

TOWN OF SOUTH BETHANY
Canal Water Quality Committee Meeting Minutes
Thursday, April 28, 2016 at 10:00 AM
Location: South Bethany Town Hall

1. Call Meeting to Order	George Junkin
2. Citizen Monitoring	Dave Wilson
3. Oyster Gardening	Tony Caputo
4. Status of Grant Activity at Sandpiper Pines and York Canal	George Junkin
5. CIB Status on Wet Pond at Sea Colony	George Junkin
6. Organization of CWQC for next year	George Junkin Frank Weisgerber
7. Public outreach meeting?	All
8. What else should we be doing?	All
9. Adjournment	

Agenda Item 1 – George called the meeting to order at 10:00. Members present were George Junkin, Jack Whitney, Tony Caputo, Al Allenspach and Dave Wilson.

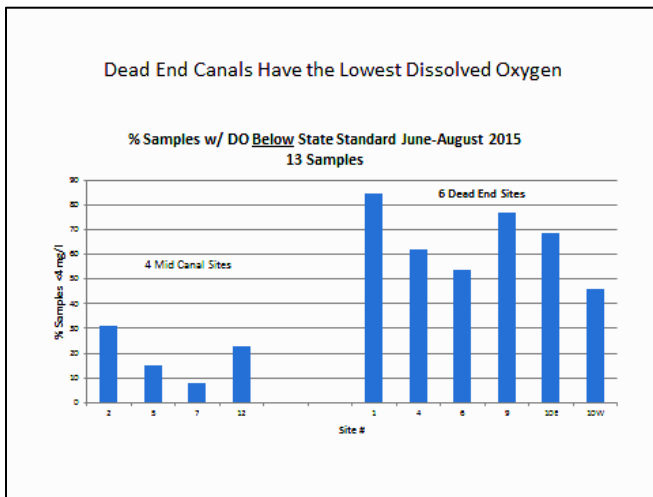
Agenda Item 2 – Citizen Monitoring – Dave Wilson presented the following slides.

<p>Citizen Monitoring Program Team Members</p> <ul style="list-style-type: none"> • Tony Caputo • Glenn Dallas • Frank McNeice ? • George Junkin (Continuous Monitors) • Dick Oliver • Jack Whitney • Dave Wilson 	<p>Water Monitoring</p> <ul style="list-style-type: none"> • Measure weekly from May-September then biweekly Oct-Apr <ul style="list-style-type: none"> – Air and water temperature – Salinity – Dissolved Oxygen – Secchi depth (water clarity) • Take biweekly water samples for U of Del analysis for <ul style="list-style-type: none"> – Bacteria – Nutrients – Harmful algae blooms • Assess algae extent • Measurements at 11 sites
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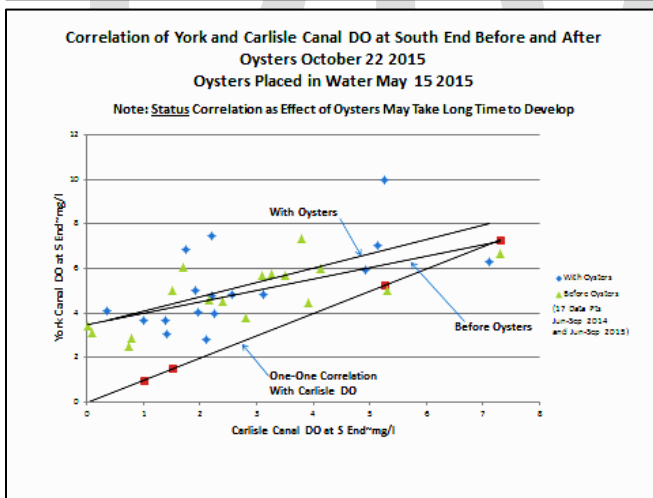
Some discussion relative to the above slides was;

- George reported that Frank McNeice would be returning by late May and it was George’s opinion that Frank would be available as a team member. (An update is that Frank is not currently expected in SB until, at the earliest, mid-June.)
- George reported that he was waiting for data from DEOS before he publishes last year’s continuous monitor data. He also reported that he would be available to help with weekly monitoring.

- It was mentioned that Joe Farrell is retiring from U of D and that Ed Whereat has some serious health issues.
- The status of the algae harvester was discussed. Jack reported that he had seen it within the last month or so in one of our canals. George reported that he had heard that it was down for maintenance. Maybe it broke down after Jack saw it in our canals. (Latest update from Williams, Charles E. (DNREC) is “We have been monitoring the macro-algae for the last month. We are in the process of getting our harvester up and running for the season. Right now, Keenwick West has a bigger problem than South Bethany. We will get to South Bethany after we have addressed the problem at Keenwick West.”



