



Carroll County Environmental Advisory Council

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Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land
& Resource Management

Meeting Summary for January 20, 2016

Members

Karen Leatherwood, Chair
Curtis Barrett
Ellen Cutsail – Absent
David Hynes
Amy Krebs
Frank Vleck
Sandy Zebal

County Government

Brenda Dinne, Special Projects Coordinator /
EAC Staff Liaison
Cindy Myers-Crumbacker, Recording Secretary
Tom Devilbiss, Director, Department of Land
and Resource Management

Other Attendees

None

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the January 20, 2016, meeting to order at 6:30 p.m. in the Reagan Room of the County Office Building.

2. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

3. APPROVAL OF MEETING MINUTES –

No corrections or comments were made to the December minutes.

APPROVAL OF MINUTES – Motion 241-16: Motion was made by Curtis Barrett and seconded by David Hynes to approve the December 17, 2015, meeting minutes. Motion carried.

4. CHAIR AND COMMITTEE REPORTS –

a. Solid Waste Subcommittee:

Ms. Leatherwood informed the Council that the committee is continuing to meet monthly, but there is nothing new to report at this time.

5. STAFF LIASION REPORT

Ms. Dinne reported that items thus far for the January meeting agenda include: discussion of residential solar size requirements and a status update on the Environmental Awareness Awards.

Ms. Dinne informed the Council that the meetings will no longer be video recorded.

The annual Financial Disclosure Forms are due by the end of January. A notary is available in the Resource Management office, the Ag Preservation office, and the Office of Administrative Hearings (which is where the forms need to be turned in). Ms. Dinne suggested, for their convenience, the members could stop in to notarize the forms before or after the joint meeting with the Commissioners on January 21.

Ms. Dinne asked if the group would like to continue receiving paper handouts or prefer to receive them electronically. The consensus was to receive paper copies of the agenda and significant items to be discussed. However, they did not feel they needed paper copies of the minutes or of large volumes of information by email, such as the research circulated for the residential solar size requirements project.

Correspondence was received from Julie Arbit with the Weed Warriors of Carroll County. She requested her program be included in the Environmental Stewardship booklet. Weed Warriors is associated with the Carroll County Forestry Board and is looking for volunteers to pull weeds at parks. They are currently focused on Piney Run and plan to add Charlotte's Quest in two years. While the Weed Warriors function does not generally fit with the content of the booklet, and will not be updated again until 2017, the EAC agreed to request that next year Ms. Arbit send facts related to the environmental benefit of the Weed Warriors' work (such as number of acres cleared of noxious weeds). The EAC will review the information and consider at that time whether to include it. Ms. Arbit also requested that a link be added to the EAC website to the Weed Warriors website. The EAC decided that, although the general policy is to only include on the webpage links to other government organizations, a link could be added in this case since the Weed Warriors serve a quasi-government function as a subset of the Carroll County Forestry Board. The suggestion was made to note next to the link that Service Learning Hours may be available. Ms. Dinne will respond to this correspondence to convey the EAC's discussion and decisions.

6. OLD BUSINESS –

a. Business Community MS4 Workshop

Ms. Leatherwood thanked everyone for their hard work on the workshop. The evaluations reflected an overall positive response. Ms. Krebs noted that the only items with a fair rating were the meeting time and the length of the meeting. Mr. Hynes added that the business speakers were well received. He was pleased that the business community was well represented.

Ms. Dinne shared that, of the 16 registered, 10 attended, and there was one walk-in attendee. Three municipalities were represented. It was suggested that a different location could be used if the group remains this size. The Reagan Room of the County Office Building would be well suited, but Ms. Dinne offered that it was seen as a benefit to hold the workshop at that location not associated with the County Office Building. The members discussed holding the workshop from 3:00 to 5:00 p.m. next time to help address the feedback.

Mr. Barrett asked if there is a report with the number of violations and resolutions. Mr. Devilbiss answered that the NPDES Annual Report contains this information. Ms. Dinne added

that there were 15 in 2015. Mr. Devilbiss indicated that most of them were abated. There was no need to bring MDE in on any of the issues. Mr. Devilbiss praised Mr. Edwards on educating and correcting the problems that were reported.

Ms. Leatherwood relayed that she is still not sure what else could be done to encourage more participation. Mr. Hynes suggested having a booth at the Ag Fair. Ms. Dinne replied that Mr. Edwards is already doing this. In addition, the EAC had previously offered to volunteer at the booth at whichever events it was needed, and Ms. Dinne had passed this offer along to Mr. Edwards. However, she added that she could suggest to him that the EAC's materials be available as well.

Mr. Devilbiss thanked the EAC members for their hard work on this project.

b. 2016 Environmental Awareness Awards

A news release for the 2016 Environmental Awareness Awards was sent out on January 7. The EAC webpage changes to reflect the awards nomination information and the CCG homepage banner went live on January 6 and 7. The nomination packets were sent out to the distribution list. Some of the recipients receive electronic copies and some receive hardcopies to set out or to distribute. The Council had previously decided that all members will review all of the applications, rather than forming a committee. Ms. Dinne said the first nomination has been received. Nominations will be sent to the EAC members once five or more have been submitted. Each member is to send their votes by email to Ms. Dinne to tally the results. The results will be discussed at the March meeting. Ms. Leatherwood offered to *request* of Mike McMullin, the president of the Carroll County Chamber of Commerce, to *interview* an EAC member on their radio program to help get the word out about the awards.

c. Joint Meeting with Board of County Commissioners – Review Agenda

Ms. Dinne reviewed the agenda for the joint meeting with the Board scheduled for the following day, January 21, 2016. She asked the members to volunteer to lead the different agenda items or portions thereof. Mr. Devilbiss will open the meeting with the purpose of the meeting, followed by introductions. Ms. Dinne will briefly review the role of the EAC. Ms. Zebal then will briefly review the 2015 Annual Report. Moving on to the proposed 2016 Work Plan, Mr. Vleck will summarize the solar-related projects – Solar Surface Area Requirements for Residential Districts project and Residential Solar Public Outreach Materials. Mr. Barrett will follow by reviewing the following projects: General Public Community MS4 Workshop; 2016 Environmental Awareness Awards; and Amend Chapter 31 of Code to Remove Tree Commission. The EAC will have one hour to cover the agenda items. Mr. Hynes and Ms. Krebs will not be able to attend the joint meeting.

d. Residential Solar Size Requirements-Review of Other Jurisdictions' Requirements

Ms. Dinne noted that the final overall scope of work, as well as the EAC's working document for the process, were emailed to the members with the agenda and draft minutes. She also noted that Mr. Voight was to research the average electricity use per household, but was unexpectedly unable to attend the meeting this evening. The discussion tonight is to focus on review of requirements of other Maryland jurisdictions.

Ms. Leatherwood was assigned to research requirements in many of the **rural counties** in Maryland. She said she found very little in their codes, particularly related to ground-mounted

systems. Those that had requirements in place primarily seemed to allow systems on the roof. If ground-mounted systems were mentioned, they had to follow the setbacks and size requirements of other accessory uses. Three of the counties did address utility-scale systems, but not residential.

Ms. Zebal checked on **Baltimore County**. Baltimore County also required ground-mounted systems to follow the setback and size requirements of other accessory uses. She called the zoning office in Baltimore County. The equipment cannot cover more than 40 percent of the lot and is restricted to 15 feet in height. The code for roof mounted systems was recently revised to address access to roofs by firefighters. Separations between panels and around chimneys were made less restrictive.

Mr. Hynes visited the **Howard County** offices for information. Electrical and building permits are required for residential solar installations. Therefore, most are reviewed on a case by case basis. No specific height requirements are included in the code. He was told most requests are for roof-mounted facilities, which generally get approved.

Mr. Hynes added that a building permit is needed in **Baltimore City** as well. Panels cannot be raised more than 42 inches above the roof surface

Ms. Krebs looked at **Eastern Shore** counties. She said that, because stormwater is regulated, there are requirements in some areas for spacing and angles.

Mr. Vleck researched Alleghany, **Garrett**, and Washington Counties. He said he did not find any requirements for Garrett County. However, he found an article that stated that Garrett County has a signed agreement with Solar City. They have five spots around the county to provide solar power for utilities.

Mr. Vleck also checked on **Washington County**. He felt they had substantial information available, particularly finding the three-page section regarding solar and wind turbine facilities useful. He said solar facilities are treated as accessory uses in all zoning districts. Bulk requirements included 6-foot setbacks and 20-foot maximum height, and the footprint cannot exceed half the building footprint or 600 square feet – whichever is greater. There are some exceptions. They are permitted on the roof or on a wall, not to extend beyond 12 feet above the roofline. Applicants are required to provide a structural certificate to show the structure can accommodate the proposal. They can be located on accessory structures as well. The requirements include a provision making it the applicant's responsibility to coordinate with neighbors and secure any needed easements to prevent structures or landscaping on adjacent properties that would block the sun. There is no recourse with the County; it must be worked out with the neighbor.

Ms. Zebal also researched **Frederick County**. Wall or roof-mounted solar collection systems are allowed in all zoning districts. Solar arrays are permitted in any zoning district. The total square footage of all arrays cannot exceed the footprint of the principle structure. The footprint of an individual array shall not exceed one half the footprint of the principle structure or 600 square feet.

Mr. Barrett researched **Montgomery, Anne Arundel, Prince George's, Calvert, and St. Mary's Counties**. He said many are promoting the use of solar to receive tax credits. He was not able to find the requirements for Anne Arundel or Calvert Counties. The standards for Prince George's and St. Mary's Counties are the same. The solar facilities must meet accessory structure setbacks and height requirements, although there is a 20-foot maximum height for freestanding systems. Three of the counties for which he found information required permits.

Members volunteered to call one of three counties to inquire if their solar requirements are working as desired, and if not, what they might change. Ms. Leatherwood volunteered to call Washington County, Mr. Barrett to call Montgomery County, and Ms. Zebal to call Frederick County. The results of these follow-up conversations are to be emailed to Ms. Krebs within the next week.

Ms. Krebs volunteered to prepare a *matrix* to compare the various requirements related to size. The matrix/spreadsheet will include both the information on the Maryland counties as well as the information on other jurisdictions provided by Ms. Dinne in December. The follow up phone conversations with Washington, Montgomery, and Frederick Counties are to be incorporated into the matrix. Ms. Krebs will email the matrix prior to the next meeting so all the members have time to review it before the meeting.

Ms. Krebs added that she does not feel that the size of a residential solar facility should be based on the size of the house. The size of the property would be a better measure. Also, the solar reflection on neighbors should be considered.

Ms. Dinne suggested that the EAC members take time to *review* the *options* related to size requirements originally provided to them, as well as the requirements of *other jurisdictions* around the country, before discussing recommendations or deciding to mirror another Maryland county's requirements.

Ms. Dinne also clarified that the research and recommendations should include both roof- and ground-mounted systems. However, they may want to address wall-mounted systems as well to be proactive.

7. NEW BUSINESS –

Nothing to report.

8. OTHER –

Mr. Hynes asked if the EAC was going to pursue a project to eliminate the requirement for people to replace their conventional septic systems with best available technology (BAT) systems. Ms. Dinne replied that this requirement is a State law, and the regulations would have to be changed. Ms. Leatherwood stated that this project would be too big of an issue for the EAC and would not necessarily fit with the EAC's charge.

9. ADJOURN REGULAR MEETING –

ADJOURNMENT – MOTION 242-16: Motion was made by Curtis Barrett and seconded by Frank Vleck to adjourn the January meeting. Motion carried.

The meeting adjourned at 8:24 p.m. The next regular monthly meeting is scheduled for Wednesday, February 17, 2016 at 3:00 p.m. in the Reagan Room of the County Office Building.



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Meeting Summary for February 17, 2016

Members

Karen Leatherwood, Chair
Curtis Barrett
Ellen Cutsail
David Hynes – Absent
Amy Krebs – Absent
Frank Vleck
Sandy Zebal

County Government

Brenda Dinne, Special Projects Coordinator /
EAC Staff Liaison
Cindy Myers-Crumbacker, Recording Secretary

Other Attendees

None

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the February 17, 2016, meeting to order at 2:58 p.m. in the Reagan Room of the County Office Building.

2. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

3. APPROVAL OF MEETING MINUTES –

Ms. Zebal offered revisions to the minutes (see attached) regarding a couple items under the residential solar project. Additional discussion was held. Minutes were then approved with changes.

APPROVAL OF MINUTES – Motion 243-16: Motion was made by Curtis Barrett and seconded by Frank Vleck to approve the January 20, 2016, meeting minutes as revised. Motion carried.

4. CHAIR AND COMMITTEE REPORTS –

a. Solid Waste Subcommittee:

Ms. Leatherwood informed the Environmental Advisory Council (EAC) that the Solid Waste Advisory Council would be presenting options and seeking direction from the Commissioners on Thursday, February 18, regarding short- and long-term recommendations for diverting and recycling some of the waste stream in the county.

5. STAFF LIASION REPORT

Ms. Dinne reported that items thus far for the March meeting agenda included continued discussion of residential solar surface area requirements and discussion on the results of the tally of votes for the Environmental Awareness Awards. Recommendations on residential solar surface area requirements are due to the Commissioners by the end of April.

Ms. Dinne informed the Committee that we will hold off adding to the agenda the General Public MS4 Workshop and Lightweight Aggregate projects until some of the early year deadlines pass.

Financial Disclosure Forms were due by the end of January. Ms. Dinne asked members to get these turned in to the Ethics Commissioners as soon as possible if they have not done so already.

The Board requested at the annual joint meeting for the EAC to send copies of the Environmental Stewardship booklets to the Carroll County delegation. The booklets were sent to the delegation with cover letters signed by Ms. Leatherwood.

The Board invited two people to serve on the EAC to fill the current vacancies. Richard Lord has accepted the invitation. We are still waiting to hear from the other invitee. Once she receives copies of the acceptance letters, the new members will be added to the member lists, and Ms. Dinne will provide updated copies to the EAC members.

Several members asked for another copy of the 2016 Meeting Dates. Therefore, Ms. Dinne provided an additional copy to all members to add to their member materials packets. She indicated that the list of dates is also available on the EAC webpage.

6. OLD BUSINESS –

a. 2016 Environmental Awareness Awards Update

Ms. Leatherwood was interviewed by Mike McMullen, President of the Chamber of Commerce, for the Chamber Chat radio show on WTTR. It is scheduled to air at 8:40 AM on Sunday, February 21. Ms. Leatherwood noted that in the future the EAC should remember the Chamber Chat as a means to get the word out. However, it would be better to contact the Chamber about two months ahead of the date of the item/event of interest.

Ms. Dinne shared that a news release was sent out on February 11. She said 11 nominations have been received so far. Mr. Vleck said he has a student entry to send in. Ms. Leatherwood requested Ms. Dinne send an email to Mr. Melvin Baile requesting him to spread the word in the agricultural community about the awards.

Ms. Dinne will send the nominations received thus far to the EAC the day after the meeting. Votes are to be sent to her by March 14. She will tally the votes and provide the results for discussion at the March 16 EAC meeting.

Ms. Leatherwood volunteered to email Wayne Carter with the Carroll County Times to see if he will write an article about the awards.

The Awards will be presented with the Board of County Commissioners on Thursday, April 21, at 1:30 PM. This is the day before Earth Day. Ms. Dinne will verify the location as the date gets closer.

b. Residential Solar Size Requirements – Review of Other Jurisdictions' Requirements

Ms. Krebs created a matrix of requirements of other Maryland counties that the EAC members found through their research and shared at the February 17 meeting and forwarded it to Ms. Dinne on February 16 to distribute to the EAC for review prior to the meeting. Ms.

Dinne noted that she revised it to add information that Mr. Barrett and Ms. Zebal provided after Ms. Krebs sent the file.

Ms. Dinne will ask Jay Voight, Zoning Administrator, how many kilowatts per month are used by the average household and have the information for the next meeting. Mr. Vleck found 1,000 kwh per month as the average based on the EIA.gov website.

Ms. Dinne suggested they start the discussion by reviewing the information she provided in December from other jurisdictions outside of Maryland. A wide range of options should be reviewed before narrowing down options toward a recommendation.

Mr. Barrett encouraged the members to agree on some general concepts or approaches to pursue or promote first to guide their discussion. After some discussion regarding what priority should be given to the amount of credits a property could generate, it was generally agreed that the amount of credits that could be generated or the amount of electricity needed would not be the main focus. Decisions should not be based on a person's ability to make extra money if all other criteria are met.

The consensus among the EAC members was that aesthetics and how a solar energy system relates to the neighborhood are the most important factors to be addressed in deciding on the EAC's recommendations. Beyond that context, the EAC would not seek to be overly restrictive.

Ms. Zebal talked to a staff member at Frederick County and shared that they had experienced no disputes with neighbors related to ground-mounted systems. They have had no complaints regarding visual impact either. No changes to their code are anticipated.

Mr. Vleck briefly summarized the requirements of the codes provided by Ms. Dinne on other jurisdictions around the country. Ms. Dinne referred the members to the most common options used by other jurisdictions that were included in the Scope for the project. This list of options would help the EAC to fully consider the approaches available.

The EAC members agreed that they did not want to recommend a fixed maximum for roof-mounted systems. They also agreed that they did not want to recommend that NO maximum be set overall for any combination of roof- and ground-mounted systems that a property would install.

Members discussed the relevance of the size of the lot, square footage of the house, and footprint of the house as a basis for determining an overall maximum size limit. Ms. Cutsail noted that two houses could have the same footprint, but one could be twice as large as the other, thereby possibly using more electricity. Ms. Leatherwood countered that there are cases where the square footage is also irrelevant. Some houses use only electricity, others use a combination of additional sources, such as propane, natural gas, or geothermal. Therefore, the amount of electricity used may not be indicative of the total amount of energy needed.

Ms. Leatherwood focused the discussion on what the group already agrees on. They agreed that the standards for roof-mounted systems need to be separate or different than ground-mounted systems. She summarized that the solar panels should not exceed the square footage of the roof area and need to incorporate any additional safety and permitting factors as well. [Carroll County currently limits roof-mounted systems to the size of the roof.] A recommendation should be made to allow roof-mounted systems on accessory buildings as well.

The members discussed requirements for roof-mounted systems. Mr. Vleck suggested that systems on pitched roofs be required to be flush mounted, and that "flush mounted" should

be defined to mean the same angle or pitch as the roof. Flush-mounted systems would look better and probably be less subject to issues such as winds. However, systems on flat roofs would not be required to be flush mounted. A height requirement would be needed for those that are not flush mounted. Ms. Zebal added that Carroll County currently does not allow any portion of the system to extend more than 10 feet from the highest portion of the principal structure to which it is attached.

Ms. Cutsail noted that a property could install some on the roof and some of the ground. Mr. Vleck added that this could include wall-mounted if they want to recommend allowing wall-mounted panels. They may be self-limiting. Ms. Dinne suggested that they may be more applicable to larger or multi-story residential buildings such as apartment buildings and condos, simply because solar access for wall-mounted systems on lower buildings may be subject to more obstructions.

