed to be doing.
- There may be a project that addresses 80% of a problem but we need to be able to identify how the remaining 20% is going to be addressed.
- It is not just a “volume issue”, it is also a “quality issue” that has to be addressed.
- How do we look at the question of the need? It was suggested that we just include it as part of the narrative.

Mark noted that the next question that needs to be addressed is how do we deal with the concept of “weighting”? How do we include “weighting” in the analysis?

**Discussions included the following:**

- It was noted that the matrix sheet already has a number of choices under “Tier 1” for weighting factors and “Tier 2” has less and “Tier 3” has even fewer choices. Just the number of choices in itself would affect the scoring and weighting. It was suggested that this apparent “automatic weighting” could be resolved by “averaging” and then multiplying by the “weighting factor”.
- What is the rationale for having the different tiers versus making them all equal and then weighting them individually?
- Weighting is a very challenging concept. The reason for weighting certain items, certain ways can be difficult to articulate. The more even things start the easier it is to describe the weighting rationale. Right now the matrix has different numbers of criteria under each tier; each tier currently has an additional weighting and then when you look at the individual criteria they themselves have different weighting factors or scoring options. There are so many things to describe right now that it is confusing. Need to start with things as clear and as clean as possible would make this exercise easier to explain and undertake.
- It was noted that some of these criteria are far more important than others.
- It was suggested that the weighting could be normalized by averaging to fix the idea that there are more important items in the higher tiers.
- It was suggested that the scoring of the criteria should be either “-1”; “0”; or “+1” for the sake of simplicity. If a criteria or factor is “negative” it is a “-1”; if it is “positive” it is a “+1”. If it is “neutral” it is “0”.

- The group worked on an example to see how the scoring concept would work. The group used a regional large scale “surface water reservoir” as an example. The discussions included the following:
  - **Aquifer Impacts (Tier 1)** – Depends on where it is and how big it is – but it can only help – it increases available supply - so it would be a “+” or a “+1”.
  - **Time to Realize Benefit (Tier 1)** – 20+ years - since there is not one currently planned it would be a “-1” or a “0”. It should be a “-1”.
  - **Scope of Benefit (Tier 1)** – Scope of Impacts is going to be a qualitative factor – an information factor that would not be scored.
  - **One Water Management (Tier 1)** – The purpose of this category was to look at the impacts beyond just to groundwater. Could help with flood control – could help with stormwater management – recreation – it will impact wetlands – potential to get some people off of groundwater – this category is supposed to capture the benefits and impacts to water holistically or to the environment holistically rather than just looking at aquifer – there are both positives and negatives so it should probably be scored as a “0”.
  - **Technology (Tier 1)** – it is a known technology – so it would be a “+1”.
  - **Funding Availability (Tier 1)** – limited – “-1”.
  - **The Score for Tier 1 for a Regional Large-scale surface water reservoir would be a “0” – regardless of the weight.**
  - **Infrastructure Costs (Tier 2)** – High costs – score would be a “-1”.
  - **Policy/Regulatory Framework (Tier 2)** – There is a regulatory framework but it is difficult – you don’t have to write any new laws for a surface water reservoir – but there are so many different regulations required to get approval – what is the intent of this column – does it exist or not – the original dialogue for this item – based on the original matrices was will it require regulatory change to implement – so it would be scored a “+1”. Do we need a column for regulatory feasibility or is it captured under another category?
  - **Public Perception/Education & Outreach (Tier 2)** – for a reservoir there will be some opposition – but there may also be people who want it – based on past experience it should be a “-1”. Within the coastal plain of Virginia within the past 40 years how many positive experiences have there been related to surface water reservoirs? – Score of “-1”.
  - **The Score for Tier 2 for a Regional Large-scale surface water reservoir would be a “-1”.**
  - **Climate Resilience (Tier 3)** – does this mean that the project is resilient to climate change or does it mean that this project improves climate resilience? Or does it mean that the project would not be as good during a drought? This concept was up for discussion by the group – the idea was not to remove the concept of “climate change” from consideration. Is this about sea level rise? It could be but not necessarily. It could be related to how a project responds to periods of heavy rainfall or periods of extended drought. It can be designed to be climate resilient but you are also “drowning wetlands”

in the process. Does the project have a positive or negative impact on resilience? The resilience of a watershed will be decreased by “drowning wetlands”. It was suggested that wetlands were one of the biggest contributors of greenhouse gases on the planet. It was suggested that the score should be a “0”.

- **Temporal Availability** – this was included because there was a seasonal category of the original matrix – is this an important thing to consider? – Is it available only at certain times of the year or is it available year round? The scoring categories for this item are listed as “0” for Year-Round and “-1” for Variable. So the score would be a “0”.

Mark noted that the object of this exercise was to see what the categories mean and how you would develop a score for each and to see if this was going to end up being a valid and useful approach. Does this scoring concept come up with something of value?

### **Discussion Included the Following:**

- It is a good discussion point, but it is still a subjective exercise.
- It provides value as you are evaluating a project. As you go through the different pros and cons then you come out of a project with some “pros and cons”. It becomes a narrative.
- In regard to the concept of weighting – the problem is if you end up with a “0” final score then you cannot weight it. The concept of whether a project/concept is “good”; “bad”; or “neutral” is really all you need to know. Don’t really need to consider or include a weighting factor. It either works or it doesn’t. It was suggested that the numeric scores should be taken out of consideration and just work with a “+”; “-” or “0” – should use some way to designate the ideas of a project being “good”; “bad”; or “neutral”. Once you put numbers into the mix, people want to “add”.
- What happens to the concept of Tiers if there are no numeric values included? You can keep it in tiers and have the pluses and minuses or “up arrows” and “down arrows” and evaluate a project for each Tier. Once you come up with a number – people tend to argue over the numbers.
- The most important aspect of this scoring exercise is that it ultimately creates a narrative for each of the projects.

**CONSENSUS:** The group decided that “pluses and minuses” or “up arrows and down arrows” should be used to eliminate the tendency to try to add things up if numeric values were used.

### **8. Next Steps – Meeting Wrap-Up (Mark Rubin):**

Mark noted the next steps would include:

- Reworking the scoring matrix document based on today’s discussions and providing a revised version of the document for consideration by the group.

- Development and release of a Doodle Poll to select a date for an additional Joint Meeting of the 2 workgroups before the main Advisory Committee meeting on October 17<sup>th</sup>.
- At the next meeting we should make sure that we are okay with the revised document. The hope is that we can get the revised document out to the group in plenty of time before the next meeting so that everyone will have a chance to work through some examples like we did in today's meeting using the "up arrow – down arrow" approach to see if it works for everybody and to identify some key points under each of the criteria so that we will have some informed and productive discussions. The hope is that we will have a product and a recommendation that we can report to the main advisory committee on the 17<sup>th</sup>.

**9. Public Comment: No public comment was offered.**

**10. Next Meeting/Meeting Adjournment:**

**ACTION ITEM: Bill Norris will identify available dates for a meeting in the near future and will send out a Doodle Poll to select a preferred date for the next meeting.**

The meeting was adjourned at approximately 12:00 Noon.