- Oyster Project in York Canal
- Two year program to evaluate effect of 200 cages with oysters on
 - Dissolved oxygen
 - Salinity
 - Turbidity
 - Cages located in mid canal along bulkheads on E and W sides
 - Floating plants adjacent to some cages
 - Two continuous monitors on west side of York canal
 - Control monitor located at south end of Carlisle canal
 - Monitors restarted April 15-16 after they were turned off in November



Agenda Item 3 – Oyster Gardening Tony reported;

- He has been in communication with the approximately 38 oyster gardeners in the 19930 zip code area.
- The program appears to be going well and Tony helps out gardeners who come to him with issues.

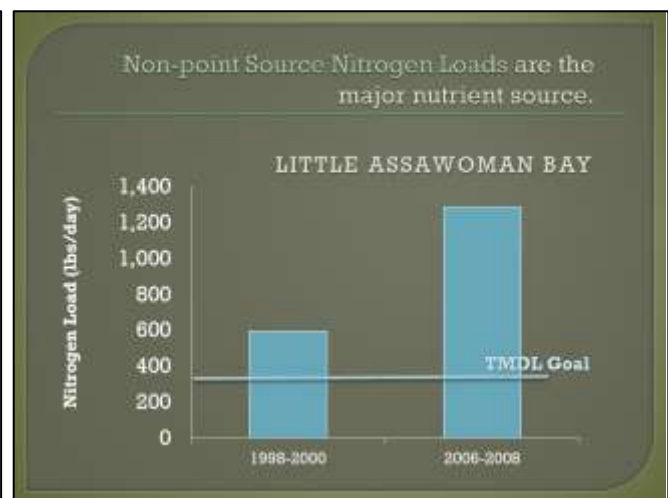
- Bob Collins is the CIB leader for the oyster gardening program. Bob is planning to have his annual gardening meeting around June 2.
- Tony reported that his oysters were doing very well while Al reported that he had had significant mortality. There was no opinion expressed as to why this was so other than that the oysters do need circulation.

Agenda Item 4 – Status of Grant Activity George reported;

- The Sandpiper Pines Retrofit Project was on schedule for completion by Memorial Day. The concrete work has been completed. This includes raising the grates and installing curbs to keep the asphalt from flowing into the rain garden depression.
- The information from the CIB is that the oysters in the York Canal are doing very well. The mortality rate is low and consistent with what they expected. The mortality rate at one location was essentially zero. This is likely due to the fact that the homeowner treats “his” oysters with tender loving care by flushing them regularly. Dave’s chart above shows that the oysters may be slightly improving the DO in the York Canal. Some of the plants died that were located in the center of the floating mats. The CIB intends to replace these plants with plants harvested from the Inland Bays. The oysters will be removed from the Canal in December 2016. A final report will be issued after that. George will request from the CIB that some of the removed oysters be place somewhere in the South Bethany Area.
- George was tasked to get a copy of the presentation that Marianne Walch made recently relative to the oyster project.


Agenda Item 5 – CIB Status for Wet Pond at Sea Colony

- George presented the slides that Larry Trout from RK&K presented at the Sea Colony Wet Pond Status Meeting on March 23, 2016 at the CIB. A selection of slides from the presentation is copied below.



Anchorage Canal is a part of the Town of South Bethany canal system on Little Assawoman Bay.

- Highly impervious drainage area, largest of all canals
- Receives runoff from storm drains under Rte. 1
- High pollutant loads
 - 392 lbs N/yr
 - 33 lbs P/yr
 - First flush Coliforms 50,000-800,000 units
- Highly eutrophic



Anchorage Canal Surface Drainage Area & Communities



In 2010 the Center for Watershed Protection and JMT presented 25 potential retrofits (conceptual designs and budgetary costs) that would minimize nutrient loading into the Anchorage Canal while also control floodwater caused by rainfall. These retrofits were documented in the report *Conceptual Pollution and Stormwater Control Strategy for the Anchorage Canal Drainage Area*. This effort was funded by a grant that South Bethany was instrumental in getting from the US Army Corps of Engineers. The grant plus matching funds amounted to about \$72,000. The slides that follow show some of the retrofits that have been accomplished and some that are in the process of being completed.