Ms. Leatherwood indicated that further discussion to decide if an overall combined limit is needed and, if so, what it should be.

The members shifted the discussion to where ground-mounted systems should be allowed to be located in the yard. [Carroll County currently does not allow them in the front yard, and those located in the rear or side yard must meet setbacks for that district.] No consensus was reached.

Ms. Leatherwood asked Ms. Dinne to prepare a list of the items that the members have agreed on at this point, as well as outstanding issues. Ms. Dinne will email it to the members.

All agreed that 120 square feet is not enough for the maximum surface area for ground-mounted systems.

Mr. Vleck felt that the recommendations should be similar to what is allowed in Frederick and Washington Counties, since they are similar to Carroll. Ms. Cutsail said they should compare, but it shouldn't dictate what they recommend.

Ms. Zebal asked Ms. Dinne to add Carroll County to the matrix of requirements for other Maryland counties.

Ms. Leatherwood volunteered to research the specific uses for which wall-mounted systems are appropriate.

Ms. Leatherwood proposed that a special meeting be scheduled before the next regular meeting to continue this discussion to help ensure the project stays on schedule. The meeting will begin at 5:30 PM. Ms. Dinne will check on room availability in the County Office Building for an evening meeting.

7. NEW BUSINESS –

a. *Chapter 31 Code Amendment*

Ms. Dinne provided a copy of Chapter 31 with the proposed revisions to remove the Tree Commission references shown using Track Changes. She reviewed the process for amending the Code. The next step is to get time on the Board's agenda to brief them on the concept again and request approval to proceed to public hearing. Ms. Leatherwood volunteered to be the spokesperson. Ms. Cutsail will step in if Ms. Leatherwood is not available.

8. OTHER –

Nothing to report.

9. ADJOURN REGULAR MEETING –

ADJOURNMENT – MOTION 244-16: Motion was made by Ellen Cutsail and seconded by Curtis Barrett to adjourn the February meeting. Motion carried.

The meeting adjourned at 4:35 p.m. The next regular monthly meeting is scheduled for **Wednesday, March 16, 2016 at 3:00 p.m.** in the Reagan Room of the County Office Building.

systems. Those that had requirements in place primarily seemed to allow systems on the roof. If ground-mounted systems were mentioned, they had to follow the setbacks and size requirements of other accessory uses. Three of the counties did address utility-scale systems, but not residential.

Ms. Zebal checked on **Baltimore County**. Baltimore County also required ground-mounted systems to follow the setback and size requirements of other accessory uses. She called the zoning office in Baltimore County. The equipment cannot cover more than ~~a certain percentage~~ 40 percent of the lot, ~~but no height restriction was mentioned and is restricted to 15 feet in height. She found out t~~ he code for roof mounted systems was recently revised to address difficulty of access to roofs by firefighters. Additional separation between panels and from chimneys was needed. Separations between panels and around chimneys were made less restrictive.

Mr. Hynes visited the **Howard County** offices for information. Electrical and building permits are required for residential solar installations. Therefore, most are reviewed on a case by case basis. No specific height requirements are included in the code. He was told most requests are for roof-mounted facilities, which generally get approved.

Mr. Hynes added that a building permit is needed in **Baltimore City** as well. Panels cannot be raised more than 42 inches above the roof surface

Ms. Krebs looked at **Eastern Shore** counties. She said that, because stormwater is regulated, there are requirements in some areas for spacing and angles.

Mr. Vleck researched Alleghany, **Garrett**, and Washington Counties. He said he did not find any requirements for Garrett County. However, he found an article that stated that Garrett County has a signed agreement with Solar City. They have five spots around the county to provide solar power for utilities.

Mr. Vleck also checked on **Washington County**. He felt they had substantial information available, particularly finding the three-page section regarding solar and wind turbine facilities useful. He said solar facilities are treated as accessory uses in all zoning districts. Bulk requirements included 6-foot setbacks and 20-foot maximum height, and the footprint cannot exceed half the building footprint or 600 square feet – whichever is greater. There are some exceptions. They are permitted on the roof or on a wall, not to extend beyond 12 feet above the roofline. Applicants are required to provide a structural certificate to show the structure can accommodate the proposal. They can be located on accessory structures as well. The requirements include a provision making it the applicant's responsibility to coordinate with neighbors and secure any needed easements to prevent structures or landscaping on adjacent properties that would block the sun. There is no recourse with the County; it must be worked out with the neighbor.

Ms. Zebal also researched **Frederick County**. Wall or roof-mounted solar collection systems are allowed in all zoning districts. Solar arrays are permitted in any zoning district. The total square footage of all arrays cannot exceed the footprint of the principle structure. The footprint of an individual array shall not exceed one half the footprint of the principle structure or 600 square feet. Solar facilities are allowed in all districts, on the roof or on walls. The size is not to exceed the footprint of the principal structure. Ms. Leatherwood pointed out that, because of the angling of the roof, the square footage of the roof would be more than the building footprint. Mrs. Leatherwood pointed out that, because of the angle of the array, the square footage of the footprint would be more than the square footage of the array itself.



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Meeting Summary for March 9, 2016

Members

Karen Leatherwood, Chair
Curtis Barrett
Ellen Cutsail
David Hynes
Amy Krebs
Richard Lord – Absent
Frank Vleck
Sandy Zebal – Absent

County Government

Brenda Dinne, Special Projects Coordinator /
EAC Staff Liaison
Jay Voight, Zoning Administrator

Other Attendees

None

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the March 9, 2016, meeting to order at 5:35 p.m. in Room 007 of the County Office Building. This was a special meeting in addition to the regular monthly meetings scheduled for the purpose of providing additional time for discussion regarding residential solar surface area requirements. However, a brief agenda item was added to address an issue that arose regarding the categories for the 2016 Environmental Awareness Awards.

2. ENVIRONMENTAL AWARENESS AWARDS CATEGORIES –

Several nominees across several categories were nominated for the same initiative. Ms. Leatherwood proposed a “Project of the Year” category be created just for the 2016 awards cycle. The Project of the Year category would allow the EAC to collectively recognize those involved with and nominated for this project. It would also allow more nominees to be recognized, as all of the usual categories would still have a winner from the remaining nominees. Since this is a special circumstance, the EAC would not intend to have this category or take this action for each awards cycle. The other EAC members agreed.

Ms. Leatherwood further proposed that an Honorable Mention be awarded in the Student category. Primarily, she felt that the projects were very similar, but also felt that it was important to encourage students to continue to take initiative to do projects that demonstrate environmental stewardship. There was consensus to move forward with an Honorable Mention award in the Student category.

3. RESIDENTIAL SOLAR SURFACE AREA REQUIREMENTS –

Mr. Voight shared several points of information:

- If solar panels are rented rather than owned, the credits may go to the solar company that installed them rather than the homeowner.
- Many property owners fence the ground-mounted systems to keep larger animals out.
- The angle of ground-mounted systems can be changed to take advantage of the changing angles of the sun. However, these systems tend to be more expensive.
- He has not received any complaints about glare.
- Systems can be mounted on a flat roof and can go up to 25 feet high.
- Systems can be mounted on trailers as well, but only if it is designed to support the weight.
- No adjoining property notice is required to install solar in a residential yard.
- Solar energy systems do not require a conditional or special use approval in the zones in which they are permitted.

Ms. Leatherwood contacted Washington County to inquire about their satisfaction with the current requirements and if they had received any complaints about solar systems installed. The staff had not heard of any problems and indicated that no revisions to the requirements were currently planned.

The members were satisfied with the size limit for roof-mounted systems as written, which allows the size of the entire roof surface of the principal dwelling as well as accessory buildings. The 120-square-foot size limit currently applies to the ground-mounted systems only.

Mr. Voight said in the Agricultural Zoning District, to which the EAC's work would not apply, the size currently cannot exceed the size of all of the square footage of all of the roofs, regardless of whether the panels are on the ground, on the roof, or some combination thereof. He explained the basis for the 120 square feet when it was originally recommended by the Planning Commission. The Planning Commission was worried about the appearance of the ground-mounted systems. The 120 square feet was not based on a specific case or factor that he could recall.

Mr. Voight offered that the Planning Commission, at the time the original solar requirements were adopted, was concerned that even small lots could be covered by big houses, leaving very little yard. The Planning Commission members did not want to see the entire backyard filled up with solar panels.

How this works with homeowner associations (HOA) was discussed. If anything other than what is required in the zoning code is desired, it would need to be addressed in the HOA's covenants and restrictions. Many HOAs do not enforce their requirements very well. However, even in cases where an HOA dissolves, the covenants and restrictions are still enforceable by the neighbors.

Ms. Krebs asked Mr. Voight what currently needs to be submitted when someone wants to put a solar energy system on their property. Mr. Voight responded that a plot plan is required, showing where the system will be located and what other structures are currently on the property. He added that conditions do change rapidly, and he has no way to verify that a system was installed as shown on the plot plan. Footing and electrical inspections are required, but not at the completion of installation. Although the Board is often concerned with additional costs to the

consumer/property owner, they are not requiring that the property lines be staked to ensure the measurements are accurate when placing a system.

The possibility of basing the size on the amount of electricity the house actually needs or uses was discussed. Mr. Barrett tried to estimate what size system he would need based on the 1,500 kwh that he uses. If he estimated correctly, he would need approximately 400-500 square feet. Mr. Voight reminded that it is important to come up with something this is simple to figure out as a homeowner and easy to administer, verify, and enforce. It was decided that there were too many variables, such as system technology, size of house, size of household, other potential energy sources to the home (such as natural gas, propane, geothermal) that also provide power, and occupant habits and conservation measures. In addition, the house would need a storage system, which would be an additional cost, to be able to use the generated electricity 24 hours a day, as the sun is not out 24 hours a day.

Basing the maximum size on a graded scale tied to the residential zoning district was discussed. Mr. Vleck suggested that the 120 square feet remain for lots found in the R-7,500 district, but be doubled for larger lots. He estimated square footage based on a percentage of the lot size. The 120 square feet on a 1/8-acre lot (R-7,500) would cover 2.4 percent of the lot. Based on this 2.4 percent, a 1/4-acre lot (R-10,000) would allow 240 square feet of solar panels; a 1/2-acre lot (R-20,000) would allow 480 square feet; and 960 square feet would be allowed for a 1-acre lot (R-40,000). However, he felt that 960 square feet was getting too big. However, many lots are larger than the minimum lot size allowed in a zoning district. Therefore, the lot size does not always correlate to the zoning.

Basing the maximum on the impervious area was considered, as some jurisdictions include requirements related to impervious coverage and/or lot coverage for ground-mounted systems. Ms. Dinne shared that Carroll County would consider a ground-mounted system to be an impervious surface. However, it would be considered self-treating/disconnected if the space between the panels were at least equal to the width of a panel and if grass could still grow under the panels. Ms. Dinne added that, although considered impervious cover, Carroll County does not currently have a fee related to impervious cover. Mr. Voight offered that there currently is no lot coverage requirement in Carroll County either. It also was felt this option would make it too complicated, especially considering one of the EAC's primary objectives was to keep the requirements simple.

Some jurisdictions base the maximum on lot size rather than zoning. Members discussed applying a graded scale to determine maximums based on lot sizes, similar to the one previously proposed by Mr. Vleck regarding zoning districts. It was suggested that systems on properties over 3 acres could be required to be placed on the roof. Mr. Voight pointed out requiring someone to put the panels only on the roof would be difficult, as not all roofs are south facing. Mr. Vleck proposed the graded scale be applied to lot size ranges, but apply the limit based on the aggregate of roof sizes to lots greater than 3 acres. This would eliminate the possibility of a huge array in the residential districts, but it was felt this might not be big enough for larger lots. Ms. Leatherwood proposed that the maximum surface area on lots over 3 acres could be 1-1/2 times the roof area, rather than just 1 times the roof area. Ms. Cutsail volunteered to prepare a grid with the house footprint and various sizes ground-mounted solar systems for the March 16 meeting to give the members a sense of the amount of space it would take in the backyard.

Mr. Voight stated that ground-mounted systems are currently only allowed in the rear and side yards. For the sake of aesthetics, they agreed this should not change. The current setbacks and

height requirements were reviewed, but as no reason to change these was offered, they agreed not to recommend a change.

4. ADJOURN –

The meeting adjourned at 7:25 p.m. The next regular monthly meeting is scheduled for Wednesday, March 16, 2016 at 3:00 p.m. in the Reagan Room of the County Office Building.



Carroll County Environmental Advisory Council

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Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land
& Resource Management

Meeting Summary for March 16, 2016

Members

Karen Leatherwood, Chair
Curtis Barrett – Absent
Ellen Cutsail
David Hynes
Amy Krebs – Absent
Richard Lord – Absent
Frank Vleck
Sandy Zebal

County Government

Brenda Dinne, Special Projects Coordinator /
EAC Staff Liaison
Cindy Myers-Crumbacker, Recording Secretary
Jay Voight, Zoning Administrator

Other Attendees

None

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the March 16, 2016, meeting to order at 3:02 p.m. in the Reagan Room of the County Office Building. Ms. Dinne reported that new member, Murray Kenyon, had to resign due to a conflict with his work schedule. New member, Richard Lord, was not present to be introduced.

2. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

3. APPROVAL OF MEETING MINUTES –

Ahead of the meeting, Ms. Zebal provided revisions to Ms. Dinne to clarify Baltimore and Frederick Counties' solar requirements. She also questioned the wording of Ms. Leatherwood's comments regarding the angle of the panels, which followed the Frederick County discussion. Ms. Dinne prepared a revised version of that page (attached), showing the revisions using Track Changes, to make it easier for the EAC members to review and make a motion regarding the proposed revisions. The yellow highlighted text was in question. The EAC members decided to remove the yellow highlighted text completely, as the exact details of the discussion couldn't be recalled.

APPROVAL OF MINUTES – Motion 245-16: Motion was made by Ellen Cutsail and seconded by Frank Vleck to approve the February 17, 2016, meeting minutes as amended according to proposed revisions and deleting the yellow highlighted text. Motion carried.

4. CHAIR AND COMMITTEE REPORTS –

a. Solid Waste Subcommittee:

Ms. Leatherwood said there is nothing to report this month. The next meeting is April 7, 2016.

5. STAFF LIASION REPORT

Ms. Dinne reported that items thus far for the *April* meeting *agenda* include finalizing the recommendations on the residential solar surface area requirements, finalizing the Environmental Awareness Awards winners, and reviewing the lightweight aggregate (LWA) project scope. Ms. Cutsail asked what the LWA project is. Ms. Leatherwood said it was added to the work plan at the request of the Board at the joint meeting with the EAC on January 21. Ms. Dinne clarified that LWA in this context is a product that could be made from the materials dredged from behind the Conowingo Dam that could be used for building materials.

Ms. Dinne reminded the Council that the Commissioners' agenda for March 24 includes the *Chapter 31 Amendment*. This amendment would remove the Tree Commission from the EAC's responsibilities. Ms. Leatherwood will be attending, as the EAC members will be shepherding the amendment through the process.

Ms. Dinne informed the EAC that a *new procedure* is in place for *visiting* someone in the Planning Department or the Land & Resource Management Department. They are to stop at the lobby reception desk to sign in, and the lobby receptionist will call up to have an employee come to escort them to the office requested. The Departments will no longer have a receptionist of their own on the second floor. Ms. Dinne has arranged for the EAC members to be issued ID badges so, as County commission members, they will not need to be escorted in the building or to get to the EAC meeting room. All EAC members should plan to stop by the Human Resources (HR) office between 2:00 and 3:00 before the next meeting on Wednesday, April 20. Since the meeting starts at 3:00, the members should arrive early enough to get to the meeting by then.

Ms. Dinne indicated that, since the EAC members previously expressed interest in volunteering at the Land & Resource Management *public outreach booth* at Carroll County events, an opportunity was available for EAC members to volunteer. Mr. Edwards is looking for volunteers for the booth during the Westminster Flower and Jazz Festival on Saturday, May 7, 2016. Ms. Zebal and Mr. Hynes offered to help from 10:00-12:00, and Ms. Cutsail will volunteer from 12:00-2:00. Ms. Leatherwood may assist from 12-4:30, but needs to check her schedule first. She will let Ms. Dinne know. Mr. Vleck is not able to volunteer because he will be selling plants at his own booth. He offered to hand out materials at his booth as well.

6. OLD BUSINESS –

a. 2016 Environmental Awareness Awards Update

Ms. Dinne shared that there were 18 nominations for the awards. Ms. Leatherwood felt that the nominees in the Student category had similar projects. She wants to encourage students to continue to do projects. Therefore, she suggested that, in this category, there

should be a winner and an Honorable Mention. Other members agreed. Since Ms. Leatherwood will call the award winners up to receive their award and get their picture taken, she will mention that, although Salerno's was winning for the Living Reef Action Project, they also were nominated for their use of solar power, recycling, and other green practices.

Ms. Leatherwood will sign letters to the winners and the award certificates today, so Ms. Dinne can email the letters to the winners on Thursday, March 17. Ms. Dinne will prepare a news release as well to announce the winners. The awards presentation will be held April 21 at 1:30 PM during the Commissioners' open session. Ms. Leatherwood will announce the winners and describe the initiative for which they were nominated. Those winners not able to attend the April 21 presentations will be invited to attend the May 18 EAC meeting at 6:30 PM to receive their certificates. The Commissioners will not be at this meeting. Ms. Dinne will forward the award winners and summary of the winners' initiatives to the Commissioners so they are aware of the winners before the presentation.

National Arbor Day is April 29. In conjunction with the awards, the EAC previously decided to pursue the Arbor Day tree planting and ceremony to honor the award winners. Mr. Vleck volunteered to donate trees to be planted at Carroll Community College in the grove of trees where trees were planted from previous years. He will let Ms. Dinne know how many so she can coordinate with the Facilities staff to dig the right number of holes and plant the trees. She also will prepare the program and news release and invite the Commissioners to attend and/or speak.

b. Residential Solar Size Requirements – Preliminary Discussion of Recommendations

Ms. Dinne provided an updated summary (attached) showing outstanding issues to be discussed.

The question was raised whether the maximum surface area, when referring to ground-mounted systems, referred to the footprint of the solar energy system or the surface area of the panels. The consensus was that it should refer to the surface area of the solar panels.

Mr. Vleck reviewed the proposal from the March 9 special EAC meeting to base the maximum size of the ground-mounted system on the lot size. They proposed to incrementally increase the maximum surface area of ground-mounted systems as the lot size range increases. Lots less than or equal to ½ acre would continue to be permitted a maximum of 120 square feet of surface area. Lots more than ½ acre up to 1 acre would be allowed 240 square feet. Lots more than 1 acre up to 3 acres would be allowed 480 square feet. For lots over 3 acres, the aggregate square footage of all systems, ground-mounted and roof-mounted would not exceed 1 ½ times the size of the roof.

