CWSEC Biannual Meeting Minutes
June 8, 2016

Welcome
Introduction from Lisa Swanger. Attendees present: Jay Beeson, North Myrtle Beach; Travis Dupree, North Myrtle Beach; Dave Fuss, Horry County; John Adair, Surfside Beach; Tara Groner, Myrtle Beach; Terri Davis, Georgetown County; Lisa Swanger, CCU; Susan Libes, CCU WWA; Kelly Hall, CCU WWA; Emma Boyer, WRK; Michelle LaRocco, NI-WB NERR; Renee Williamson, MI2020; Amy Scaroni, Clemson Carolina Clear; Karen Fuss, CCU; Melissa Heintz, NI-WB NERR; Beth Thomas, NI-WB NERR; April Turner, SC Sea Grant; Dan Newquist, Waccamaw COG; Sean Torrens, SC DHEC; Shauna Stevens, SC DHEC; Erik Smith, NI-WB NERR.

SMS4 representatives missing: Kevin Chestnut, Conway; Paul Rotondo, Briarcliffe Acres; Ben Quattlebaum, Atlantic Beach.

Housekeeping
- December 16, 2015 meeting minutes were approved with minor typographical edits.
- 2016 half year activity summary was distributed. Attendees agreed to receive electric copies in the future to save paper.

CWSEC Core Education Provider Updates
- WWA – Susan Libes
  - Personnel changes.
  - Monitoring programs: Data Conferences scheduled for fall, River Gaging data requested by EPA for development of estuarine nutrient water quality standards, Long Bay Hypoxia Monitoring Consortium (LBHMC) new web pages and cards.
- NI-WB NERR Education Program – Beth Thomas
  - Attending NMEA 2016 Conference in Orlando, FL (June) and serving on two committees with Lisa Swanger and Karen Fuss for the 2017 NMEA Conference in Charleston, SC (June).
  - Swimming Pools to Tidal Pools Camp (July 2016) for underserved children in Georgetown. It offers swim lessons at the YMCA before taking the campers to Hobcaw for marine science lessons. The goal is to reduce the fear of water (physically and mentally). Last year’s pilot was very successful.
  - TOTE Teacher Workshop (July)
  - New Education Specialist (August)
  - New NERR Real Time WQ Exhibit at the Discovery Center (Fall)
  - NI-WB Clean Team Cleanup (Fall)
- NI-WB NERR Coastal Training Program – Michelle LaRocco
- Rain Harvesting/Gardens – installation and workshop to be held at new Waccamaw Library.
- Permeable Pavement - potential workshop with installation at new Publix in Pawleys Island. The stalls in the parking lot are permeable asphalt.
- Spring 2016 Shorescaping Workshop had low interest and was cancelled. Will try to reschedule with advertising from Carolina Clear during late Fall so plants can establish before winter sets in.
- Clean Coastal Ocean Waters workgroup in the Governors South Atlantic Alliance (GSAA). Attended “Train the Trainer” session focused on watershed management and volume reduction. All states in GSAA should run a workshop in each of the states in the Alliance. David Graves (SC DHEC) and Christine Cherry (regional coordinator for GSAA) are the SC representatives on this workgroup. They will be the ones to schedule this workshop. This workshop is scheduled for December 8th, it has been announced and registration is open. NI-WB CTP is assisting with the workshop is in partnership with Sea Grant and City of North Myrtle Beach.

- MI 2020 – Renee Williamson
  - July 5th cleanup.
  - Community survey results were used to generate a strategic plan, which led to a new mission statement.
  - New action items: new web site to be developed, speakers program for environmental experts, environmental education displays on Marshwalk need to be revamped (also need some at Jetty View and Bike Bridge). Tried to increase clean ups to twice a month, but turnout was poor. Recycling initiative in the HOAs. Promote recycling with promoting where the recycling is done.
  - US EPA 319 project is ongoing. Supporting installation of BMPs including a constructed wetland on MI2020 property at the south end of the Inlet.

- Waccamaw Riverkeeper – Emma Boyer
  - Volunteer Monitoring – Waccamaw Data Conference on 10/18/16
  - Cleanup initiative – will span the week of September 25, 2016 and World Rivers Day. It will also include Adopt-A-Landing groups. Helps to get more people on the water to collect more litter.
  - Collaborating with Lisa Swanger to correlate “Riverkeeper Challenge” program with SC core science standards for K-12 education.
  - Five sessions during summer for Teach My People program to connect K-12 students with the Waccamaw. Will include storm drain marking and activities with Lisa. Terri Davis offered to provide contacts with teachers in local schools.
  - Website - student intern will be developing links for community resources. Live data feeds, like live ticker with amount of litter collected.

- CWSEC – Lisa Swanger
  - Universities Council on Water Resources / National Institutes for Water Resources 2016 National Conference: presenting a poster on an experiential learning program (mapping / geocache-like activity) for reinforcing CWSEC educational programs, introducing participants to stormwater and watershed concepts, and building meaningful connections to watersheds.
  - Teach My People camp in June with Emma.
NOAA Climate Stewards grant – will be notified July 2016: accepted into round 1 of application stage. Purpose is to provide resources to maintain rain gardens previously installed at local schools and incorporate weather and science topics into stormwater/watershed lessons. Fall 2015 flood as example for students to relate to.