Desktop Analysis

- Rapidly search for and identify potential retrofit sites across the subwatershed
- Save time in the field



Project One-Wet Swale 1

- Along Pennsylvania Ave. in front of Sea Colony
- Converted existing ditch to Wet Swale
- Regraded along PA Ave. shoulder to provide filter strip



Project One-Wet Swale 2

- Along Pennsylvania Ave. in front of Sea Colony
- Converted existing ditch to Wet Swale
- Regraded along PA Ave. shoulder to provide filter strip



Project One-Infiltration Pits

- Serve Sea Colony Parking Lots adjacent to Pennsylvania Ave
- Added more curb openings
- Infiltration pits downstream of curb openings



Project Two-Median Bioretention



Project Efficiency

Wetswale & Pits

Source	Amount
DNREC CWQCP	\$95,866
CIB	\$31,235
Seacology	\$21,000
TOTAL CASH	\$148,101
LEVERAGED IN-KIND	\$42,812
TOTAL	\$190,913
Lbs TP reduced	3.44
Lbs TN reduced	23.7
\$/lb/TP over 30 yrs.	\$1,850
\$/lb/TN over 30 yrs.	\$268

Median Bioretention

Source	Amount
DNREC NPS Grant	\$44,287
CIB	\$21,000
South Bethany	\$18,185
Middlesex Beach	\$700
DE Forest Service	\$30,000
TOTAL CASH	\$94,182
LEVERAGED IN-KIND	\$19,589
TOTAL	\$113,771
Lbs TP reduced	5.28
Lbs TN reduced	27.35
\$/lb/TP over 30 yrs.	\$1,054
\$/lb/TN over 30 yrs.	\$126

Exclude maintenance costs
\$/lb calculated separately for TP and TN.

Project Four-R/W Bioretention Areas

- Along Coastal Hwy on East and West Sides
- Converted existing swale to bioretention
- Used biochar as soil amendment for a few



Continuing Projects: Sandpiper Pines Bioretention and Infiltration Areas

- Concept design for 12 facilities around residential catch basins – funded by USEPA completed in JUL 2014.
- 6 in-situ bioretention /infiltration trenches and 2 infiltration trenches
- 10 acres treated
 - 15 lbs nitrogen removed
 - 2 lbs phosphorus removed
 - 452 lbs sediment removed
- Grant to be awarded by DNREC Community Water Quality Improvement Grant Program in late 2014.



Continuing Projects: Highway Wetland/Wetpond

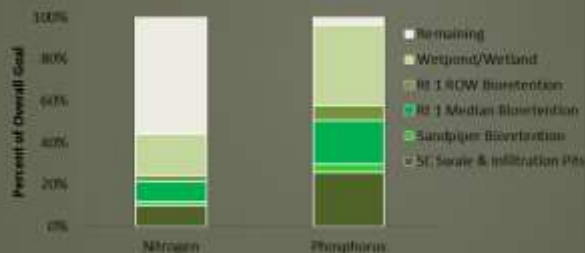
- Sub-surface flow through wetland-wetpond
- Utilize slip ramp and grassed median and create new turn lane
- Funded by TAP funding through DelDOT
- Treat 41.5 acres for 8.1% of TN and 36.6% of TP TMDL goals
- Improve safety by eliminating an unsignalized pedestrian crossing on Pennsylvania Ave
- Estimated construction cost of \$335,470



Highway Wetland/Wetpond Site



Progress Towards Pollution Reduction Goals for the Anchorage Canal Drainage Area Stormwater Retrofit Demonstration Project



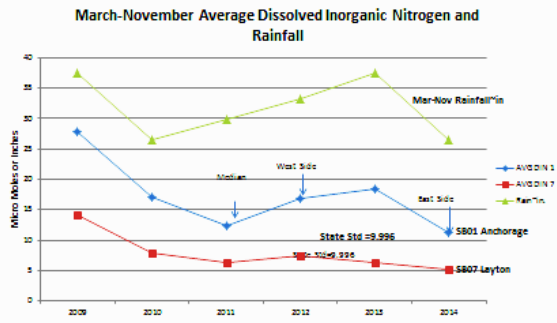
Project goal is a 40% reduction in Total Nitrogen and Total Phosphorus loads to the Coastal Bay

The chart to the left shows a higher percentage reduction in Phosphorous than in Nitrogen. Dave Wilson has analyzed nutrient data taken by our water monitors that shows there have been a slight reduction in Nitrogen and not much change in Phosphorus in our canals over the past few years.

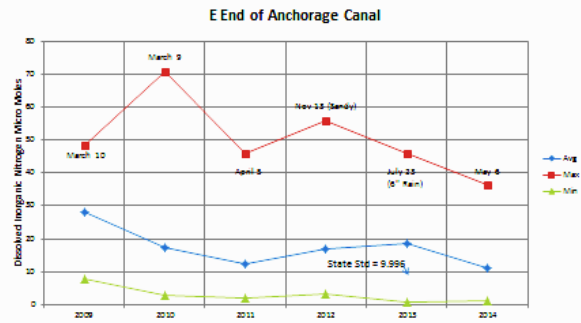
On the next page are a few of Dave's Charts. They were discussed in the meeting but were not presented. George was tasked with talking to Marianne Walch relative to this topic.