Ms. Zebal pointed out the 120 square feet was not enough to power a house. Mr. Voight and the other members responded that this was dropped from consideration during discussion at the March 9 meeting because there are too many variables to determine how much power is needed. Ms. Leatherwood added that the amount of power generated from the same surface area can vary depending on materials, technology, etc. Ms. Dinne also noted that, if the roof size is bigger than what is allowed on the ground, the balance can be placed on the roof. When a combination of systems is used, the total area cannot exceed the aggregate square footage of the roof areas on the property on which the system is installed. Mr. Voight commented that a storage system would be needed to have a system big enough to power a house.

The members used a grid paper created by Ms. Cutsail with mock different sizes of solar systems and an average house footprint of 1,500 square feet to try to visualize the impact of the different size solar systems on different size lots.

Ms. Dinne indicated that the issue of whether to address wall-mounted systems was still outstanding. Ms. Dinne offered that she had done some quick research and found that wall-mounted systems did not appear to be very efficient until you get farther north where the sun angle is less. Mr. Voight agreed based on his knowledge. The members agreed that the text should specifically state that wall-mounted systems are not allowed so it is very clear. Currently it is not addressed at all. This should simplify the implementation and enforcement of the solar requirements.

Some jurisdictions outside Maryland included text to allow, but not subject to the other roof- and ground-mounted standards, solar systems that are designed to blend in with the architecture. Mr. Voight said this would be very difficult to review and administer. Members felt it could be very subjective and wanted to keep the requirements simple. It was decided not to include this language.

Lastly, Mr. Vleck had mentioned at a previous meeting that Washington County had language addressing the responsibility of the property owner to secure any solar easements needed with adjacent property owners to ensure access to the sun. The County did not want to have any responsibility in this private action. Mr. Voight indicated no similar language is used elsewhere in the Zoning Code. However, that is not to say that it couldn't be used here. Ms. Leatherwood felt it was a good addition to help make property owners aware of the issues, process, and responsibilities. The EAC members decided to include this language.

MOTION 246-16: Motion was made by Frank Vleck and seconded by Ellen Cutsail to recommend to the Board the ground-mounted solar panel surface area maximum square footage amounts proposed at the March 9 meeting, to base the ground-mounted surface area on the solar panels, not to address solar systems that are designed to blend in with the architecture, and not to allow wall-mounted systems. Motion carried.

Ms. Zebal suggested that the rationale for the EAC decisions needs to be included with the actual recommended changes. Mr. Vleck added that the incremental increase in maximum size as the lot size increases was intended to help address concerns with aesthetics without being overbearing. Ms. Dinne offered to draft the findings and recommendation memo to the Board, as well as the actual Code text changes, which would include the rationale. She will send it to the EAC members for review and comment prior to the April 20 meeting. Any final revisions and approval of the memo will need to occur at that meeting, as the recommendation is due to the Board by the end of April. She will request time on the Board's agenda to present the recommendation once it is final and forwarded to the Board.

7. NEW BUSINESS –

None.

8. OTHER –

Nothing to report.

9. ADJOURN REGULAR MEETING –

ADJOURNMENT – MOTION 247-16: Motion was made by Ellen Cutsail and seconded by David Hynes to adjourn the March meeting. Motion carried.

The meeting adjourned at 4:35 p.m. The next regular monthly meeting is scheduled for Wednesday, April 20, 2016 at 3:00 p.m. in the Reagan Room of the County Office Building.



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Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land
& Resource Management

Meeting Summary for May 18, 2016

Members

Karen Leatherwood, Chair
David Hynes, Vice Chair – absent
Curtis Barret
Ellen Cutsail – absent
Amy Krebs
Richard Lord – absent
Frank Vleck – absent
Sandy Zebal

County Government

Brenda Dinne, Special Projects Coordinator /
EAC Staff Liaison

Other Attendees

None

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the May 18, 2016, meeting to order at 6:32 p.m. in Room 311 of the County Office Building. New member, Richard Lord, was not present to be introduced. Ms. Leatherwood will continue to try to contact him. A quorum was not present. Therefore, the members were not able to officially vote on applicable agenda items.

2. PRESENTATION OF 2016 STUDENT ENVIRONMENTAL AWARENESS AWARD – EVAN MCCARTHY

Mr. McCarthy was not able to attend.

3. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

4. APPROVAL OF MEETING MINUTES –

Ms. Leatherwood suggested that on Page 2 of the draft minutes “landfills” in both instances should not be plural. She also suggested changing “private haulers” to “private facilities,” as people take their trash to these facilities, as opposed to these businesses picking up the trash. Lastly, on Page 3 in the third paragraph under the Residential Solar Size Requirements, she suggested rewording the last two sentences, as it appears that something is missing.

There were not enough members present to constitute a quorum to vote to approve the minutes. Approval of the minutes will be added to the June agenda.

5. CHAIR AND COMMITTEE REPORTS –**a. *Solid Waste Subcommittee:***

Nothing new to report.

6. STAFF LIASION REPORT

Items Ms. Dinne currently anticipates for the June meeting agenda include a status update on the recommendations on the residential solar surface area requirements in residential districts; possible speaker(s) on the lightweight aggregate project, approving the draft scope for the MS4 Public Workshop for 2017, and assigning committees for the workshop.

7. OLD BUSINESS –**a. *Residential Solar Size Requirements – Status***

Ms. Leatherwood indicated that she and Mr. Barrett presented the recommendations to the Board on May 12. They seemed to be well received. The vote was 3-1 to move forward to the Planning Commission to present the EAC recommendations.

Ms. Leatherwood shared Commissioner Rothschild's concerns about wanting the facilities to be required to be located closer to the applicant's house than the neighbor's house. His main concern is for aesthetics. Ms. Krebs verified that the setback is now five feet in all residential districts. She stated that she didn't think it would make much difference if the setbacks were 5 or 25 feet, as you would still see the solar facilities anyway. Ms. Leatherwood added that Mr. Devilbiss had shared a recent situation where the property owner had wanted to put the solar panels further away, but the neighbor asked that it be closer, between the houses, because it wouldn't obstruct his view as much. Ms. Leatherwood felt that the need may be on a case-by-case situation. She went on to remind everyone that it would be incumbent upon the property owner to secure a solar access easement. Ms. Krebs added that, without it, if the panels face the neighbor, the neighbor could plant trees that would block the panels. If the panels face away from the neighbor, the neighbor could plant trees to screen their view. The height limit for ground-mounted solar systems is currently 10 feet above grade. The zoning code currently allows fences and sheds to be much taller. Some of these don't look much different, and a neighbor could also, therefore, put up a fence to block the view. The members agreed that they did not feel a need to change the setback recommendation at this time. They did not necessarily feel wed to the current 5-foot setback, but they felt the Planning Commission might better be able to recommend an appropriate change to it if desired.

Ms. Dinne requested time on the Planning Commission's evening agenda on June 29. She will let the EAC members know once it is confirmed. She will forward the EAC report to the Planning Commission to review ahead of time, once confirmed. The report is also available on the EAC webpage. The same PowerPoint can be used as was presented to the Board, with a change to the cover slide to reflect the Planning Commission and date.

b. *Lightweight Aggregate – Next Steps*

Ms. Dinne will work on inviting a speaker from the Maryland Port Authority and from Harbor Rock to come to the EAC meeting to provide more information. If available, she will add it to the June agenda, but it could be a later meeting if not.

8. NEW BUSINESS –**a. *General Public Workshop – Review of Draft Scope***

Ms. Dinne reviewed the draft scope (attached). She said it was suggested that we aim for March of 2017. More families may be available to come, as it is between many sports at that time. The following additional ideas for the format and advertising of the workshop were offered:

- Ms. Leatherwood suggested that former member, George Schooley, may be able to give a session on septic maintenance. He currently provides sessions at the various public library branches.
- Ms. Leatherwood also suggested the workshop be advertised in the 2017 Winter Rec and Parks Program Guide.
- Ms. Leatherwood further recommended creating a database of the previous award winners and nominees to whom invitations could be sent. These individuals have already demonstrated environmental awareness and may be able to help spread the word.
- Ms. Krebs suggested creating an event on Facebook. They seem to generate a lot of interest. Ms. Leatherwood thought it might only cost about \$20 to create a “boost.”
- Ms. Leatherwood offered to put together a list of the property management companies that might manage the HOAs in the county. Invitations could then to be sent to the HOAs through the property management companies. She found it difficult in the past to put together an HOA mailing list, as they are not-for-profit and the leadership is constantly changing. Ms. Dinne said she would check with the Bureau of Development Review to see if it was possible to put together an HOA mailing list.
- Ms. Zebal felt that a “hook” was needed to pique people’s interest and draw them to the workshop.
- Ms. Leatherwood suggested that it could coincide with Maria Myers’ rain barrel and compost bin sale, as that draws a lot of people. Ms. Krebs further offered that it could perhaps be more of a “faire,” possibly having food trucks as well.
- Mr. Barrett indicated that World Water Day was March 23 this year. The workshop could possibly coincide with that next year if in March.

Committees will be formed at next meeting – Refreshments, Marketing, & Materials/Registration. Approval of the scope will be added to the June agenda, as there was not a quorum present to vote on it.

9. OTHER –

Ms. Zebal shared that we had been advised not place metal plaques at the trees in the grove behind the Community College, as people steal them for scrap value. However, she felt some kind of signage is needed. She suggested the Career and Technology Center students may be able to create a wood burned sign for them. She agreed to contact somehow about the possibility.

10. ADJOURN REGULAR MEETING –

The meeting adjourned at 7:25 p.m. The next regular monthly meeting is scheduled for Wednesday, June 15, 2016, at 3:00 p.m. in the Reagan Room of the County Office Building.



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Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land
& Resource Management

Meeting Summary for June 15, 2016

Members

Karen Leatherwood, Chair
David Hynes, Vice Chair
Curtis Barret
Ellen Cutsail – absent
Amy Krebs – absent
Richard Lord – absent
Frank Vleck – absent
Sandy Zebal – absent

County Government

Brenda Dinne, Special Projects Coordinator /
EAC Staff Liaison
Cindy Myers-Crumbacker, Recording Secretary

Other Attendees

None

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the June 15, 2016, meeting to order at 3:00 p.m. in the Reagan Room of the County Office Building.

Ms. Leatherwood contacted Richard Lord, and he said he would be at the meeting. However, he was not present. As there was not a quorum, the members were not able to officially vote on applicable agenda items.

2. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

3. APPROVAL OF MEETING MINUTES –

There were not enough members present to constitute a quorum to vote to approve the minutes. Approval of the April, May, and June minutes will be added to the July agenda.

4. CHAIR AND COMMITTEE REPORTS –

a. Solid Waste Subcommittee:

Ms. Leatherwood and Mr. Don West will be making a presentation to the Board of Commissioners on Thursday, June 23, 2016, for the Solid Waste Advisory Council. The main options to be offered will be to create districts, implement “pay-as-you-throw,” and a package of smaller, incremental changes.

5. STAFF LIASION REPORT

Ms. Dinne indicated that the July meeting topics tentatively will be:

- Lightweight Aggregate – Jeff Otto from Harbor Rock to speak
- Solar Surface Area Requirements in Residential Districts – status update
- MS4 Public Workshop/Event – approve scope & create committees

A speaker from the Maryland Port Administration will speak about MPA’s experience with lightweight aggregate at the August meeting.

Ms. Dinne informed the members that Ms. Zebal will be out for several months due to her husband’s health issues.

6. OLD BUSINESS –

a. Residential Solar Size Requirements – Status

The EAC presentation to the Carroll County Planning Commission on its solar surface area recommendations is tentatively on the Commission’s agenda for the June 29 evening meeting. Ms. Dinne will confirm the date, time, and place and pass this along to the EAC members.

The EAC’s report is available on the EAC webpage. The same PowerPoint will be used as was presented to the Board, with the exception of a change to the title page. The County Attorney’s Office will set up the hearing.

b. General Public Workshop – Approval of Draft Scope; Assign Committees

Since a quorum was not present, the members could not vote to approve the scope of work. This item will be placed on the July meeting agenda.

Ms. Leatherwood indicated she would email Ms. Dinne the name, address, and phone number of a property manager she’s aware of that is not located in Carroll County but manages properties in Carroll County.

Ms. Dinne reviewed the items that were discussed at the May 18 meeting. She will contact Ms. Maria Myers, County Recycling Manager, about potentially partnering with the EAC to hold the compost bin and rain barrel sale the same day and location as the EAC’s event. The three committees to be created for the EAC members are as follows: Marketing, Materials/Registration, and Refreshments.

7. NEW BUSINESS –

None.

8. OTHER –

Mr. Hynes inquired about additional opportunities for the EAC members to volunteer at the Land & Resource Management public outreach booth at special events. Ms. Dinne will look into it and report at the next meeting.

Ms. Dinne will look into next steps to addressing Mr. Lord’s absences.

9. ADJOURN REGULAR MEETING –

The meeting adjourned at 3:27 p.m. The next regular monthly meeting is scheduled for Wednesday, July 15, 2016, at 3:00 p.m. in the Reagan Room of the County Office Building.



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Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land
& Resource Management

Meeting Summary for July 20, 2016

Members

Karen Leatherwood, Chair
David Hynes, Vice Chair
Curtis Barret
Ellen Cutsail
Amy Krebs – absent
Frank Vleck
Sandy Zebal

County Government

Brenda Dinne, Special Projects Coordinator / EAC Staff
Liaison
Cindy Myers-Crumbacker, Recording Secretary

Other Attendees

Jeff Otto, Harbor Rock
Bruce Michael, MD Dept. of Natural Resources

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the July 20, 2016, meeting to order at 3:00 p.m. in Room 311 of the County Office Building.

2. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

3. APPROVAL OF MEETING MINUTES –

Approval of the April, May, and June minutes was discussed. A correction was noted to be made to the April minutes on the last page in the Adjournment Motion No. 251-16 - "Motion was made to adjourn the April meeting" to change "March" to "April."

APPROVAL OF MINUTES – Motion 252-16: Motion was made by Ellen Cutsail and seconded by Curtis Barrett to collectively approve the April 20, 2016 (with correction mentioned above), the May 18, 2016, and the June 15, 2016, meeting minutes. Motion carried.

4. CHAIR AND COMMITTEE REPORTS –

a. Solid Waste Subcommittee:

Ms. Leatherwood reported that the Solid Waste Advisory Council (SWAC) adjourned for the summer. She noted that there may be resistance to some of the options because people want a choice for their hauler. However, she felt that the Board of County Commissioners seemed to be open to discussions on what might need to be done if it would save the County money. The next SWAC meeting will be on Thursday, September 1, at 4:00.

5. **STAFF LIASION REPORT**

Ms. Dinne reported that the August meeting has been moved to 3:00 pm in Room 105 instead of an evening meeting to accommodate the speaker for the meeting. Ms. Leatherwood indicated that she will not be at that meeting.

The August agenda will include a speaker from the Maryland Port Administration (MPA), who will speak about MPA's experience with lightweight aggregate; a quick status on the residential solar recommendations process; and discussion on the format of the public MS4 workshop/event.

Mr. Barrett said that he will not be available for the meeting with the County Planning Commission on Wednesday, August 3, to discuss the EAC's decision on amending its solar recommendations.

6. **OLD BUSINESS** –

a. General Public Workshop – Approval of Draft Scope; Assign Committees

Ms. Dinne indicated that the draft scope has been discussed at prior meetings, but there was not a quorum to vote to approve it at the last two meetings. The scope is flexible enough to allow the EAC to pursue alternate formats to a workshop if desired.

MOTION REGARDING SCOPE OF PUBLIC MS4 WORKSHOP – Motion 253-16: Motion was made by Ellen Cutsail and seconded by Sandra Zebal to approve the scope of the public workshop. Motion carried.

Committee assignments were made as follows:

- Marketing – Karen Leatherwood and Frank Vleck
- Materials/Registration – Ellen Cutsail and Amy Krebs
- Refreshments – Curtis Barrett, David Hynes, and Karen Leatherwood

The date of the Workshop has not been decided. However, it will be held in March or April 2017. Ms. Leatherwood noted that she wanted the EAC to do a radio spot again with WTTR to help get the word out.

See attached “NPDES MS4 PUBLIC OUTREACH: Public Workshop or Event, Scope of Work.”

b. Residential Solar Size Requirements – Discussion

The Planning Commission requested a follow-up meeting with the EAC to discuss issues raised during the June 29 meeting. This follow-up will occur at the Wednesday, August 3, 2016, Planning Commission meeting, where the EAC will share the results of their discussion and decision whether to amend its original recommendations as a result. These issues were primarily as follows:

- Are the setbacks for ground-mounted systems sufficient to help protect the neighbors?
- Should requirements be added to address aesthetics of ground-mounted systems?

Ms. Leatherwood suggested two items that EAC may want to entertain as a result of the issues raised on June 29: 1) a change in recommended setbacks and 2) addition of a recommendation for screening.

In regard to setbacks, the EAC felt that most homeowners will opt for roof-mounted systems in residential districts where possible. The members were concerned that adding to

the existing, fixed setback could make it impossible for some property owners to install solar panels. They also agreed that they did not want to make the requirements more complicated than they are by adding a variable component to the setback requirements. The County has had experience with neighbors requesting the panels be located closer to their house and to the side yard, as this obstructed their view less.

This discussion was followed by one related to aesthetics. The Code currently requires a maximum height of 10 feet from grade for ground-mounted systems. The EAC has not recommended a change to this requirement. The Code currently allows many other items and structures, such as sheds and fences, to be higher than 10 feet. The EAC did not feel that the solar panels were any more visually intrusive than many of these other structures. In addition, members were concerned that screening requirements might interfere with solar access.

The EAC discussed for consideration these issues and potential amendments to the EAC's existing recommendations. The EAC members elected not to amend their existing recommendations. Ms. Dinne will prepare a summary of the EAC's discussion and decision on these two issues to use as a handout at the Planning Commission meeting on August 3.

MOTION REGARDING SOLAR RECOMMENDATIONS – Motion 254-16: Motion was made by Ellen Cutsail and seconded by Curtis Barrett to keep the previous recommendations. Motion carried.

Following this Planning Commission meeting, the EAC will request that the Board of County Commissioners approve moving forward to public hearing.

c. *Lightweight Aggregate – Harbor Rock Product – Jeff Otto, Harbor Rock*

The Board of County Commissioners asked the EAC to complete some research on the use of lightweight aggregate (LWA) as one tool to reduce the sediment behind the Conowingo Dam. A project to complete a brief fact sheet on LWA, including what it is, how it might be used in this context, and cost/benefit information that can be found. The Board's interest in LWA as an option for addressing the dredge materials is in identifying options to clean up the Chesapeake Bay that might have more "bang for the buck" than money spent locally on Bay restoration.

