QUITTAPAHILLA WATERSHED ASSOCIATION
Meeting Minutes
Annville Town Hall and Remotely Via Zoom (Hybrid Meeting)
Tuesday, December 17, 2024

Present: Michael Schroeder (President), Joseph Beidler, Bob Connell, Kent Crawford, Karen Feather, Katie Hollen (LCCD), Kara Lubold (LCCD), and special guests Steve Tricarico and Cindy Murdough of the Tulpehocken Watershed Association

The meeting opened at 7:02 p.m.

1. **Minutes.** The minutes of the Nov. 19 meeting were circulated electronically before the meeting and approved by consensus.

2. **NFWF Grant: Approval of QAPP and Draft Scope of Work.** Mike reported that Tali MacArthur at POWR is waiting for the QWA to send her its updated Monitoring Program Quality Assurance Project Plan (QAPP) and its finalized scope of work for potential consultants for the National Fish & Wildlife Foundation grant. Kent noted that the draft Mike prepared, titled "goals & objectives," lacks specific timetables and deliverables, so that the document as written does not take the form of a "scope of work" as conventionally understood. After discussion, it was agreed that Mike should send to Tali our updated QAPP and our current "goals & objectives" document and ask for her advice & counsel on how best to move forward.
    - The updated QAPP is too long to include in an appendix to these minutes and instead is housed in this Google Drive folder: https://drive.google.com/file/d/1gbN-vpMurpgFRRsNEcrKKoh3Lv9p_F_X/view?usp=drive_link
    - The draft "goals & objectives" document is included in these minutes below in **Appendix 1**.

3. **Monitoring Program Updates**
    A. **Fieldwork.** Mike reported that streamflow monitoring & sampling fieldwork took place on Wed. Dec. 11 at monitoring sites Q1 (Quittie Creek at Garfield St. in Cleona), Q2 (Quittie Creek at Palmyra-Bellegrove Rd), and K1 (Killinger Creek at Killinger Rd). A second day of fieldwork is scheduled for tomorrow, Wed. Dec. 18 at S1 (Snitz Creek on Dairy Rd), BK1 (Beck Creek on Bricker Lane), and BM1 (Bachman Run at Louser Rd). Fieldworkers this past Wed. Dec. 11 were Katie Hollen; Katie's aide for the day Rachel, a high school student at Cedar Crest; Willie Bixler; Bob Connell; Mike Schroeder; and Gary Zelinske, with Alyssa Bellucci driving the samples to the DEP lab in Harrisburg.

B. **Equipment.** Bob reported on his efforts to repair or replace the Hobo sensors, which keep breaking down or running out of battery power. He reported that five sensors need fixing or replacing. Discussion followed, with Kent, Steve, and Cindy weighing in. Steve noted that the Mayfly data loggers provide real-time data on a range of parameters and are used at the Stroud Water Research Center. It was agreed that we should ask the folks at Stroud for their recommendations (https://stroudcenter.org).

C. **Water quality portal**. Bob and Joseph reported making several upgrades to our Water Quality Portal, with a new layer that includes the reaches assessed and links to the photos for each reach. The address to the upgraded Water Quality Portal is: http://147.185.239.141/qwa-new/#12/40.3093/-76.4788

4. **Second Countywide Strategizing Meeting.** Mike reported that the second countywide strategizing meeting on Fri. Dec. 13 at the LCCD office went very well. The agenda for the meeting appears below in these minutes in **Appendix 2.** Mike and Kara will be drafting the meeting minutes.

The meeting adjourned at 8:02 pm.

Respectfully submitted,

Michael Schroeder, Secretary Pro Tem

Appendix 1. Goals & Objectives of the QWA for the NFWF Grant

Quittapahilla Watershed Association
Michael Schroeder, President
Draft of Dec. 17, 2024

With this grant from the National Fish & Wildlife Foundation, we in the Quittapahilla Watershed Association hope to build our capacities as an all-volunteer, non-profit organization. For that capacity-building effort we identify five main goals, in rough order of priority, but bearing in mind that all these goals are interrelated:

1. Develop a viable strategic plan
2. Recruit & retain more volunteers
3. Expand and deepen our education & outreach initiatives

4. Enhance our digital presence
5. Cultivate and deepen alliances with key local actors involved in watershed-related work and with other watershed associations and stakeholders in the region and state

For each goal, we identify more specific objectives to help us reach that goal:

1. Develop a viable strategic plan
    A. Hire a consultant to guide us in undertaking a SWOT analysis (strengths, weaknesses, opportunities, threats)
    B. Revisit our mission statement and identify the specific short-term, medium-term, and long-term goals & objectives we hope to achieve as an organization
    C. Map out the steps we need to take in pursuit of those goals & objectives

2. Recruit & retain more volunteers
    A. Hire a consultant to help us develop strategies to achieve this goal
    B. Recruit and retain Board members and other volunteers who are willing to play an active role in the organization
    C. Recruit a deeper pool of volunteers for our Monitoring Program and for specific projects that help to achieve our main goals
    D. Develop and promote opportunities for internships for college students
    E. Develop a more robust digital & print marketing effort

3. Expand and deepen our education & outreach initiatives
    A. Develop a calendar of community events for tabling & outreach efforts and identify volunteers willing to staff those efforts
    B. Cultivate relationships with local school districts and teachers for instructional classroom visits and field trips
    C. Integrate our educational & outreach efforts with an enhanced digital presence
    D. Develop a series of reader-friendly “report cards” highlighting the most important findings of our Monitoring Program (see below)

4. Enhance our digital presence
    A. Make our website more compelling and engaging
    B. Expand and deepen our social media footprint
    C. Continue to develop our Water Quality Portal
    D. Develop a web-based story map highlighting key aspects of our work
    E. Develop a series of engaging & fun educational videos promoting our work

5. Cultivate and deepen alliances with key local actors involved in watershed-related work and with other watershed associations and stakeholders in the region and state
    A. Identify and reach out to active watershed associations in the region
    B. Deepen our relationship with statewide organizations & initiatives like POWR, ALLARM, Stroud Water Research Center, Master Watershed Steward Program, others
    C. Deepen our relationships with key local actors, including DFTU, LCCD, TLVC, LCCWA, Lebanon County Stormwater Consortium, Lebanon County Planning Dept, municipalities & municipal officials, and others
    D. Build on and expand our existing relationships with state offices, including PA-DEP, DCNR, SRBC, Fish & Boat Commission, others
    E. Deepen our relationship with Ecosystem Planning & Restoration (EPR), the company that Rocky Powell will be handing the reins to when he retires from his work as head of Clear Creeks Consulting

Developing a Report Card for Quittie Water Quality

By Bob Connell, circulated Nov. 18, 2024

One of the primary activities of the QWA is the collection of accurate information on the water quality of the Quittie. Communicating that information in a form that is readily understood by the public dramatically enhances the value of the QWA's effort to provide it. It is recommended here that our goal be something along the lines of the example below. Perhaps a scope of work task could be to conduct a workshop(s) with QWA members to develop such a report card. Not doing the report card for us, but instead guiding us through the process so that we can maintain/update it ourselves later on. Over time, the report card will show us our successes with water quality and the areas we need more focus on to address.

One approach to a water quality "Report Card". [1]

1Chesapeake Monitoring Cooperative, 2018. Data Interpretation and Synthesis Methods Manual.

An example of how this could look using existing data in QWA's water quality portal.

Quittapahilla Creek Nutrient Report Card

Decade	Phosphorus Average	# samples	Nitrogen Average	# samples	Total Average	# samples
1990's	2.43	72	0.00	71	1.22	143
2010's	0.85	287	0.10	293	0.47	580
2020's	1.05	158	0.15	117	0.67	275

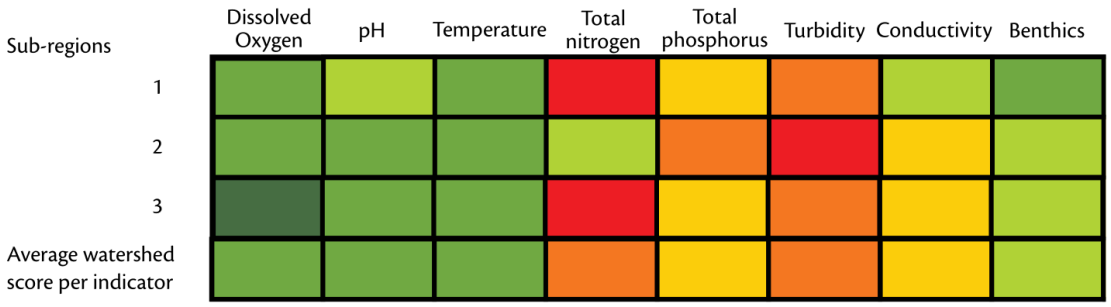
Based on scoring from the Chesapeake Monitoring Cooperative:

Ecologically relevant multiple thresholds for total nitrogen by ecoregion.