Spokesdog event for Pelicans Bark in the Park baseball game – August 19, 2016. See Lisa for tickets.

CWSEC database updates – summer and fall. Need to put together a wish list of what needs to be improved. Please send feedback to Lisa.

Develop and deliver lessons with state standards for Riverkeeper Challenge – summer and fall 2016.


ENVI 399 and two student interns – fall 2016.

Revamp and coordinate the 2017 Waccamaw Conference with WRK & NI-WB NERR CTP.

National Marine Educators Conference committees for the 2017 conference.

County Mentor for the SC Green Step Schools program.

Carolina Clear – Amy Scaroni

WBTW media campaign. Next segments are being done at The Farm at Carolina Forest. Following a stormwater pond over the next 6 months after the installation of 45-ft strip of wetland carpet (by Charleston Aquatics) and floating wetland installation. This provides opportunities to discuss all kinds of pond issues including geese. The Farm has also put some floating wetlands in other places. This pond posted “No fishing” because it is the terminus of drainage in this HOA. General discussion ensued about turtle and bird damage on floating wetlands. There are plans to plant canna around the perimeter of another pond as a tester for discouraging geese.

SC Sea Grant – April Turner

Stormwater Pond Research and Management Collaborative

- State of Knowledge report currently under external peer review.
- SC Water Resource Conference special session.

Water Quality Visualization Geospatial Tool

- Demo of the tool done in April 28th. Getting feedback for refinements
- Another session in August.
- Sea Grant is contacting additional partners and providing demonstrations through the summer.
- Tool development is underway and will be publically accessible in late summer.
- Presentations and demo planned at upcoming conferences this fall: Carolinas Integrated & Science Assessments and SC Water Resources Conference.

Website upgrade planned for the SC Coastal Information Network. Will include new resources on flooding.

Supported Research projects have been extended further into this year
Educational Messaging
Amy Scaroni provided two handouts: 1) Executive summary of the Carolina Clear 2013-2014 Telephone Survey results and 2) Findings. The review “committee” held a phone meeting on May 4th 2016 (with Katie Buckley, Amy Scaroni, Lisa Swanger, Dave Fuss and Tom Garigen) to discuss the data, findings and implications for future CWSEC activity planning. It led to the following recommendations:

- Develop separate messages to target beachgoers vs river recreation participants. Such as signage that identifies a water body and a fact about it.
- Develop a common strategy/campaign to promote no (or low) P in fertilizer.
  - Promote use of native plants that are publicized as not needing P fertilizer.
  - One example mentioned was to possibly incorporate this information into the curriculum for the Environmental Landscape Professional online course (course format is similar to Master Pond Manager).
- Create and host community events that focused on the value of healthy swimmable waters. These are celebration type events to do something fun on the water.
- Develop a strategy to involve business licensing offices in IDDE & spill prevention education. Target commercial audiences. Identify employee training resources. Information on specific products and how to use them to prevent spills.
- Pet waste was another target pollutant discussed during the committee meeting (but not listed on the handout).

Brainstorming
- Sean (SC DHEC) recommended the geocaching approach. He has used this successfully for the beach programming. Ran for about 3 to 4 years.
- Dave – can this be done with kids? Answer was yes.
- Travis – how about putting the information posted at the Clemson website about fertilizers on lawns into Lowes and Home Depots.
- Lisa – we will have to get permission from corporate headquarters for those chain stores. Perhaps a CWSEC letter to corporate will help. Local businesses are usually able to include.
- Travis – some manufacturers advertise that their product has low or no P. Make the case that we’re trying them to help promote their stock.
- Renee – add to Oyster Roast more educational activities modelling after Boone Hall Oyster Roast that has a Children’s “Corner”.
- Jay – For separate messaging, signage at public landings on the river are the way to go. Wildlife Action could help with getting the word out as could boating auxiliary clubs (Power Squadron). The latter give out information packets. They might be able to stuff some water quality outreach material in there. Marinas will also probably help. Boaters are typically local and have a vested interest in water quality. Locals classify waterway as the “river”.
- Dave – partner in with existing events and groups. This is labor efficient and avoids competition on scheduling.
- Dave – regarding business licensing as a point at which to educate on IDDE, Horry County recommends doing this at the time the business is getting set up. Do this by having some materials available to handout at this office. It is a problem handling mobile detailing business.
• Jay – this is hard if an SMS4 is really spread out like CMB. It’s hard to know what’s going on everywhere.
• Lisa – let me know if you’d like to discuss further prior to formal activity planning that will occur at the next ed provider meeting (fall). It’s best to start the discussions early to prepare for the December biannual meeting.