To provide the EAC members with more information, Mr. Jeff Otto, founder and president of Harbor Rock, was invited to speak to the EAC. Mr. Otto is a Consulting Engineer. His interest in LWA product started when the New York harbor was a hot bed for discussion regarding beneficial reuse of dredge materials. He formed a strategic partnership with FL Schmidt, a leading supplier of equipment and services to the global cement and minerals industry. A patent is pending for this LWA manufacturing process.

Mr. Otto provided a copy of the PowerPoint presentation for the EAC members ahead of the meeting. He, therefore, highlighted the process, touched on a few other main topics, and answered questions regarding the potential manufacture of LWA from the dredge materials behind the Conowingo Dam as an alternative to finding a location to dispose of the dredge materials.

Mr. Otto indicated that LWA is valuable as a stone, being 4 to 5 times more valuable than regular stone. It "pops" in the heating process, so it is lighter and more fire resistant than typical stone. The pellets are porous like lava, but uniform, although it maintains a high skid resistance.

He said that during the dredging process a containment “box” is built next to the dredge site for deposit of dredged materials. With LWA, the dredged materials would be pumped from this box to Harbor Rock’s site (if such a project were to move forward), where it is screened of debris, dewatered, and heated in a kiln (see the attached PowerPoint for more detail on the process). The containment box would continually be emptied to allow space for more dredge materials.

In response to questions from EAC members, Mr. Otto mentioned that, although it is not why they do this, some decontamination of pollutants in the dredge material would result from the process. He also offered that the manufacturing is very expensive, but it would still be profitable. Mr. Otto went on to discuss cost and revenues and why it is profitable. Harbor Rock would fully fund the project, but would charge a fee for the services. If a public/private partnership were developed with the State, the fee could be lower, as the State can borrow money much cheaper than a private company. The closer to the source of the raw materials, the less expensive it would be. There are options for locating relatively close.

Mr. Bruce Michael, Director, Resource Assessment Service, with the Maryland Department of Natural Resources, was present in the audience and clarified a question related to study results regarding the cost of dredging. The Lower Susquehanna River Watershed Association study looked at all different types of dredging and identified a large range in costs. This range is owed to several factors, among which are the various disposal options for the dredge material.

Mr. Michael also clarified that, on average, there are more nutrients and sediments passing by the dam and onto the Bay than there were, but the amount hasn’t increased significantly. However, since the reservoir behind the Conowingo Dam is currently full, any new nutrients and sediment arriving at the dam go over. Large events tend to scour what is stored behind the dam and which makes more space behind the dam, sending the average numbers downward until it fills up again. Mr. Otto said the dredging process would reduce nutrients and sediment behind the dam, and should help to achieve the total maximum daily load (TMDL) for the Chesapeake Bay. Mr. Michael added that, if nutrients and sediments were addressed behind the Conowingo, this effort alone would not address the Bay TMDL. There are over 90 river segments in the Chesapeake Bay watershed that make up the TMDL, and this is just one. The others still would need to be addressed.

Mr. Michael shared that the impacts of the Conowingo Dam and potential mitigation efforts will be incorporated to the Chesapeake Bay Watershed Model for the 2017 Midpoint Assessment (to determine progress toward achieving the Bay TMDL). Climate change factors will be incorporated as well.

One of the main challenges to the process is to determine how to address air pollution from the manufacturing process. He added that a demonstration project was completed at the Baltimore Harbor, as a result of which he indicated that MDE felt the air pollution limits could be met. Mr. Otto further discussed the Cox Creek demonstration project, referring to slide 12 in the presentation. Mr. Otto felt that there is already a market for LWA product from this project.

Mr. Barrett noted that this process is somewhat theoretical at this point, as no facilities have actually been built yet. Mr. Otto added that this is true in the U.S.; however, FL Schmidt is operating several plants around the globe.

See attached “Harbor Rock and the Port of Baltimore & Chesapeake Bay Clean-Up Initiative.”

7. **NEW BUSINESS –**

None

8. **OTHER –**

Nothing

9. **ADJOURN REGULAR MEETING –**

ADJOURNMENT OF MEETING – Motion 255-16: Motion was made by Sandra Zebal and seconded by Ellen Cutsail to adjourn the July 20, 2016, meeting. Motion carried.

The meeting adjourned at 5:14 p.m. The next regular monthly meeting is scheduled for Wednesday, August 17, 2016, at 3:00 p.m. in Room 105 of the County Office Building.



NPDES MS4 PUBLIC OUTREACH: PUBLIC WORKSHOP OR EVENT

Scope of Work



PURPOSE

Carroll County's National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Separate Storm Sewer System (MS4) permit requires the County to implement a public education and outreach program to reduce stormwater pollutants. The permit requires the County to provide information to inform the general public about the benefits of:

- ◆ Increasing water conservation;
- ◆ Residential and community stormwater management implementation and facility maintenance;
- ◆ Proper erosion and sediment control practices;
- ◆ Increasing proper disposal of household hazardous waste;
- ◆ Improving lawn care and landscape management (i.e., the proper use of herbicides, pesticides, and fertilizers, ice control and snow removal, care for clippers, etc.);
- ◆ Residential car care and washing; and
- ◆ Proper pet waste management.

Water quality and stormwater pollution is everyone's responsibility. All Carroll County residents and property owners contribute in some way to stormwater pollution. Whether it be lawn fertilizer, auto fluids that wash off of driveways when it rains, pet waste, to name a few, each person can do his or her part to contribute to improving the water quality of Carroll's streams and water bodies. Common practices, generally referred to as "good housekeeping" measures, can be implemented by individual homeowners to do their share to reduce the amount of stormwater runoff that reaches streams and other waterways and to improve our local water quality of the water. Just as the combined actions of many can have a significant negative impact, the same is true for significantly improving water quality as well.

TASKS & LOGISTICS

The Environmental Advisory Council (EAC) members will work closely with the County's EAC Staff Liaison, NPDES Compliance Specialist, and other staff to plan and implement an educational workshop or other type of educational event. The event will be geared toward the general public, primarily residents and homeowner associations, similar to the workshop held in 2016 geared toward the business community. All participants will be provided with information about good housekeeping measures for protecting Carroll's waterways from stormwater pollution. The preliminary target date for holding this event will be March 2017 (may be subject to change). Materials will be developed as appropriate to accompany the effort.

The general steps that will be taken to implement this project are grouped below by subject or task type. The tasks are not specific and are not listed chronologically. Some tasks may occur simultaneously.

Location:

A location will be chosen that is somewhat central to the county, that has the capacity to accommodate the anticipated number of participants, and for which the County will not be charged for use. The location must have a room large enough to accommodate all participants, as well as several smaller rooms available for breakout sessions.

Educational Topics:

Educational topics may include any of the items outlined in the permit under Part IV. D. 6. Public Education, Section b, but may include additional topics that impact water quality as well. The topics for the event may be addressed in a variety of ways, from presentations to demonstrations to public information materials available to hand out.

1. Water conservation;
2. Residential and community “good housekeeping” practices to improve stormwater management;
3. Reduction, reuse, and recycling of household waste and disposal of household hazardous waste;
4. Lawn care and landscape management (i.e., herbicides, pesticides, and fertilizers, ice control and snow removal, etc.);
5. Residential car care and washing;
6. Septic maintenance; and
7. Pet waste management.

Target Audience / Participants:

Mailing List: If the County currently has the information available, a mailing list of homeowners associations (HOAs) will be developed. In addition, a query of State property data, along with the County’s Geographic Information Systems (GIS) data of existing land uses, will be used to create a mailing list to a sample of residential property owners. The mailing lists will be used for an interest survey as well as to provide notice of the upcoming event.

Advertising / Publicity:



The EAC and staff will employ numerous opportunities to get the word out about the event and advertise to encourage as much participation as possible:

- ♦ The EAC/staff liaison will work with the County’s Public Information staff to post a link to event information on Facebook and Twitter. The EAC will look into the feasibility of a Facebook Boost Post to reach more people.

- ◆ Staff liaison will work with the County's Public Information staff to prepare and distribute a news release. The EAC will follow up by contacting the Carroll County Times to encourage an article.
- ◆ Information will be included in relevant and time-appropriate newsletters, such as the County Connection, municipal newsletters, *Down to Earth* newsletter (Bureau of Resource Management), etc.
- ◆ The EAC/staff will also work with the municipalities through the Water Resource Coordination Council and local groups to generate participation at the event.
- ◆ The EAC will arrange an interview on WTTR to help get the word out.
- ◆ A webpage will be created for this event. Information about and registration for the event will be available, as well as links to materials and presentations provided at the event and other relevant resources.
- ◆ Flyers will be developed to post and to distribute.
- ◆ Invitations will be emailed to prior award winners and nominees (for whom email addresses are available), as well as property management companies that manage property in Carroll County.
- ◆ If information is available to create an HOA mailing list, the HOAs will be sent an invitation to the event.
- ◆ Other as available

Speakers:

EAC members will work with the EAC staff liaison, NPDES Compliance Specialist, and BRM staff to solicit appropriate speakers with the background knowledge and experience to address the chosen event topics.

Materials:

Depending on the final format decided upon for the event, speakers will prepare slide shows (i.e., PowerPoint) to present their topic for the opening session, and possibly for any breakout sessions where appropriate. EAC members, the EAC staff liaison, and the NPDES Compliance Specialist will work with the speakers to identify additional educational and outreach materials and resources that they may bring and share to provide additional reference materials for the participants. Staff will also prepare associated public outreach materials appropriate to the topics to be addressed.

A means of identifying participants' topics of interest for subsequent events will be incorporated to the event. In addition, an evaluation form will be developed for participants to complete at the end of the event. The evaluation form will solicit feedback on the event content and format, as well as suggestions for reaching non-participants from the target audience.

Event Format:

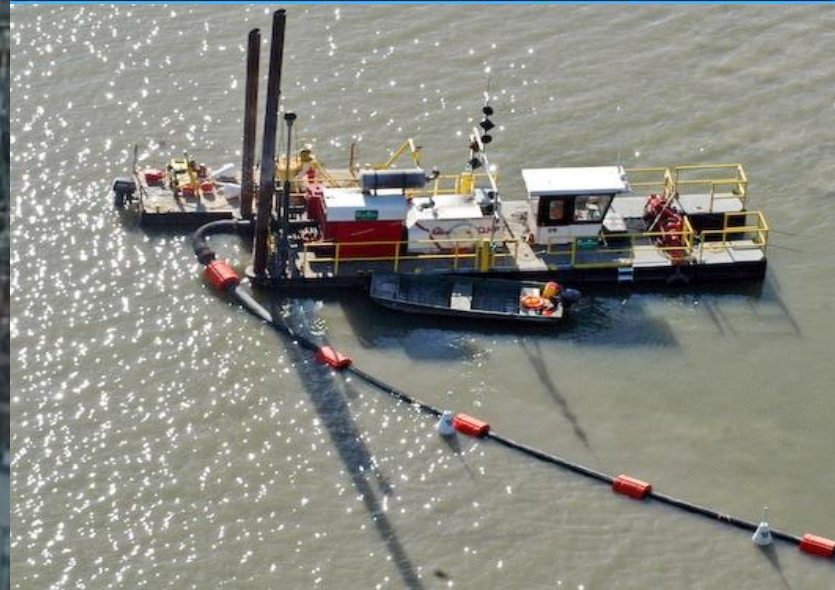
The event will be a two- to four-hour event. The format initially considered started with an opening session for all, followed by break-out sessions that allow participants to choose which topics interested them most. In this case, an opening session would address general good housekeeping best management practices (BMPs) that all homeowners should implement. The

opening session would then be followed by breakout sessions related to specific topics and designed to give the participant more detailed information on that topic. The participant should take away from the event information that will help to make decisions and/or take the next step. However, other potential formats may be considered. The EAC may partner with other groups for the event, which may result in a different format that is better suited to the associated activities.

ESTIMATED COSTS

Costs will be absorbed by normal staff responsibilities and operations or the NPDES Compliance budget for public education.

- ◆ *Materials*: The cost to create or copy any materials will be absorbed by the normal operating costs of the relevant County agency or the NPDES compliance budget.
- ◆ *Postage*: Postage will be covered by the normal operating costs of the County's office of Production and Distribution Services.
- ◆ *Refreshments*: The EAC will try to secure sponsors to provide or cover the cost of refreshments (coffee, juice, and light refreshments) to be provided at the break.



HarborRock and the Port of Baltimore & Chesapeake Bay Clean-up Initiative

**A Sustainable - Affordable - Mandatory
Component of Long-Term Bay Health**

Briefing to Carroll County Environmental Advisory Council

Purpose & Objectives of this Briefing

Proposed Approach

Summation of Environmental Benefits

Port of Baltimore Project

Conowingo Dam Project

Next Steps

Who is HarborRock

Overview of Light Weight Aggregate (LWA)

HarborRock Test Locations and Technology Validation

Purpose & Objectives of Today's Meeting

Purpose:

1. To Discuss Lightweight Aggregate (LWA) Reuse as the Best Method to Solve Two Sediment Management Needs in Maryland
2. Compare LWA Reuse to Current Methods Used to Address these Same Needs:

Objectives:

1. To identify if there are any regulatory issues with implementation of LWA Reuse at the Cox Creek Dredged Material Containment Facility.
2. Identify the steps needed to use HarborRock as a management method at Conowingo Dam for the Chesapeake Bay TMDL:
 - Include HarborRock in Maryland's WIP
 - Establish nutrient trading with Pennsylvania and New York

HarborRock's Sediment Reuse Approach

1. Install a Hydraulic Dredge in the Cox Creek Dredged Material Containment Facility (DMCF) & Conowingo Reservoir
2. Dredge the Sediments & Pump the Slurried Material Via Pipeline to the LWA Reuse Manufacturing Plant
3. Produce LWA Using Natural Gas Fired Kiln(s)
4. Return the Pumping Water to the Susquehanna River or DMCF
5. Sell the ASTM grade LWA to Local Users

“Instead of mining, DREDGING for LWA is more cost effective; more efficient; and is symbiotic with a healthier Bay”

Environmental Benefits

1. Removal of the sediment and associated contaminants from the Chesapeake Bay Watershed (Cox Creek DMCF & Conowingo Reservoir) will help Maryland exceed the EPA's Bay TMDL goals.
2. The sediment is fired in the kiln for 40 minutes at over 2,200° F.
 - Proven to destroy organic contaminants & immobilize metals
3. The LWA produced is an ASTM certified, recycled aggregate, eligible for LEED credits
4. The manufacturing process improves the water quality

“The environmental benefits are measurable & verifiable in real time”

Process Attributes & Environmental Controls

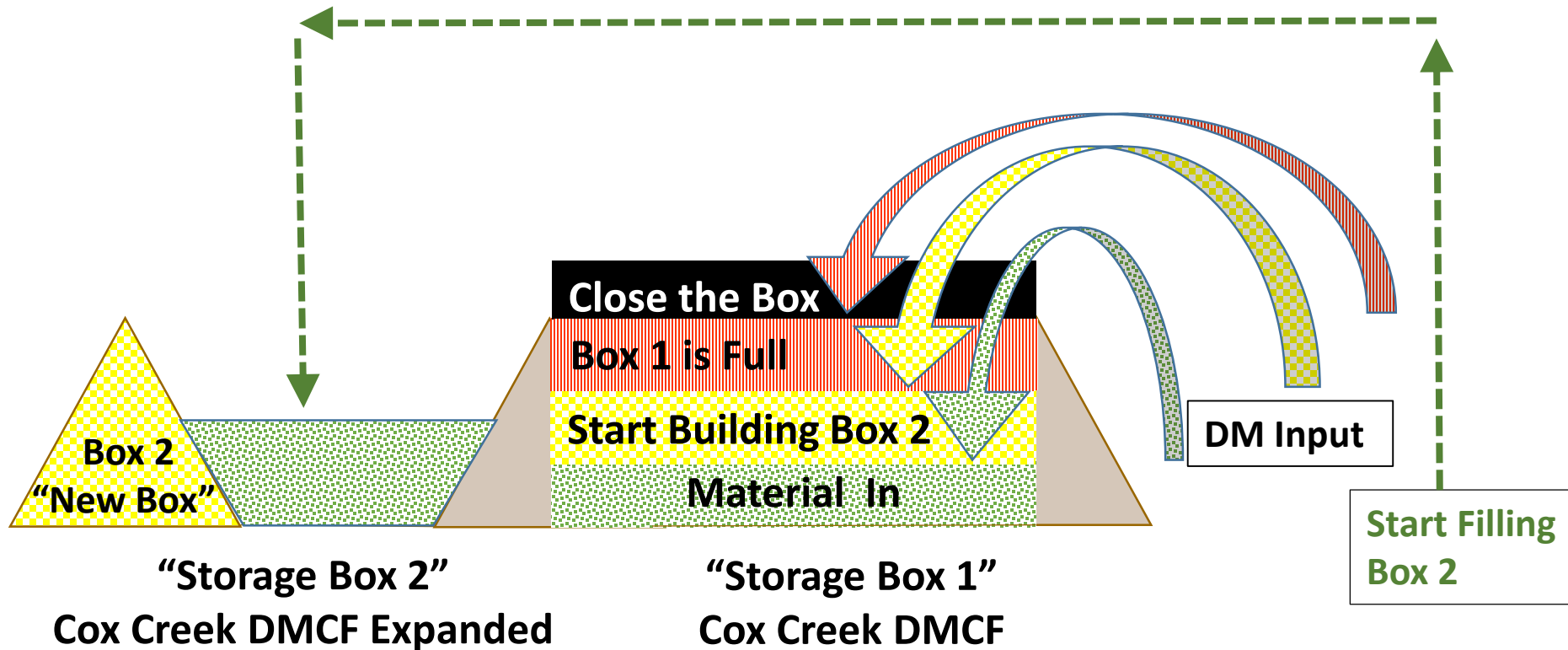
1. No chemicals are added to the dredged sediments
2. All components of the dredged material are reused:
 - Cobbles, Sand, Silt/Clay
3. The cobbles & sand are washed, screened & sold
4. The silt/clay is fired into LWA & tested to ASTM standards
5. All wash/process water is sent to WWT for pH control
6. Air emissions are controlled by the Best Available Technologies

“Every emission point and product sold is controlled and routinely tested in the HarborRock process”

Port of Baltimore Project Overview

Dredged Material Management the Old Way

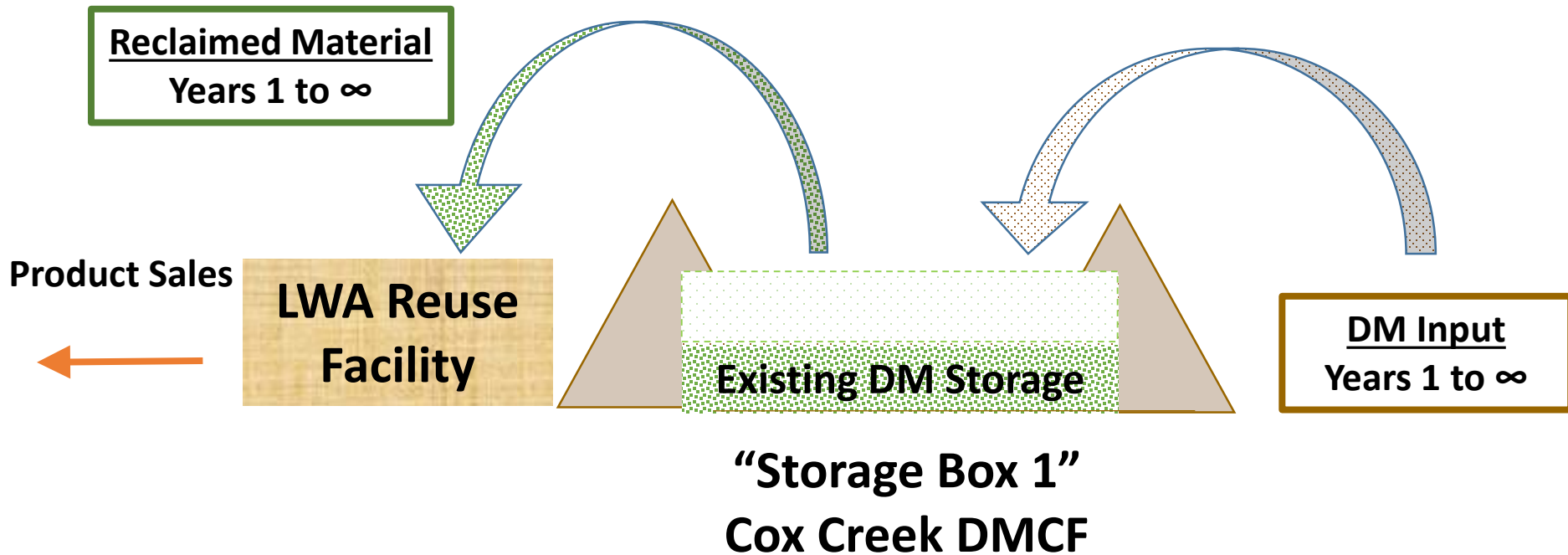
Buy a Box, Fill the Box, Buy a New Box, Close & Manage the Old Box....