During the wet pond discussions, a question came up relative to what the Status of the Inland Bays Foundation (IBF) Appeal to DNREC was. This appeal was about designating the Anchorage Forebay as an MS4. Tony reported that the IBF was not going forward with their appeal to DNREC. The IBF was instead requesting that the EPA, Region III, in Philadelphia to designate and to regulate small municipal separate storm water systems (MS4s) discharging into the Inland Bays Watershed. See Coastal Point Article http://coastalpoint.com/content/inland-bays-foundation-sends-petition-epa_04_29_2016

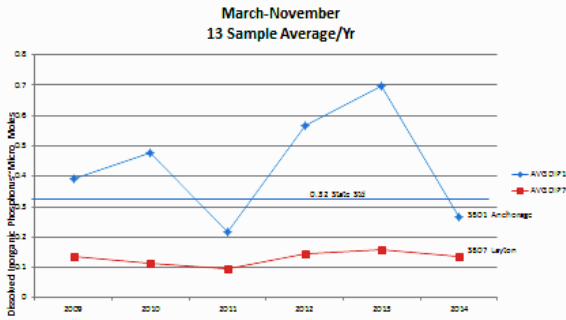
Dissolved Inorganic Nitrogen Trends with Rainfall E End of Anchorage (SB01) and Mid Layton Canals (SB07) 2009-2014



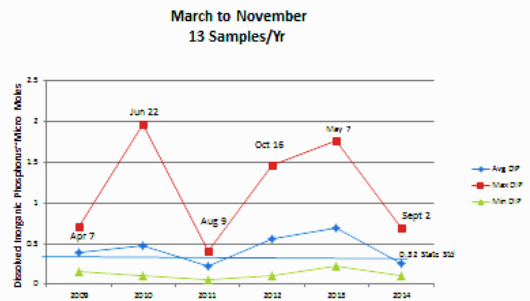
Max, Min and Average Dissolved Inorganic Nitrogen Mar- Nov 2009-2014



Average Dissolved Inorganic Phosphorus E End of Anchorage and Layton Canals 2009-2014



Max, Min and Average Dissolved Inorganic Phosphorus E End of Anchorage Canal 2009-2014



Route 1 Storm Drain Improvements Have Reduced Dissolved Inorganic Nitrogen to Date By 35%

- Dissolved Inorganic Nitrogen Reduced
 - 34-56% for heavy rainfall in 2013 relative to 2009
 - 35% for moderate rainfall in 2014 relative to 2010
 - 2014 nine month average is still 12% over State standard for 2014 at east end of Anchorage
- Dissolved Inorganic Phosphorus Mixed
 - Increased 17% to 78% for heavy rainfall in 2013 relative to 2009
 - Decreased 45% for moderate rainfall in 2014 at Anchorage
 - Increased 21% for moderate rainfall in 2014 at Layton
 - 2014 nine month average was 17% below the State standard at Anchorage and 57% below the State standard at Layton
 - Data show DIP is not a strong function of rain

Agenda Item 6 – Organization of the CWQC for next year

- George reported that he will no longer be a Council Member as of June 1 and that he would no longer be the chair for the CWQC.
- George committed to continue to be an active member of the CWQC.
- Frank Weisgerber has volunteered to be the chair for the CWQC.
- Council has created [South Bethany Committee Guidelines Adopted 3 24 16.pdf](#) which is located on the “Bulletin Board” link on the South Bethany web site. The guidelines require that people who want to be on Town committees need to fill out a form, [2016 - 2017 Committee Participation Request Form](#), located on the “Forms” link on the South Bethany web site.
- George handed out the request forms to those present. All existing members who were present at the meeting (George Junkin, Dave Wilson, Al Allenspach, Jack Whitney, and Tony Caputo) returned the forms to George.

Agenda Item 7 – Public Outreach Meeting

- At the last CWQC Meeting the committee had decided to use News Updates instead of a public meeting to accomplish public outreach, since more homeowners would be contacted by the News Updates than by a public meeting.
- Since our current grant requires public outreach, George Contacted Sharon Webb at DNREC to get her opinion on the issue. She agreed that the News Updates would certainly be more efficient.
- The committee felt that, if we were to have a public meeting, we should combine it with the SLR & SS Committee. They felt that a good time would be Friday evening at about 5:00 or Saturday morning at 10:00 in July or August.

Agenda Item 8 – What else should we be doing?

- The committee felt that we should combine with SLR&SS for a public outreach meeting in the summer that would address water, both quantity and quality.
- We should send something to the mowers and lawn care vendors who have mercantile licenses that explain to them the water quality issues associated with turf grass.
- Since the Town now has a boat, we should petition the Town to do something to effect cleanup of canal ends on a regular basis. It would be difficult to schedule since it would depend on the wind to blow the trash towards the end of the canals.
- We should petition the Town to eliminate vegetation that overhangs the canals.

Agenda Item 9 – Adjournment

Dave Wilson made the motion to adjourn. Al Allenspach seconded the motion. The motion carried unanimously.