SMS4 Roundtable Discussion

• Jay – Keep NMB Beautiful has really helped. Really recommend it. NMB supports this group. Schools are good too – NMB arts students are painting dumpsters. Susan – are you keeping dumpster lids down? Tara – enforce ordinances. Jay – if they can’t get it open, then they leave the bags outside. Jay – answer is using roll off. Travis – bottom rusts out so using lids saves repair costs.
• Dave – who else has gotten audited by SC DHEC? NMB will be audited in January after Matt gets back from overseas deployment. Horry County got audited in April. Briarcliffe Acres and Atlantic Beach also got audited. SC DHEC seemed to be pretty happy. Shannon Hicks (DHEC, based in Charleston) is doing the construction plan review. In the past, reviewers from outside of the coastal area seemed confused about the conversion of temporary construction phase ponds to permanent post-construction ponds since that is unique to the coastal region. The final report is pending. Surfside has not been contacted yet. Conway is believed to have been / will be audited. Joe Fersner may be helping them prepare. Will need Kevin Chestnut to confirm. Dave – SC DHEC is never worried about MCM’s 1 and 2. We (CWSEC) are used as the model around the state.
• Dave – what is the current feeling about the beach monitoring issue? Sean is still getting calls. The originating issue seems to be that CMB is more contaminated than NMB or Garden City. Susan – there seems to be mixed messages in that 14 signs are posted long-term saying “Swimming is not advised within 200 feet of this sign especially after rainfall.” Susan: timescale mismatch in sampling, known changeability and 303d listing protocol. Other option is to use prediction such as at Howsthebeach.org. Travis – is the model being corrected? Dave – how well does this work? Sean – not great results. Using two models and merging them into a hybrid model that isn’t working too well. Sean – when we’re looking for a problem we’re going to find it. This is why we switched to no storm chasing. QR stickers were added to signs that direct beachgoers to the DHEC Beach Access Guide where the most recent data results are found. There is a time scale problem with regard to callers who want to make reservations in the next 24 hrs and want to know what the water quality will be when they arrive months later. Tara – we need to rewrite the signs. Lisa – several news reports included interviews of visitors blaming hotels for not informing them. Has anything been done in the past to specifically address hotels to inform guests once they arrive? For example a fact sheet to leave at front desk for employees to refer to if asked.

Guest Speaker – Dr. Erik Smith
Nutrient Dynamics in Stormwater Detention Ponds of Coastal South Carolina. The motivation behind this talk is to promote the use of low or no P fertilizers. Why care about stormwater ponds and their nutrient dynamics? This area does not have natural lakes and ponds. 2013 pond inventory: 21,594 ponds. 29,395 aces in 8 coastal counties. Development related ponds 43% in number (9269) and 41% in acreage. The rest are rural/agricultural. Exponential increase. 100 ponds a year increase.
4% increase in surface area per year since 1990. Going from a natural lentic ecosystem (seasonally flooded, groundwater dominated, closed canopy, low light) to a created ecosystem (increase permanent surface water, residence time and light availability). How does this re-plumbing impact the transport and transformation of material in the coastal zone and what’s the cumulative impact on coastal waters?

How variable are nutrients in residential ponds? Based on a study of 26 residential ponds with varying development density. Sampled 8 times from May to September. All freshwater. Some ponds were dug and development delayed.

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TN and TP well correlated although TP has a smaller range.

N and P control plant growth since K is replete. N/P ratio is much higher than needed. Conclusion is that P is limiting so chlorophyll concentrations are positively correlated with TP. This is the current dogma in lake ecology, whereas the salty waters tend to be nitrogen limited. This is why P bans on detergents were enacted. This is being reexamined.

How do ponds respond to varying nutrient concentrations? This was explored with assays in which nitrogen and phosphorus were added to pond waters in a lab setting and algal abundance was monitored over 3 days.

12 months three times a year. Out of 36 experiments, only 7 showed no significant results. Most showed some degree of nitrogen limitation. Only once was exclusive P limitation observed. Most are serial N limited or were co limited. The inorganic nutrient ratio (DIN/DIP) predicted the response. The lower the N/P ratio, the higher the increase in chlorophyll. This suggests we should also be concerned about nitrogen inputs to ponds. Many limitations to these assays: just focused on free-floating algae, not other plants or sediments and short-term responses. Regardless, we need to consider nitrogen as well as phosphorus.

How well do ponds retain nitrogen and phosphorus? Sea Grant funded project – Hydrology and pollutant removal performance in stormwater detention ponds. This is including groundwater mass balance. Being performed in three ponds. No vegetated buffers, littoral shelf or forebay. One pond had rooted macrophytes and the other was being managed to remove algae. Rain event sampling. No seasonal cycles in average inlet and outlet concentrations. Ponds are removing 65-70% P and 40-45% N. With less nitrogen removal, more is going into marine waters (and TN/TP is increased) where algae are N limited. P removal is probably particle based. N is most dissolved and thus can’t get removed by settling. Nutrients are also introduced into the ponds via sheet flow, groundwater and rain. 20 to 30% of rain is delivered via sheet flow and the N and P concentrations in sheet flow are much higher than the pipes. This makes the removal efficiencies appear to be higher. This is another reason to ring ponds with vegetated buffers.

Lunch and Continued Discussions