- The repetitive "Box" cycle only works when land is available to build more boxes
- "Box" economics depend on the: 1) cost of new land, 2) opportunity cost of the lost land, 3) on-going closure costs of retired boxes 8

Dredged Material Management the New Way

Use an Existing Box, Put Raw Material In, Take Raw Material Out, Sell a Product...



LWA Reuse creates “renewable capacity” - the Box never fills up

LWA Reuse: 1) has defined economics, 2) eliminates risk of finding more sites, 3) creates family wage jobs, 4) preserves land for higher value uses

Dredged Material Management the Old Way

The MPA's plan is to:

- 1) raise the dikes at the existing disposal area;
- 2) build dikes around the 100 upland acres.

This plan will provide disposal capacity for ~5 years, then another site is needed.



Dredged Material Management the New Way

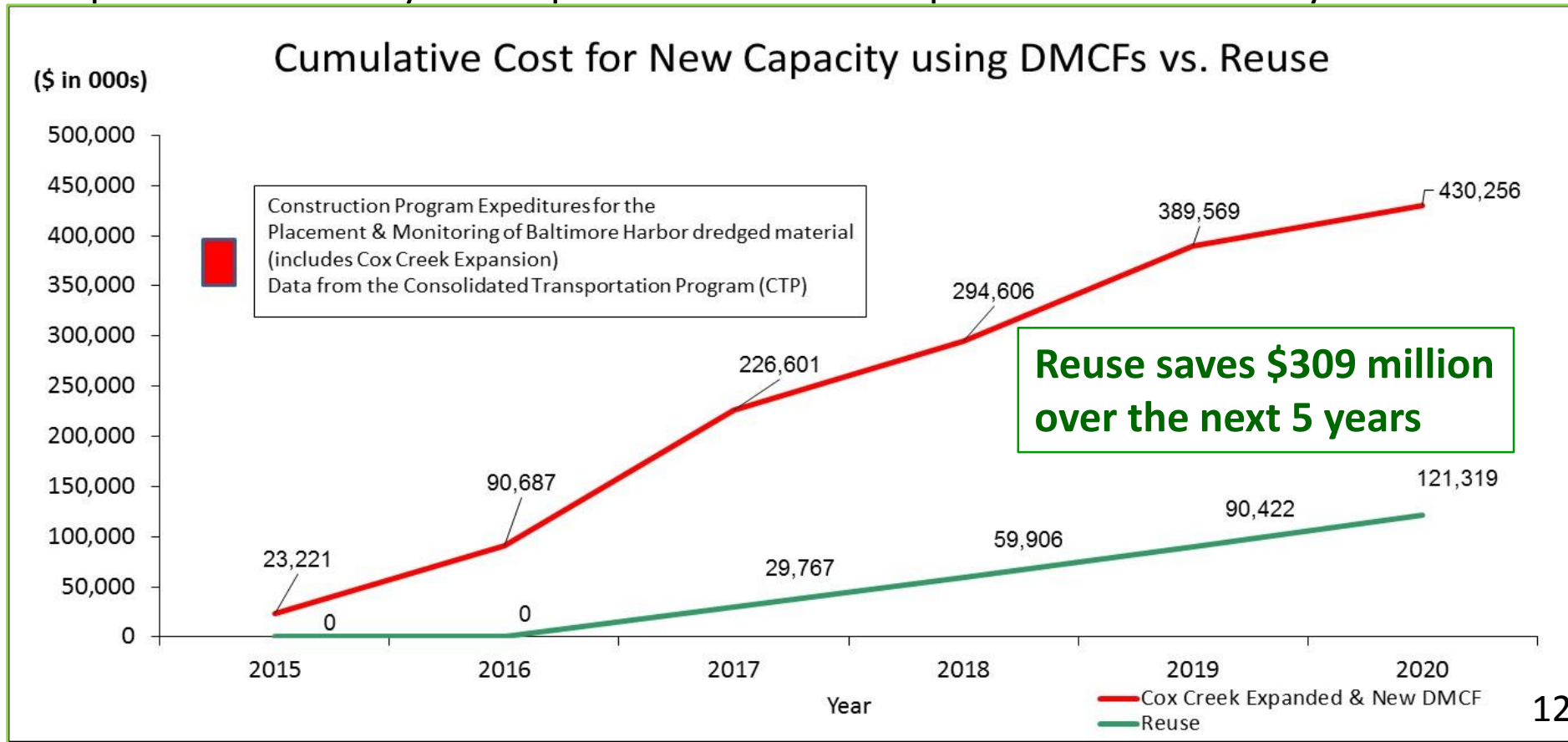
LWA Reuse will:

- 1) Extend the life of the current DMCF indefinitely;
- 2) Preserve all 100 acres for productive use;
- 3) Avoid building a landfill that will require perpetual service & cost



LWA Reuse Costs Less with Better Cash Flow

1. Avoids MD spending ~ \$200 million over the next 2 years to expand Cox Creek
2. Eliminates the need spend over \$430 million by 2020 to build additional DMCFs – on sites not guaranteed to be available - to meet on-going disposal needs.
3. LWA Reuse requires no public capital, its reuse fee is guaranteed & the plant will operate indefinitely – this provides cost and disposal means certainty.



LWA Reuse At Cox Creek

Good for the Environment, the Economy & Business

- 1. Does not require public capital investment – The \$100 million facility is financed by HarborRock.**
- 2. Does not require a guaranteed supply of dredged material;**
- 3. Saves Maryland more than \$309 million over the next 5 years**
- 4. Creates 65 family wage jobs & \$2 million annually in new taxes**
- 5. Does not have any regulatory impediments other than normal permitting .**
- 6. The final products meet all environmental & product standards**

Conowingo Dam Project Overview

The 2025 Chesapeake Bay TMDL



[District of Columbia, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia](#) are to reduce water pollution in streams and rivers in connection with EPA's Total Maximum Daily Load to restore the Chesapeake Bay

[The Bay TMDL](#), a comprehensive "pollution diet," established in 2010 is based largely on [watershed implementation plans \(WIPs\)](#)

In 2012, the [7 jurisdictions submitted Phase II WIPs](#) designed to strengthen the initial cleanup strategies and reflect the involvement of local partners.

The Bay TMDL is a key part of an accountability framework [to ensure that all pollution control measures](#) needed to fully restore the Bay and its tidal rivers [are in place by 2025](#)

[Practices are to be in place by 2017 to meet 60% of the necessary pollution reductions](#)

Current Status

After more than 4 decades and billions of dollars in direct and indirect efforts...

Chesapeake Bay Foundation rates the Chesapeake Bay Water Quality a “32” (D+) in its 2014 State of the Bay Report

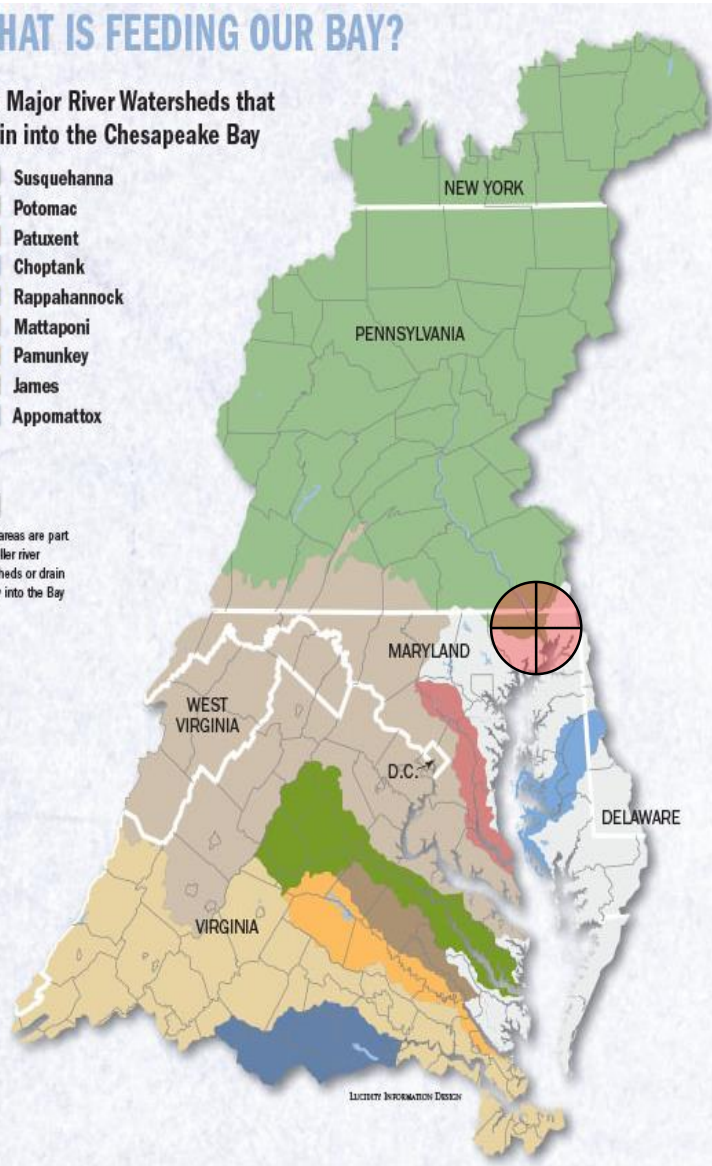
The Susquehanna's Influence on the Bay

WHAT IS FEEDING OUR BAY?

The Major River Watersheds that Drain into the Chesapeake Bay

- Susquehanna
- Potomac
- Patuxent
- Choptank
- Rappahannock
- Mattaponi
- Pamunkey
- James
- Appomattox

These areas are part of smaller river watersheds or drain directly into the Bay



The Susquehanna River Drainage Basin:

- ✓ 6,275 sq. miles in New York (23%)
- ✓ 20,960 sq. miles in Pennsylvania (76%)
- ✓ 275 sq. miles in Maryland (1%)

Supplies to the Chesapeake Bay:

47% of the freshwater; > 90% to upper Bay

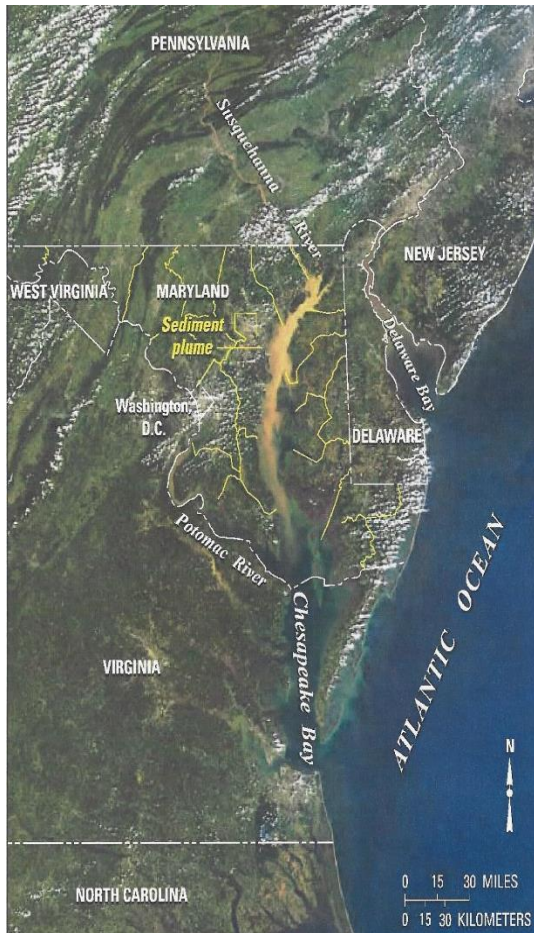
41% of the Nitrogen

25% of the Phosphorus

27% of the sediment

“Due to sheer volume... There is concern all other actions related to the Bay WILL FAIL unless the Susquehanna River’s Conowingo Dam N-P-S outflows are mitigated. “

Tropical Storm Lee Dispelled any Doubts about the Relevance of the Susquehanna to the Bay



	Nitrogen	Phosphorus	Sediment
	(tons)	(tons)	(tons)
<u>Annual Reductions Needed to achieve the 2025 Susquehanna River TMDL</u>	18,210	702	320,116
Tropical Storm Lee (over 9 days)	42,000	10,600	19,000,000
	>2X	>15X	>59X

“In-rush damage from recurring tropical storms is disastrous to the Bay”

Quantities & Composition of Material Entering the Conowingo Reservoir & Overflowing the Dam

Sediment Inflow:

4,100 tons/day
(1.5 million tons/year)

Sediment Overflow:

3,370 tons/day
(1.2 million tons/year)

Nitrogen Overflow:

163 tons/day

Particulate Nitrogen with sediment: 69.3 tons/day

Phosphorus Overflow: 6.9 tons/day

Particulate Phosphorus with sediment: 5.7 tons/day

Contaminant Reductions from Sediment Removal

To reduce net sediment into the Bay from the Dam....

- Dredging/Removal must exceed the inflow rate of 1.5 million tons/year
- Every 1,000 tons of sediment removed also removes:
 - 21 tons of particulate Nitrogen
 - 1.7 tons of particulate Phosphorous.

Dredging 1,776,000 tons/year of sediment from Conowingo Reservoir will reduce year-over-year sediment delivery into the Bay by 276,000 tons every year

See next slide for details

The Effectiveness of Dredging on Contaminant Flow

Required reductions from 2010 loads for Maryland to meet its 2025 Bay TMDL		
Nitrogen	Phosphorus	Sediment
(tons/year)	(tons/year)	(tons/year)
5,795	245	13,000

	Reductions Obtained from Excess Dredging (% of 2025 TMDL)		
Excess Dredging	Nitrogen	Phosphorus	Sediment
(tons/year)	(tons/year)	(tons/year)	(tons/year)
13,000	273 (5%)	22 (9%)	13,000 (100%)
276,000	5,795 (100%)	469 (191%)	276,000 (2,123%)

“Dredging 1,776,000 tons/year of sediment from Conowingo Reservoir will help Maryland immediately exceed its 2025 Bay TMDL”

Costs¹ to Achieve the Maryland 2025 Bay TMDL

Source Sector	Reductions from 2010 Loads to be Obtained by Current WIP Methods	WIP Cost 2010-2025
	Nitrogen	
	(tons/year)	(\$ millions)
Agriculture	2,365	\$928
Wastewater	1,895	\$2,368
Stormwater	965	\$7,388
Septic Systems	575	\$3,719
Total	5,795	\$14,403

- Costs do not count costs associated with:
 - Controlling combined sewer and sanitary sewer overflows (CSOs and SSOs)
 - Maryland’s Healthy Air Act (HHA) implementation
 - Financing costs and inflation
 - System(s) O&M and replacement

The Cost of LWA Reuse for the Susquehanna?

HarborRock's all-inclusive cost to remove and reuse sediments from Conowingo Reservoir is estimated to range from \$36 to \$48 per ton of sediment

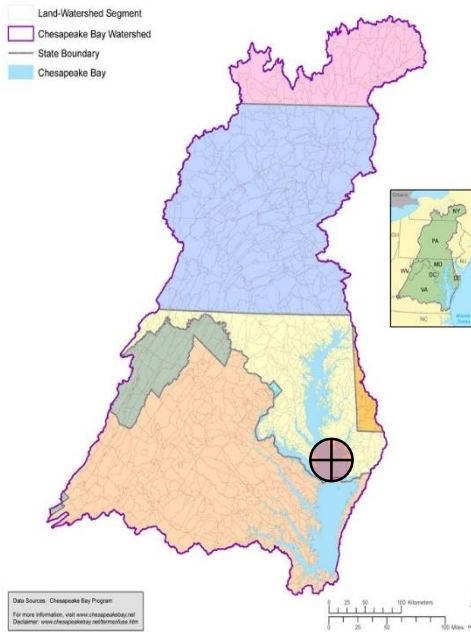
At these rates, **the cost to dredge and reuse 1,776,000 tons/year** of sediment from Conowingo Reservoir **would be \$64 to \$86 million per year**

For perspective:

A Reuse plant could operate for 43 to 58 years for the same \$3.7 billion being spent over the next 10 years on MD's Septic program.

“The economics of dredging Conowingo for Reuse would enable the Administration to save MD Taxpayers billions of dollars”

Nutrient Trading with NY & Pennsylvania?



New York	Nitrogen	Phosphorus	Sediment
	(tons/year)	(tons/year)	(tons/year)
Req't Reduction	205	78	13,670

Pennsylvania	Nitrogen	Phosphorus	Sediment
	(tons/year)	(tons/year)	(tons/year)
Req't Reduction	17,925	620	301,800

Of the 1,776,000 tons/year of sediment that Maryland must remove from the Conowingo Reservoir to exceed its 2025 Bay TMDL, removal of:

315,470 tons/year (18%) would enable NY & PA to meet their sediment TMDLs

863,333 tons/year (48%) would enable NY & PA to meet their Susquehanna River TMDLs

“Nutrient trading would get PA & NY into TMDL compliance, save those states time & money and help offset Maryland’s WIP costs”

LWA Reuse Can Begin Now

The best sequence for implementation is to:

1. Start construction for Port of Baltimore Reuse project; and
2. Begin development activities for the Conowingo project

HarborRock has completed a comprehensive demonstration of its technology for the MPA using Baltimore Harbor sediments

- Engineering data exists to start the permitting process
- MDE has preliminarily evaluated the air emissions data & the air emissions control system and found it acceptable

There are no regulatory, financial or public acceptance issues limiting Reuse at Cox Creek

Who is HarborRock?