SYNTHESIS

Overall grade

The overall grade of the river or stream integrates the Water Quality Index (total nitrogen, total phosphorus, conductivity, and turbidity), bacteria, and benthic community results. These four items can be considered indexes that are integrated into an overall score. In addition to showing the overall score, another method for communicating the results that shows more detail is to generate a grid of the indicators that may be spatially averaged (i.e. all but bacteria) along one axis and the list of sub-watersheds on the other axis. The color in each grid cell would then indicate the grade for that indicator in that location.



Using a grid of scores is another method for communicating the results that shows more detail about what is happening with each indicator in each sub-region and the overall watershed.

1	≥0.06 - <0.09	≥0.12 - <0.17
0	≥0.09	≥0.17

Appendix 2. Agenda & Invitees for Second Countywide Strategizing Meeting, Friday, Dec. 13

Meeting Agenda
Second Strategizing Meeting for Watershed Work in Lebanon County
9-11 am, Friday, Dec. 13, LCCD Office

1. Welcome & introductions
2. Purpose of the meeting: to develop a process for (1) communication, (2) coordination, and hopefully (3) collaboration among the various stakeholders involved in efforts to improve the quality of the water in Lebanon County's waterways, especially for prioritizing, selecting, and scheduling projects and funding. The problems we seek to avoid: haphazard & uncoordinated projects and competing against ourselves for scarce funding.
3. Review of the results of the first strategizing meeting on Sept. 6 (see accompanying minutes)
    a. Consensus that the Watershed Action Team (WAT) of the LCCD should serve as umbrella organization for this group
    b. Consensus on the need for a process for identifying and prioritizing various types of projects, including:
        1) Agricultural BMPs
        2) Urban stormwater BMPs
        3) Stream restoration work
        4) Wetland mitigation banking
    c. Discussion on different views of the role of the LCCD on project proposals with and without CAP funding
    d. Discussion on different views on "documenting the need" for proposed projects – esp. on the amount of detail needed in the design & permitting phase and the criteria used for identifying and scheduling projects
    e. Discussion of the role to be played by this group moving forward.
4. Moving forward
    a. Agree on a name for this group and a meeting schedule: suggested: "Lebanon County Watersheds Working Group" (LCWWG) – suggested meeting quarterly at the LCCD office (e.g., February, May, September, December)
    b. Agree on who to include: Hammer Creek Working Group? Funding agencies? Lebanon Co Planning Dept?
    c. Develop a process for continuing communication – e.g. a digital platform to share documents and keep everyone informed of ongoing & planned projects & initiatives
    d. Develop a GIS- based map to keep track of the various projects ongoing & planned – coordinate with LCCD and Leb Co Planning Dept?

5. Next steps

Attendees at the Second Strategizing Meeting of Dec. 13

- Bethany Canner, Swatara Creek Watershed Assoc
- Russ Collins, Past President, DFTU, and member, QWA
- Bob Connell, member, QWA
- Hannah Hartman, District Manager, LCCD (via Zoom)
- Abigail Harvey, Executive Director, TLVC
- Katie Hollen, Watershed Specialist, LCCD and member, QWA
- Ned Gibble, Board Member, TLVC
- Kara Lubold, Environmental Grant Coordinator, LCCD, and Member, QWA
- Mike Morris, Water Program Specialist, PA-DEP
- Jon Niles, The Nature Conservancy
- Rocky Powell, Owner & Operator, CCC
- Michael Schroeder, President, QWA
- Bryan Seipp, Senior Environmental Scientist and Forester, EPR
- Maranda Smith, Agricultural Project Coordinator, LCCD
- Rich Starr, Vice President & Senior Water Resources Scientist, EPR

Appendix 3. Potential Models for Presenting Our Monitoring Results

On Wed. Nov. 20, Kara Lubold emailed Alyssa, Bob, Kent, Mike, and Katie as follows:

> I came across a macro testing blog article that led me to the website of a Maryland watershed group. Take a look at how the site is organized and how they present their monitoring results. Their approach is well-structured and offers valuable insights. Perhaps our group could adopt some of these ideas to improve our own monitoring and data presentation efforts.
>
> See the website of the Little Falls Watershed Alliance | Water Action in Maryland and DC:, at https://www.lfwa.org/