Established in 1996, HarborRock is a consortium of companies with the skills, track record and financial capability to:

- **Finance**
- **Build**
- **Own**
- **Operate**
- **Guarantee the performance of the LWA Reuse facilities**

HarborRock Consortium Companies

- **FLSmidth (FLS)**: Global supplier to the minerals and cement industries. **[Engineering, equipment & process guarantee]**
- **Louis Berger Group, Inc. (LBG)**: a global engineering and environmental consulting firm **[Development, design & project management]**
- **Balfour Beatty Investments, Inc. (BBI)**: is the investment arm of Balfour Beatty plc headquartered in London. **[Finances]**

Balfour Beatty
Investments, Inc.



“HarborRock has resources and relationships with Internationally Respected Industry Leaders”

HarborRock Regional Affiliates

- **Cianbro:** Cianbro self-performs most project disciplines. Cianbro has a facility in Anne Arundel County, MD [**Constructor**]
- **TerranearPMC (TPMC):** Environmental services to clients nationally. TPMC has an office in Baltimore [**Operations**]
- **The Rasmussen Group:** Strategic planning and advisory services to clients nationally. Headquartered in Maryland [**Advisory**]

Balfour Beatty
Investments, Inc.

CIANBRO

FLSMIDTH



Louis Berger

Terranear**PMC**

*“HarborRock has regional relationships
with Respected Industry Leaders”*

RECENT HarborRock SUCCESES in Maryland

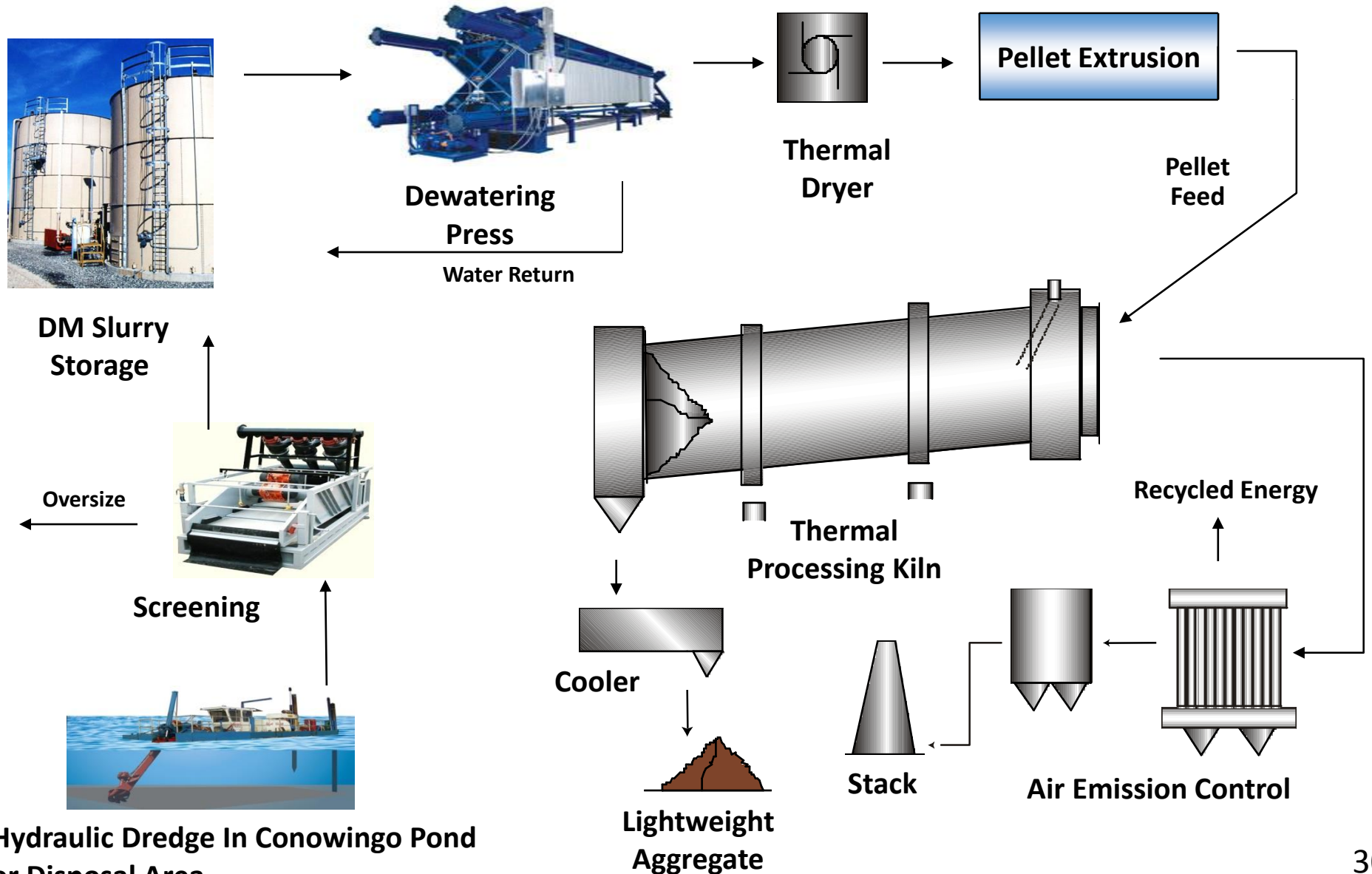
HarborRock has won **2 Maryland Port Administration (MPA)** request for proposals & **1** Request for information for the innovative reuse of dredged material

Over the past 3-4 years, **at least 6 different engineering & consulting firms retained by the MPA** have evaluated and confirmed HarborRock's business model including:

- Plant capital & operating costs
- Size & commodity price of the LWA market
- The quantity & quality of Baltimore Harbor dredged material
- Savings obtained in Cox Creek DMCF O&M costs with HarborRock

“HarborRock has been vetted by private industry and public authorities and is recognized as a practical, common sense solution”

HarborRock - Simplified Process Flowsheet

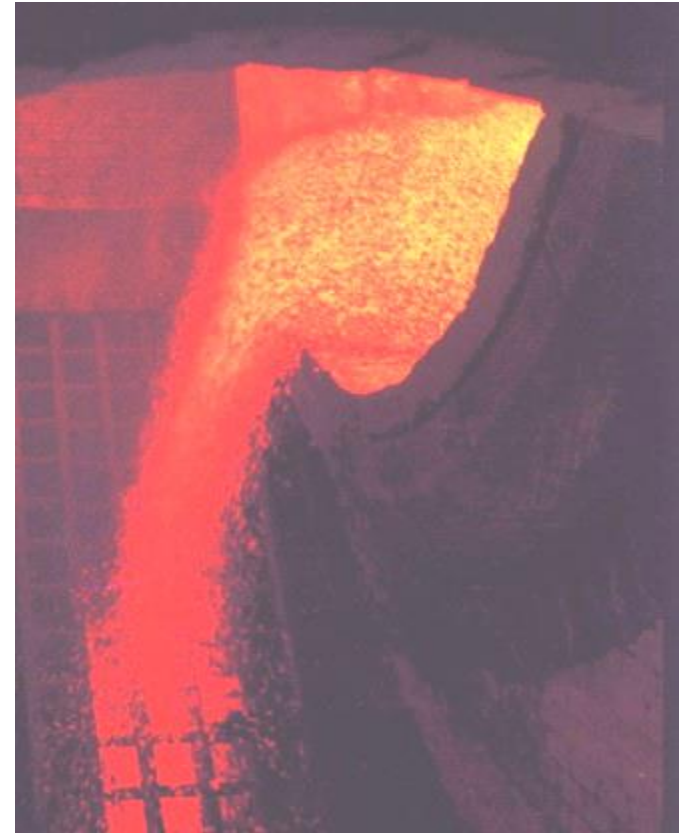


What is Lightweight Aggregate?

Volcanic stone: pumice, lava

Shale, slate or clay expanded
in rotary kilns that operate at
temperatures over 2,000° F.

***Dredged material in Baltimore
Harbor & Susquehanna River
sediments are primarily clays/silts***



LWA exiting rotary kiln

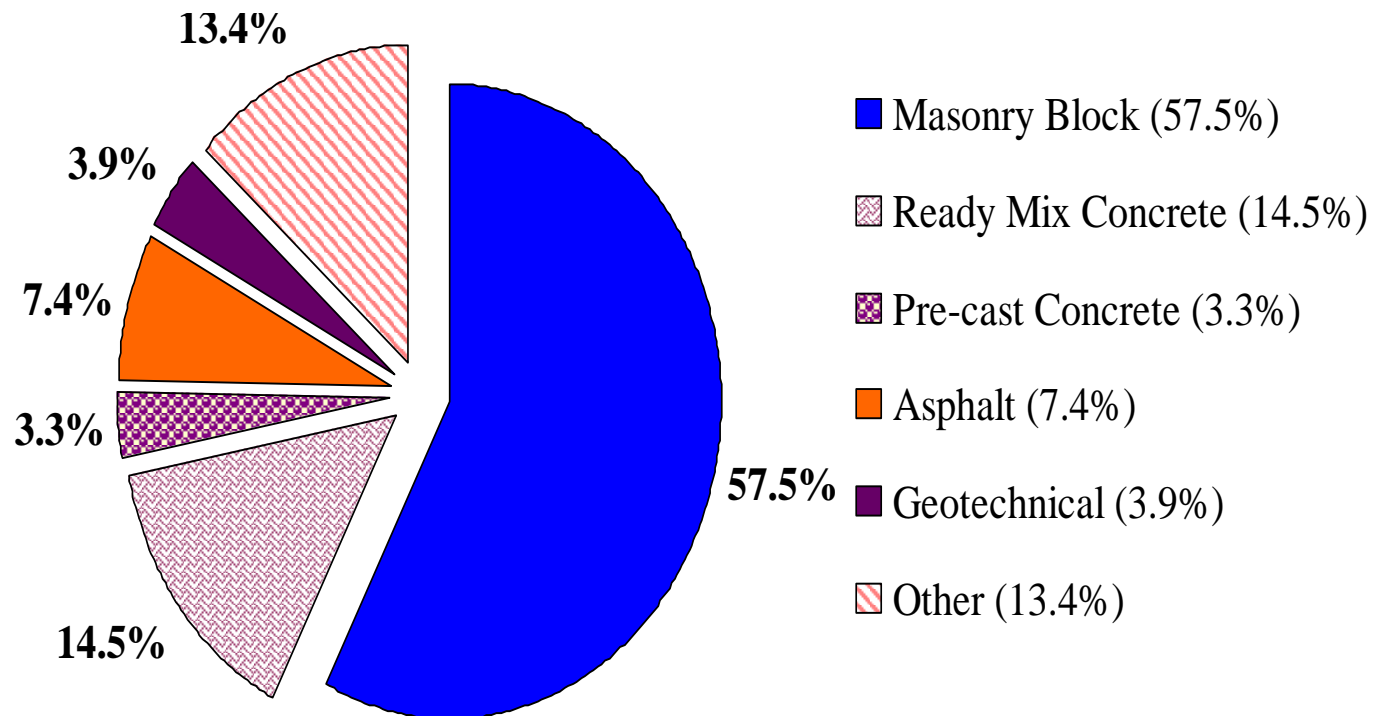
Why is Lightweight Aggregate Used?

1. Lowers structural dead load – this reduces building cost
2. Increases labor productivity
3. Better fire rating
4. Lower sound transmission
5. Higher skid resistance - improves road safety

“Sediment is a GREAT RAW MATERIAL that should be used to benefit Maryland, rather than being an on-going economic drain and persistent detriment to the health of the Chesapeake Bay.”

LWA Uses & Applications

HarborRock has perfected using fine-grained dredged material to make ASTM certified LWA and has a patent pending for the process



Multiple buyers are in place for 100% of the LWA produced

LWA provides more than twice the volume for the same weight as conventional aggregates



1 lb. Soil

1 lb. Lightweight
Aggregate

1 lb. Sand

1 lb. Gravel

1 lb.
Limestone

Advantages of HarborRock's LWA

1. Is Extruded & Highly Engineered:

- Uniform and consistent properties

2. Meets ASTM standards

- C330 LWA for Structural Concrete
- C331 LWA for Concrete Masonry Units
- C90 for Concrete Masonry Units

3. Is Inert & Highly Marketable:

- Complete destruction of organic contaminants
- Metals immobilized magnitudes below RCRA TCLP limits
- Not blended or mixed with other products
- Eligible for LEED Certification



HarborRock Test Locations and Technology Validation

U.S. HarborRock Test Locations

Beginning in 1996, HarborRock has made structural grade LWA in bench and pilot scale tests using dredged materials obtained from the following U.S. locations



Technology and Business Plan Verification

Recommended by NJDEP's consultant, Louis Berger Inc.,
for disposal of PCB contaminated materials from the **Passaic River, NJ**

Business model was validated in \$500,000 Test Program
funded in part by NJ Commission on Science & Technology
using **Delaware River** dredged materials

"Best Alternative and Most Viable Business" for disposal of
sediments from the **Puget Sound**, according to WA
State Department of Natural Resources

Selected by Shaw Environmental Inc. as the preferred
solution for the long term disposal of dredged material at
Naval Station Mayport (Jacksonville), Florida

Executed \$400,000 contract with **Maryland Port Administration**
that proved reuse is a viable long term sediment management
solution.



Scope of Reuse Demonstration for Maryland

Evaluated & tested all key aspects of the HarborRock business model

- 1) **Chemical & Physical Analysis of: DM, CDF Water, Effluent & LWA**
- 2) **Dredged Material Dewatering Effectiveness with Filter Presses**
- 3) **Dredged Material Drying Operation (natural gas)**
 - a) Mass & Energy Balance, b) Emissions Testing
- 4) **Pilot Scale LWA Production (approx. 5 tons)**
 - a) Mass & Energy Balance, b) Emissions Testing
- 5) **LWA and Concrete Masonry Block Testing per ASTM standards**
- 6) **Engineering**
 - a) Process Flow Sheet, b) Equipment Configuration, c) Air Pollution Control
- 7) **Financial**
 - a) Capital & Operating Costs, b) LWA market

Independent Verification by Maryland

The Maryland Port Administration's consultants also verified HarborRock's business model

Environ: Due Diligence of Process, Design & Capital Expenditure (CAPEX)

Findings: The design is excellent and the CAPEX is conservative

Gahagan Bryant Associates (GBA): Characteristics of Dredged Material in the CDF & Federal channels

Findings: DM has consistent and uniform chemical and physical properties

Towson State University: Suitability of DMCF & channel DM to make LWA

Finding: DM has perfect mineralogy to make an expanded clay LWA

McCormick & Taylor & OA Systems: Baltimore region LWA market study

Findings: HR's selling price is conservative, the market size and the market demand are both robust

OA Systems: Mass & water balance within CDF

Findings: HarborRock is a net water user & improves water quality within the DMCF

Maryland Environmental Service MES: Operation & Maintenance costs in DMCF with/without LWA Reuse

Finding: HR would lower O&M costs by 25% because crust management is not needed in the DMCF

Summary

➤ **LWA Reuse is REAL– it has proven itself multiple times and, compared to others methods, provides many advantages and benefits for the State of Maryland:**

- ✓ **No capital investment by Maryland**
- ✓ **Less expensive**
- ✓ **Guaranteed costs**
- ✓ **Verifiable decontamination**
- ✓ **New tax generation**
- ✓ **Sustainable process**
- ✓ **No risks to the State**
- ✓ **Improves cash flow**
- ✓ **Guaranteed performance**
- ✓ **Job creation**
- ✓ **New manufacturing**
- ✓ **Positive Environmental Impact**

“LWA Reuse could serve as a national model for environmental sustainability & innovation”

Meeting Purpose & Objectives – A Recap

Purpose:

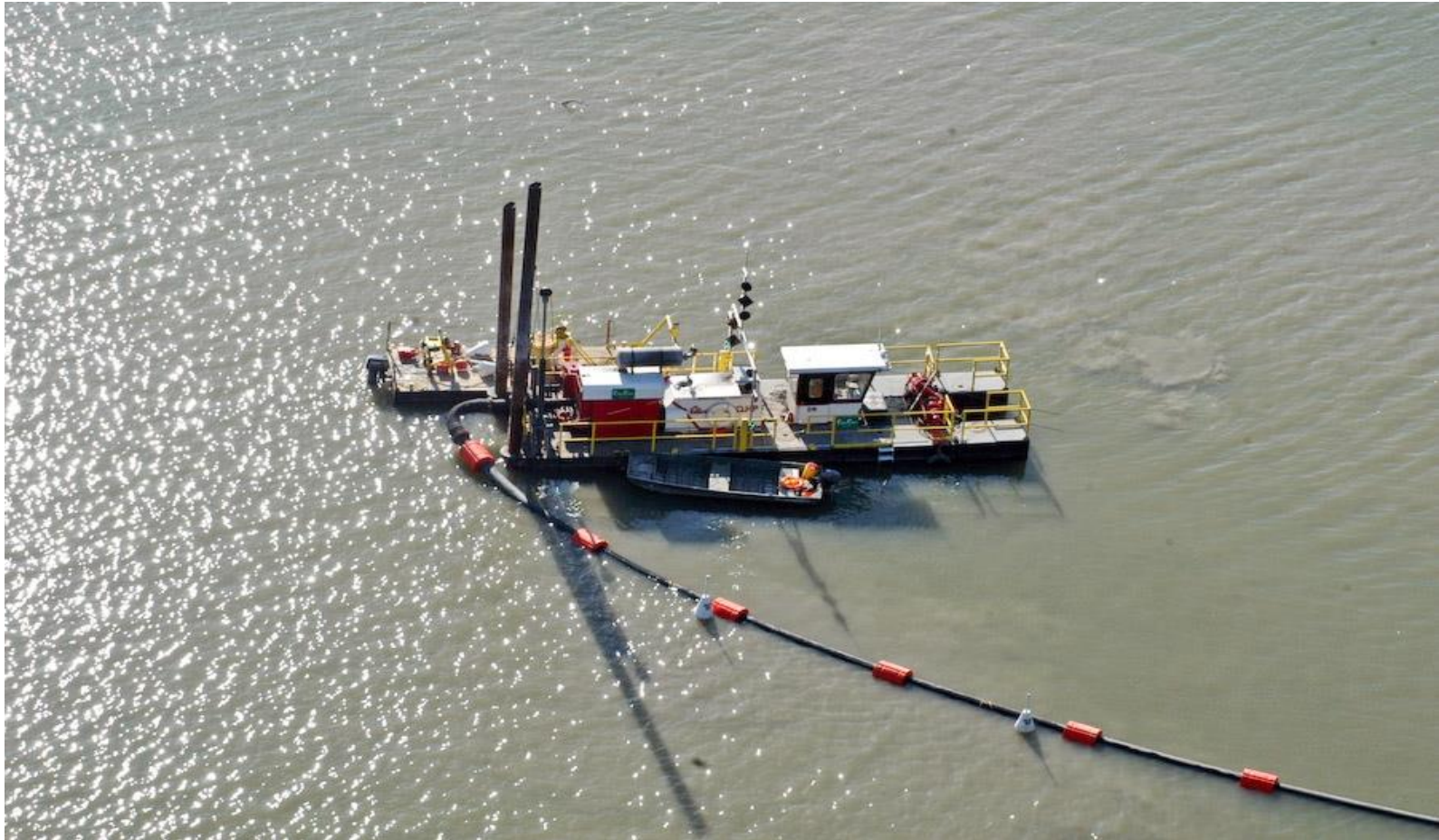
1. To Discuss Why LWA Reuse is the Best Solution for Two Sediment Management Needs in Maryland
2. Compare the Benefits & Cost of LWA Reuse to Current Methods Used to Address these Same Needs:

Objectives:

1. To identify if there are any regulatory issues with implementation of LWA reuse at the Cox Creek Dredged Material Containment Facility.
2. Identify the steps needed to use HarborRock as a management strategy at Conowingo Dam for the Chesapeake Bay TMDL:
 - Include HarborRock in Maryland's WIP
 - Establish nutrient trading with Pennsylvania and New York

Supporting Materials

Hydraulic Dredging



Over 125 years design/build experience in hydraulic dredges; two manufacturing plants in North America – one in Baltimore, MD



Is Scour really a problem? Yes, it is and here's why:



Suppose there is no disassociation of Nitrogen & Phosphorous?

1. Sediment alone is a serious problem and exceeds the Bay's assimilation abilities during major storms
2. *Even with a zero disassociation, the sediment smothers submerged aquatic vegetation and other lifeforms that are critical to the health of the Bay.*

How about studies that suggest a scour rate of 14%?

1. These studies are based on assumed flow rates of 300,000 to 400,000 CFS.
2. However, during heavy storms, actual flow rates were reported at 770,000 CFS
3. Whereas kinetic energy is a function of the square of the velocity, the **actual kinetic energy of flows during tropical storms is likely as much as 4x higher.**

Implications:

The actual scour rate during heavy storms is likely 4x higher than current estimates - much greater damage to the Bay is occurring from scour.

Contact Information

Jeffrey B. Otto, PE, President

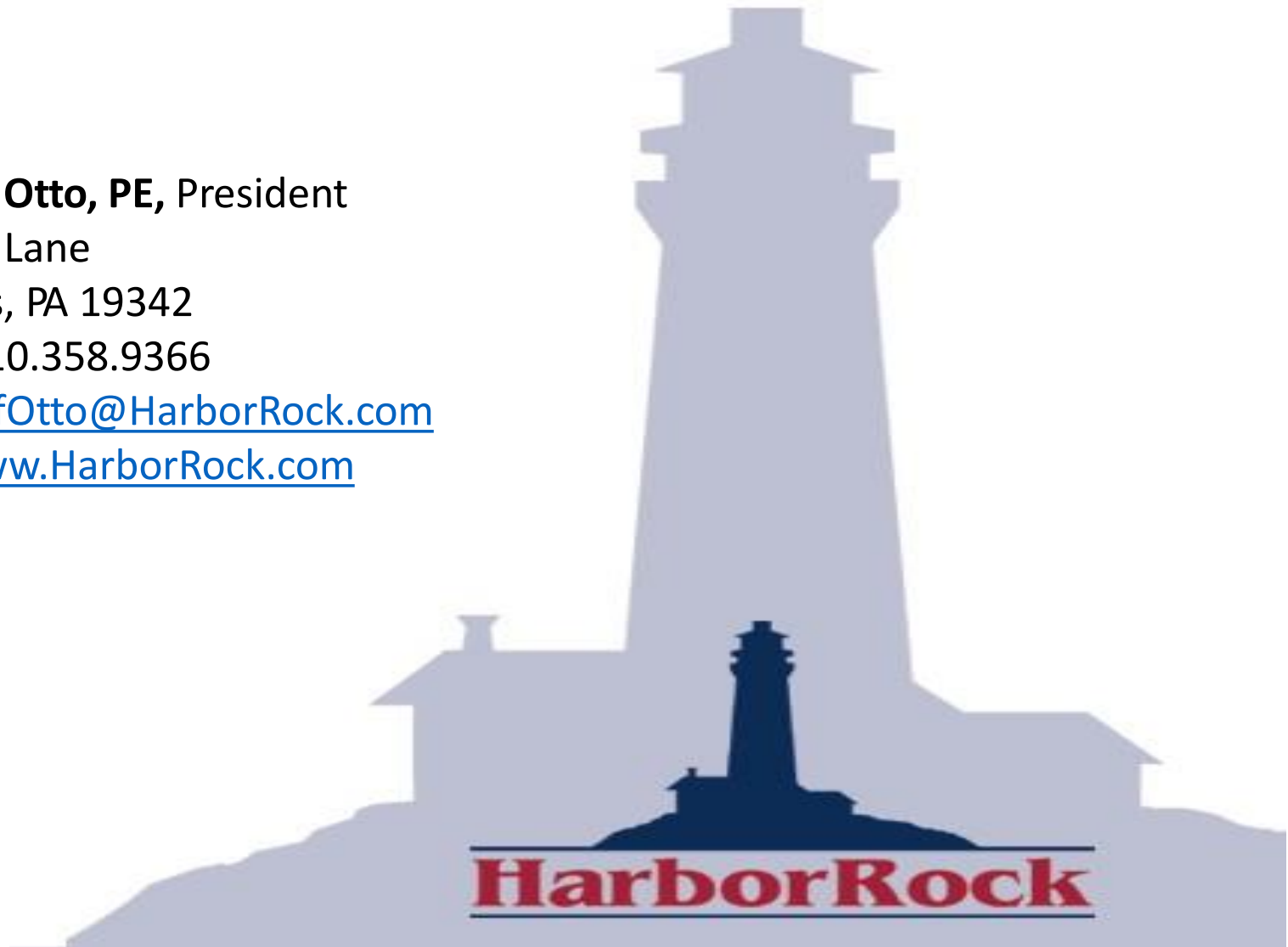
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Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land
& Resource Management

Meeting Summary for August 17, 2016

Members

Karen Leatherwood, Chair – absent
David Hynes, Vice Chair
Curtis Barret
Ellen Cutsail
Amy Krebs
Frank Vleck
Sandy Zebal

County Government

Brenda Dinne, Special Projects Coordinator / EAC Staff
Liaison
Cindy Myers-Crumbacker, Recording Secretary
Tom Devilbiss, Director, Land & Resource Management

Other Attendees

Kristen Weiss Fidler, Maryland Port Authority

1. CALL TO ORDER –

Mr. Hynes, Vice Chair, officially called the August 17, 2016, meeting to order at 3:00 p.m. in Room 105 of the County Office Building. (Ms. Leatherwood was away this month.)

2. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

3. APPROVAL OF MEETING MINUTES –

Approval of the July minutes was discussed, and no changes were offered.

APPROVAL OF MINUTES – Motion 256-16: Motion was made by Frank Vleck and seconded by Ellen Cutsail to approve the July 17, 2016, meeting minutes. Motion carried.

4. CHAIR AND COMMITTEE REPORTS –

a. Solid Waste Subcommittee:

Ms. Cutsail reported that there has been no new activity since last month, as the Solid Waste Advisory Council (SWAC) has not met since then. Mr. Vleck noted that he had recently seen in Westminster area three different haulers picking up the trash. Ms. Cutsail commented it must have been in an unincorporated area, which individuals are responsible for arranging their own hauler. Districting by haulers is being discussed in the SWAC.

5. STAFF LIASION REPORT

Ms. Dinne reported that the September meeting agenda will include a status update on the residential solar requirements amendment, continued discussion on the public MS4

workshop/event, and discussion on the lightweight aggregate fact sheet. In addition, someone will be coming to provide an informational presentation regarding the County's Energy Saver Loan Program.

Ms. Dinne indicated that Glenn Edwards has sent dates for two upcoming event volunteer opportunities. Sykesville Harvest will be on September 10, and Mt. Airy Lions Fall Festival will be on October 1, 2016. More information will be passed along as it becomes available, but anyone interested in volunteering can let Ms. Dinne know.

6. **OLD BUSINESS** –

a. Lightweight Aggregate – Maryland Port Administration

Ms. Kristen Weiss Fidler, Senior Policy Analyst and Outreach Strategist with Maryland Port Administration (MPA), presented to the EAC regarding MPA's experience with lightweight aggregate (LWA) in the context of the port's dredging needs. *Attached presentation, "Innovative Reuse Dredged Material," accompanies this summary.*

Slide 2: Ms. Fidler started by pointing out that not all issues experienced by MPA are applicable elsewhere. She explained that MPA is required to have a rolling 20-year plan for dealing with dredge material. The current annual dredging is considered "maintenance dredging." Dredging occurs in the harbor as well as in the shipping channels. They have a couple containment facilities that receive the dredge material – Cox Creek and Masonville. These are relatively smaller facilities. In 2009, the 1,100-acre Hart-Miller Island was closed for additional dredge material, which created a long-term capacity issue. Poplar Island is a site where dredge material is being used to rebuild an eroded island in the Bay. This is considered a beneficial reuse project and is helping to rebuild habitat, restore wetlands, stabilize the shoreline, and enhance aquatic habitat. Solutions for additional capacity must be prioritized, with beneficial and innovative reuse given top priority. An innovative reuse project would be one in which you blend dredge material with something else, such as compost or concrete, to create a usable product.

Innovative reuse was defined in statute in 2001, so it is not a new concept. However, while they are actively making headway, MPA has hit several pitfalls. They found, after a ten-year pilot project, that there could not be one "silver bullet" to address the problem of what to do with the dredge materials.

The material dredged is very fine, not like sand. It is a mix of silts and clays, which impacts what the material can be used for. Metals, such as naturally occurring arsenic and chromium, bind to the fine material. There are some organics, but in low concentration. The materials must be tested by the U.S. Army Corps of Engineers (USACE), which needs to show that the material is not hazardous waste in order for a permit to be issued under the Clean Water Act.

The options to address the pollutants in the sediment are to bind them to something else or to burn them off. Each new "touch" or process increases the cost of the final product or placement. Cox Creek and Masonville are the last two sites available with deep-water access and low transportation costs. Potential new sites are surrounded by densely populated areas, making it difficult to find a way forward. The harbor and Bay dredge materials both met the stringent ocean placement standards.

Slide 3: MPA funded several projects from 2008-2013 looking for alternatives to the Bay islands and containment facilities. Lightweight aggregate was among these. This pilot project was successful in that it showed that the dredge material could be made into this product.

Maryland Department of the Environment (MDE) was comfortable with the process and the product, and it came down to whether MPA was comfortable with moving forward.

Slide 4: Ms. Fidler described what LWA is and passed around samples.

Slide 5: A Public-Private Partnership (P3) Request for Information (RFI) was issued. The responses were extremely limited.

Slide 6 & 7: The 2014 General Assembly saw that the MPA was looking at investing in these lightweight aggregate facilities and wanted to know more about it. A work group was formed, and only six months were given to do the market and product research, feasibility, etc. A Joint Chairmen's Report was issued. As a result, the report concluded that there was a severe lack of competition and experience at a large scale, and a Request for Proposal (RFP) was not subsequently issued. Another factor was that, while MPA wants to dredge annually to maintain the harbor and shipping channels, the USACE actually performs the dredging. The USACE will only dredge if it remains authorized and funded.

Slide 8: Ms. Fidler reviewed lessons learned through the process of the report and the pilot projects. One of the big obstacles to marketability is the perception that the material is contaminated. There was market demand, but it was speculative due to the contaminants. The public has challenged the permit many times in the past 30 years, with significant opposition to other uses of the dredge material. Another obstacle is the lack of performance history of a comparable product and inability to guarantee quantity. The USACE has control over the dredge material, so MPA cannot commit to quantities. The cost at the time of the study also proved to be significantly more expensive than traditional methods. Ms. Fidler noted that there may be some operations existing internationally now that did not exist at the time of the study. She also pointed out that most traditional method cost estimates do not take into account the long-term costs of placement options. Since most alternative methods have looked at long-term costs, the cost comparison is difficult. They have not yet been able to put a cost on avoidance of a new "landfill."

Slide 9: Costs per cubic yard escalated at 3 percent per year shown on the chart that eventually the cost of traditional methods would surpass the cost of innovative reuse / beneficial use. Since it takes 5 to 15 years to get a new site, MPA needs to start moving forward with something now. After the Joint Chairmen's Report was issued, MPA decided to move forward with a series of smaller solutions and will have to include public education and outreach.

MDE was brought into discussions for options to move forward. While comfortable with the LWA product, MDE had a slew of uncertainties for other uses. There is no standard for comparison. In addition, it was unclear which MDE agency would actually regulate and approve the use, and no decision was made on this issue.

Slide 10: An IBR (Innovative/Beneficial Reuse) Workgroup was formed one year ago to try to address some of the outstanding issues. The group includes MPA, MDE, USACE, Department of Natural Resources (DNR), and others. Bruce Michael, who was present at the Harbor Rock presentation last month, is on this workgroup. The workgroup will wrap up this time next year. The final report will have to be approved by the secretaries of all of these agencies. It will take another year beyond that to issue an RFI or RFP, which would be for any reuse, not just LWA. While the focus is on Port material, this could address dredge material from anywhere in the state. Therefore, any recommended regulations or framework should not preclude non-Port dredging.

The USACE comes up with the base/plan standards. The U.S. Environmental Protection Agency (EPA) and USACE issued beneficial use guidance but leave the regulation of it up to the State. State law could require placement elsewhere.

Ms. Fidler entertained questions from the EAC members then departed the meeting.

Mr. Devilbiss noted that the Port generates \$2.2 billion per year in revenue, and MPA is still having difficulty getting other agencies to move forward with a solution. Addressing the material behind the Conowingo Dam will not generate any revenue for the State. In addition, the material behind the Conowingo is very old, hasn't been touched, and contains pollutants from agriculture and mining. Given the additional challenges of the contents of this material, getting a decision made at the State and Federal levels seems like an even greater barrier to moving forward than that for the Port of Baltimore.

Ms. Dinne concluded the discussion by saying that the topic will be on the EAC agenda for discussion for the next couple months to complete the Fact Sheet tasked to the EAC in its 2016 work plan.

b. General Public Workshop – Discussion

Ms. Dinne initiated discussion regarding the format for the public workshop. The format needs to be nailed down before a facility can be reserved, as the type of event will dictate the type of facility needed. She reminded the members that Ms. Leatherwood suggested that George Schooley speak about care of septic systems. She also informed the group that she had contacted Maria Myers about partnering to hold the rain barrel and compost bin sale at the same date and location, but it wouldn't work out because Ms. Myers could not transport the bins to other locations.

It was suggested that solar could be another topic for the workshop. Ms. Krebs asked if the workshop is a requirement in the NPDES MS4 permit, as solar would not fall under the topic of stormwater. Ms. Dinne replied that the permit indicates the type of information that must be addressed but does not specify the delivery methods. It does not specifically say a workshop must be held. She went on to say that we would still be able to take credit for the effort as long as stormwater was a topic addressed at the event. It would not have to be limited to addressing stormwater.

There was some discussion on the recent flooding in Ellicott City. Mr. Devilbiss clarified that the purpose of stormwater management is not for flood control; it is to address water quality. Ms. Cutsail suggested that stormwater as it relates to homeowners should be a workshop topic – what stormwater is and what homeowners can do.

Ms. Krebs suggested partnering with industry in some way to be able to provide information to homeowners on products they may want to learn more about.

Ms. Dinne said that staff will begin looking for a facility for the event.

c. Residential Solar Size Requirements – Discussion

Ms. Krebs reported on the EAC meeting with the Carroll County Planning Commission on the evening of August 3. Ms. Leatherwood indicated the issues they discussed subsequent to the June 29 meeting with the Planning Commission and the EAC's decision not to change its recommendation. She said that Commissioner Rothschild offered a brief presentation and comments. The Planning Commission then voted unanimously to support the EAC's recommendations without any changes.

Ms. Dinne shared the next steps. At this point, the process transfers to staff. The EAC gave their report and recommendations to the Board. The staff will now take those recommendations and bring a code amendment proposal to the Board that would implement the EAC's recommendations. Staff requested time on the BCC agenda. EAC members would still be needed at that meeting to answer questions on their discussion and decision. Staff will request approval from the Board to proceed with scheduling a public hearing.

Ms. Dinne brought up that, at that time, staff will need to make the Board aware that a minor change was made to clarify the intention of the EAC with regard to the maximum surface area of solar panels on lots over three acres. The language was originally based on the roof, or roofs, of all structures on the property. At the Planning Commission meeting, Ms. Leatherwood indicated that this was intended to refer to the building footprint. Mr. Voight agreed at that time. Members of the EAC questioned if this was their intent. Ms. Cutsail read the wording from the minutes for the meeting at which the issue was voted on, which specifically read that the solar surface area was based on the area of the roof, or roofs, of all structures on the property. After some discussion, all agreed that this should not be changed to read that the maximum surface area is based on the building footprint. The basis should remain with roof area. Ms. Dinne will ensure the language that is presented to the Board reflects this.

7. **NEW BUSINESS –**
None

8. **OTHER –**
None

9. **ADJOURN REGULAR MEETING –**

ADJOURNMENT OF MEETING – Motion 257-16: Motion was made by Sandra Zebal and seconded by Ellen Cutsail to adjourn the August 17, 2016, meeting. Motion carried.

The meeting adjourned at 4:51 p.m. The next regular monthly meeting is scheduled for Wednesday, September 21, 2016, at 3:00 p.m. in Room 311 of the County Office Building.