Appendix 4: Possible Upgrade to QWA Water Quality Portal

On Mon Nov 25, Bob Connell emailed Katie, Kent, Alyssa, Kara, Gary, Howard, Joseph, and Mike as follows:

> If you get the chance, please take a look at a possible new starting point for our Water Quality Portal at this link: **http://147.185.239.141/qwa-new/#12/40.3087/-76.4422** Improvements are:
>
> - works better with any size screen (PC, tablet, phone)
> - allows you to display just QWA routine sampling sites, QWA special study sites or sites maintained by other agencies (USGS, PA DEP) - look at the upper right corner of the screen.
> - allows you to use satellite image as the base map instead of the street map
> - allows you to measure distances
> - fewer clicks to get to the data - just click on the station, then click on the parameter group you want to look at. The next screen should look familiar.
> - when the data is listed, in addition to a button to plot the data, there is now a button to download the data you're looking at as a text file that is compatible with Excel or other spreadsheet programs.
>
> Let me know if you like this format better than the existing one. If so, I can make this the one that users will go to from the QWA web page.
>
> Thanks.
>
> Bob

The next day, Nov. 26, Mike responded:

> Bob,
>
> Excellent work, Bob! Looks great to me. I like how you simplified the navigation by separating out the three main categories of data: (1) Other Agency (2) QWA Routine, and (3) QWA Study. Much better.
>
> I wonder if we should reorder & rename them: (1) QWA Routine, (2) QWA Temp Study 2022, and (3) Other Agency.
>
> Also, would it be possible to add a fourth category? (4) Intern Reach Assessments. Then within that category, two options: (a) 2023, and (b) 2024 -- with layers that would then permit identifying the reaches and accessing for each reach: (a) the summary of conditions from the tables in the final reports, and (b) links to the photos.

Would that even be possible? Just some initial ideas -- great work!

Mike

Later that day, Bob responded:

Mike,

Thanks for reviewing the new portal. The answer is "yes" to all. I can re-order the filters list as you suggested.

With regard to the Reach Assessments, that is one reason I looked into using this new format. The new format is generated using qGIS, so any layers we can display in qGIS can be displayed on our web portal as well. I just need to see how Joe formats the photos and corresponding coordinates for the photos. Once we have that, we can build the qGIS layer and upload it to the portal.

Katie also provided some comments regarding retrieving data from multiple sites and a typo on the Streats layer (thank you Katie). I've fixed the typo and gave Katie a work-around on the multiple site retrieval. Over time, I'll work on updating the portal so that the work-around is no longer needed.

The work-around is as follows: Since the data download always comes through in the same format, you could pick your first station, download its data to Excel, then pick your next station, download data and append it to the first station in Excel (deleting the additional header row). With this approach, you can group as many stations as you want together.

Bob

On Dec. 1, Kent weighed in as follows:

Bob,

Thanks for the upgrades to the Water Quality Portal. I thought navigating the original information was pretty easy, and now, you have made it even better. I have not used it extensively, but it looks good.

Kent

Appendix 5. QWA Google Drive Backups

On Tues. Nov. 26, Bob Connell emailed Kent and cc'd Katie, Mike & Alyssa as follows:

> Hi Kent,
>
> It was good talking with you this evening. In the preparation of QWA's QAPP, you asked about how our field data stored in QWA's Google Drive is backed up. I'm glad that you asked. As I said on our call, it was my understanding that Google backed up these drives daily. After our call, I checked and found that Google does make backups, but only for disaster recovery. Google says that users are "operationally liable for protecting their own data, as accidental deletions or cyberattacks can lead to data loss."
>
> So... to that end. I will make a backup of the QWA Google Drive to a flash drive that I will keep in my office. I will do that monthly before our QWA meeting. I'll mention it to Alyssa so she may want to do the same. Multiple copies are good.
>
> The process is fairly easy. You go to our Google Site, select all the folders and documents on the main page, then click the Download button. This will zip (compress) all of our Google Drive folders and files into just one zip file that can be downloaded to a flash drive on your PC.
>
> So, for the QAPP, you can say that the Google Drive is backed up monthly.
>
> Bob

Appendix 6: Projects Map

On Friday, Dec. 13, Bob emailed Mike with the subject line "projects map" as follows:

> Mike,
>
> At our next meeting, let's discuss adding a layer to our portal for projects that will provide a link to the QWA website for each of our ongoing projects. That may address the county request today for quick, single point access to this info.
>
> Bob