Innovative Reuse Dredged Material

Lessons Learned: Lightweight Aggregate Pilot Project

Carroll County Commissioners
Environmental Advisory Council
August 17, 2016



Background

- ▶ Maryland's Dredged Material Management Program
 - **Dredging Needs** – maintain a safe and clear shipping channel
 - Bay material
 - Harbor material
 - C&D Canal approach channels material
 - **Placement Capacity** – availability; cost-effectiveness; public acceptance
 - **Management Solutions: Priorities for the Program**
 - Beneficial Use
 - Innovative Reuse
 - Goal: Recycle 500,000 cy of Harbor material per year
 - **What's in the Material?**
 - Sediment Quality
 - Physical Characteristics
 - Chemical Characteristics



Innovative Reuse

- ▶ **Innovative Reuse:** includes the use of dredged material in the development or manufacturing of commercial, industrial, horticultural, agricultural, or other products.
 - MPA Demonstration Projects 2008 – 2013
 - Schnabel Engineered Fill
 - Shirley Plantation Reclamation
 - Lightweight Aggregate
 - Manufactured Topsoil Processing
 - Agricultural Amendments
 - Request for Information (RFI) for LWA 2013
 - Joint Chairmen's Report (JCR) 2014
 - Revised Innovative & Beneficial Reuse Strategy 2014
 - Interagency Regulatory Workgroup 2015-2016

Lightweight Aggregate

- ▶ Lightweight Aggregate (LWA)
 - LWA is a coarse aggregate used in the creation of lightweight products such as concrete block or pavement.
 - Thermal processing technology proven to meet industry standards for a marketable product on a demonstration scale.
 - MPA conducted small-scale pilot project 2009 - 2012





RFI - LWA

- ▶ Public-Private Partnership RFI issued December 2013
 - **Purpose:**
 - obtain information on capacity recovery at Cox Creek DMCF by converting dredged material to LWA.
 - Sent to over 375 companies and academic institutions, advertised on MPA's main and Safe Passage websites, and eMaryland Marketplace.
 - **Response:**
 - one turn-key provider,
 - seven equipment/systems suppliers,
 - one mining and processing firm
 - **Conclusion:** severe lack of competition therefore ultimately no RFP was pursued. Unsuccessful effort to expand the LWA pilot project into a full scale operation.



Joint Chairmen's Report

Considerations



- ▶ **Technical Feasibility**
 - Effort, Time, Costs, Practicality
 - Only limited pilot scale experiences; no analysis of production level scale projects
- ▶ **Commercial Viability**
 - Project Costs
 - Revenue from Sale of LWA
 - Marketability – Competing Products / Demand / Contaminants
- ▶ **Environmental Impacts / Permits**
- ▶ **Competition**
- ▶ **Regulatory Questions**
- ▶ **Public Acceptance Questions**



Joint Chairmen's Report

Analysis



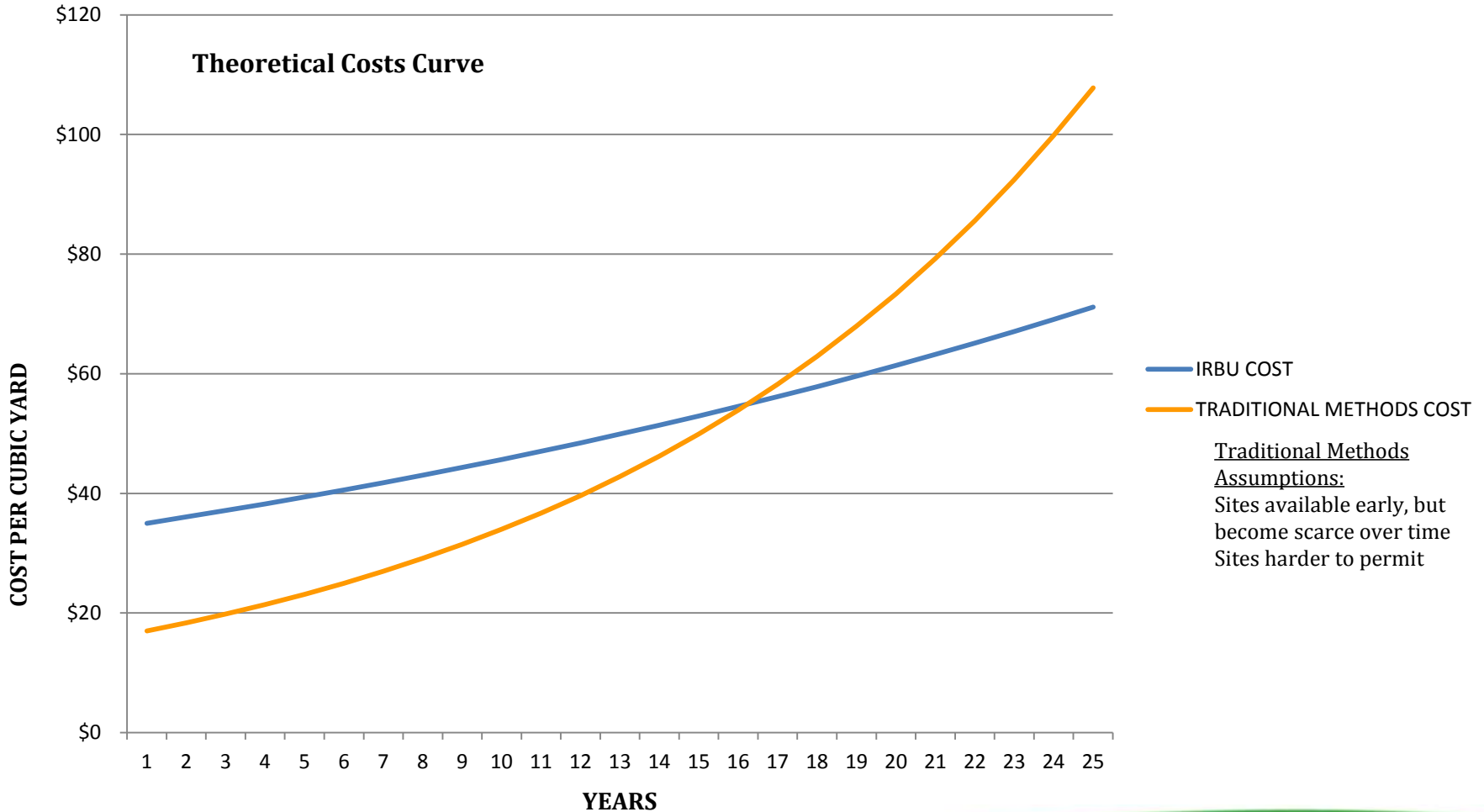
- ▶ Technically feasible, but no full-scale implementation anywhere
- ▶ Market demand for LWA, but due to contaminants in Harbor dredged material demand is speculative
- ▶ Estimated commercial value comparable to existing LWA products, however, competing products are not associated with contaminants – likely barrier to market acceptance
- ▶ Understanding/assessing full value of LWA needs a performance history of a comparable product
- ▶ 1.5 times more expensive than the most expensive traditional methods of dredged material management
- ▶ Recommended implementing **Revised IR Strategy**

Lessons Learned

- ▶ Market and market sustainability difficult to predict.
- ▶ Reliable volume and quality of available dredged material key to project economics.
- ▶ All IR options studied to date have costs per cy that are significantly higher than those associated with traditional dredged material placement options.
 - However:
 - Most cost per cy estimates do not take account of all future costs or the full suite of benefits.
 - There are fewer and fewer options for long-term placement, and costs for placement and management are expected to increase over time.
 - Cost estimates have not been “apples to apples”.



Cost considerations for decision IRBU vs. traditional land-based containment methods





IBR Regulatory Workgroup

- ▶ **Goal:** As part of the 2014 Revised IBR Strategy, conduct comprehensive review of best practices around the country and identify recommendations for policy changes to establish a more predictable, streamlined regulatory framework within which to implement IR in Maryland.
- ▶ **Key Findings & Recommendations:**
 - Technical Screening Criteria & Guidance Document
 - Close Regulatory Gaps through Existing Permitting Mechanisms where Applicable
 - State Agencies as a Leader in Reuse
 - Outreach & Education – Public Support/Acceptance Needed
 - Continue to Evaluate Need for Statute Change/COMAR
- ▶ **Next Steps:**
 - Outreach/Education Tools: Fall 2016
 - MDE Approved Technical Screening Criteria & Guidance: Spring 2017
 - Executive Order for State Agencies: 2017



Questions?

END



Carroll County Environmental Advisory Council

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Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land
& Resource Management

Meeting Summary for September 28, 2016

Members

Karen Leatherwood, Chair
David Hynes, Vice Chair – absent
Curtis Barret
Ellen Cutsail – absent
Amy Krebs – absent
Frank Vleck
Sandy Zebal

County Government

Brenda Dinne, Special Projects Coordinator / EAC Staff
Liaison
Andrea Gerhard, Comprehensive Planner, CC Dept. of
Planning

Other Attendees

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the September 28, 2016, meeting to order at 3:00 p.m. in the Reagan Room of the County Office Building.

2. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

3. APPROVAL OF MEETING MINUTES –

Approval of the August 17 minutes was discussed, and no changes were offered.

APPROVAL OF MINUTES – Motion 258-16: Motion was made by Sandy Zebal and seconded by Curtis Barrett to approve the August 17, 2016, meeting minutes. Motion carried.

4. CHAIR AND COMMITTEE REPORTS –

a. Solid Waste Subcommittee:

Ms. Leatherwood reported that on October 6 the Solid Waste Advisory Council (SWAC) will be meeting with Jim Hindman. Mr. Hindman, the founder of Jiffy Lube, will be providing consult to the SWAC to help them move forward in getting where they need to go on the discussion of options available.

5. STAFF LIASION REPORT

Ms. Dinne reported that the October meeting agenda will include a status update on the residential solar requirements amendment, continued discussion on the public MS4 workshop/event, discussion on the lightweight aggregate fact sheet benefits and challenges, and

a preliminary discussion on the residential solar public outreach materials that is included in the 2016 Work Plan.

Ms. Dinne indicated that Glenn Edwards still has slots available for a volunteer opportunity with the Mt. Airy Lions Fall Festival on October 1, 2016.

Ms. Dinne said, in the interest of time, she will save some information to share next month regarding the best available technology (BAT) regulations repeal and some of what's happening with solar in other Maryland counties.

6. **NEW BUSINESS –**

a. Energy Saver Loan Program – Andrea Gerhard

Andrea Gerhard, a comprehensive planner with the Carroll County Department of Planning, provided an overview of the County's Energy Saver Loan Program. She said the Department of Planning has administered the program since 2010. In 2009, the County was awarded \$684,100 for the program from the original American Recovery and Reinvestment Act (ARRA) stimulus money. Of that amount, over \$400,000 were used for a one-time purchase of recycling bins. The remaining roughly \$250,000 went into a revolving loan fund for energy efficiency projects. No new funds are infused into the program. Rather, as loans are repaid, those funds are then made available for new loans.

The loan must be used for residential projects. Renewable and non-renewable energy projects are eligible. However, with non-renewable energy projects, a home energy audit is required. Since it's intended to stimulate the economy, the work cannot be done by the homeowner; a contractor must be hired.

In addition, to be eligible, a property must be free of zoning violations, and the property tax bill must not be past due. The maximum loan amount is \$15,000. The funds are held in F&M Bank, and the bank makes the determination if an applicant is eligible and creditworthy. The County just directs applicants to the bank after checking for property tax delinquencies and zoning violations. Any interest collected on these low-interest loans must go to pay for the bank fees to administer the fund and program. To date, 28 applicants have been approved, with a total of over \$365,000 loaned out.

There is no advertising budget for the program. It is entirely word-of-mouth, with the exception of passing out information at the Carroll County Ag Fair. Ms. Gerhard will be briefing the Board on the program shortly. Information will also be added to the Department's webpage. Other options will continue to be explored. Ms. Leatherwood offered to write about the program in her bi-weekly newspaper column. *See the attached presentation, "Carroll County Energy Saver Loan Program."*

7. **OLD BUSINESS –**

a. Lightweight Aggregate – Fact Sheet Outline

The EAC members briefly rehashed some of the information provided by Ms. Fidler from MPA at the August meeting. Mr. Vleck observed that the Conowingo Dam dredging project poses challenges that make it unique and unable to be reasonably compared to the Port of Baltimore. Mr. Barrett reiterated that the material behind the dam could be toxic/hazardous. Ms. Leatherwood pointed out that the science-based aspect of this issue is beyond the EAC. Mr. Vleck agreed that the challenges for the EAC to consider are more of a political and bureaucracy perspective. He felt that the issue is a little too far over the EAC's head for the

information that Commissioners Rothschild and Weaver would really like. He felt that the EAC is uncomfortable making an analysis.

Ms. Leatherwood suggested that the members offer some political and process-type challenges. She started off by offering that one challenge is the lack of a track record of experience with this specific situation to draw upon and no evidence that the process of making lightweight aggregate (LWA) from the dredge materials would be sustainable. Mr. Vleck added that, while some of the costs could be mitigated, the State, and ultimately the taxpayers, will still wind up paying money into the process. If the company cannot move the product, the company will not eat the cost; it will be borne by the State. Mr. Barrett noted, however, that if something is not done, pollutants will still be escaping over the dam and finding their way into the Bay. Mr. Vleck reminded the group that LWA is just one option. There are others that also need to be explored.

Ms. Leatherwood indicated that, in Carroll County, we are worried about our local water quality. However, members of the Board want to know if they should be investing funds elsewhere rather than here in Carroll County if directing those funds toward a project that might have a big bang for the buck may be more productive. Ms. Dinne added that the Bay Total Maximum Daily Load (TMDL) is getting to be a more pressing issue.

Ms. Dinne will try to draft some challenges for the Fact Sheet that reflect the discussion from this meeting. She will send the draft out to the EAC members for review prior to the next meeting so the draft can be discussed at that time. These ideas may generate additional discussion at that meeting.

b. General Public Workshop – Discussion

Ms. Dinne shared that the possible dates for the workshop have been narrowed down to March 18 and April 8, at two different locations. Ms. Leatherwood preferred the March 18 date, as it would be less likely that people with kids would have sports conflicts.

Ms. Dinne reminded the members that the workshop needs to have a focus on stormwater. However, there are many things that can be related. For example, the County's NPDES MS4 permit also addresses litter and floatables and recycling. She explained the format, which will be more like an exhibit hall where tables are set up around the room (like booths). Each table will cover a related topic of interest to the public and be staffed by an "expert" to provide information and answer questions. This will also allow attendees to come and go at their own convenience. A separate area will be provided where each "expert" will take turns giving 15-minute presentations on the topic, so a larger number of attendees may choose to listen to the information and ask questions as a group.

Ms. Dinne asked for suggestions for topics for these tables. Ms. Leatherwood had previously suggested septic tanks be a topic, and she offered to ask Mr. George Schooley to present. She shared that he regularly provides classes at the libraries on septic maintenance.

The following additional ideas were suggested:

- Composting
- Neighborhood stormwater runoff model
- Rain gardens
- Lawn/yard maintenance
- Pervious pavement
- Forest / tree planting

- Stream Corridor Assessments (SCA) and Stream Buffer Initiative (SBI)
- Landowner who participated in SCA and/or the SBI
- Stormwater related videos to run continuously

Mr. Vleck offered to:

1. Be the expert and presenter for rain gardens and potentially lawn/yard maintenance,
2. Draft information to be incorporated to a rain garden brochure (to be sent to Ms. Dinne to be incorporated and formatted), and
3. Contact the Carroll County Forestry Board about talking about tree planting.

Ms. Dinne offered to ask Mr. Martin Covington if he would be willing to be there with his porous paving model. Mr. Vleck stated that we need to be sure we are gearing this toward what homeowners can do and actually have a “take away” from the event.

Ms. Dinne will put together a list of the topics that were discussed to send out to the EAC for further consideration. She will also talk to Ms. Gale Engles and Mr. Byron Madigan with the Carroll County Bureau of Resource Management to get their ideas and availability.

c. Residential Solar Size Requirements – Status

Ms. Dinne shared that Ms. Leatherwood joined she and Mr. Devilbiss on September 15 in briefing the Board on the process to date with the residential solar size requirements amendment and request for approval to proceed to public hearing. The Board approved the request, and Ms. Dinne confirmed that the public hearing is scheduled for October 13 at 10:00 AM on the Board’s open session agenda. Although staff requested immediate action, the Board could decide to hold the record open for 10 days. Either way, following the hearing, the Board would then deliberate and potentially adopt the amendment.

8. **OTHER** –
None

9. **ADJOURN REGULAR MEETING** –

ADJOURNMENT OF MEETING – Motion 259-16: Motion was made by Frank Vleck and seconded by Curtis Barrett to adjourn the September 28, 2016, meeting. Motion carried.

The meeting adjourned at 4:06 p.m. The next regular monthly meeting is scheduled for Wednesday, October 19, 2016, at 3:00 p.m. in Room 311 of the County Office Building.

Carroll County Energy Saver Loan Program

Environmental Advisory Council
September 28, 2016



Purpose

To provide Carroll County residents with low interest rate loans for home improvement energy efficiency projects that help reduce their energy bills



Origin

- 2009 American Recovery and Reinvestment Act
 - U.S. Department of Energy's (DOE's) Energy Efficiency and Conservation Block Grant (EECBG) Program
 - \$3.2 billion



Origin

- \$684,100 of this money was awarded to Carroll County.
 - \$419,000 went to purchasing recycling bins
 - overseen by Carroll County DPW
 - \$250,000 went to a revolving loan fund (RLF) for energy efficiency projects → Carroll ESLP



Program Criteria

- Principle Residence
- Approved energy projects.
- Nonrenewable energy projects → Home Energy Audit
 - “Energy Star Certified” Auditors
 - Homeowners are prohibited from performing the work themselves



Program Criteria

- The property taxes must be current
- The property must be free of zoning violations
- Program funding = \$250,000
- Max loan per household = \$15,000
- Interest = 2.5% per year (5-year term)



Program Criteria

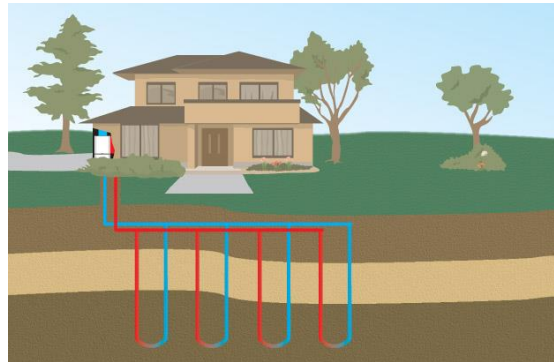
- Loan Servicer: Farmers and Merchants Bank
(Contact: Callie Jennings)
 - 14 days to apply for loan
 - Bank determines applicant's financial eligibility
 - Additional government grants or rebates must be used towards paying the loan
 - Interest = Bank Admin Fee



Approved Projects

- **Renewable Energy Improvements:**
 - Solar/Photovoltaic roof or ground mounted array
 - Geothermal loop or well type heating and cooling systems
 - Wind turbine energy producing systems

Approved Projects



Approved Projects

- Home Improvement Retrofits:
 - Programmable thermostats w/complete energy system
 - Ceiling, wall, attic or floor insulation
 - Whole-house sealing
 - Water heater insulation and pipe insulation
 - Energy Star water heater replacement
 - Electric or gas tankless water heater(s)
 - Solar hot water heater installation
 - Storm windows and/or doors
 - Air distribution system improvements,
 - *Other projects found to reduce the consumption of energy in the home*

Current Marketing

- Over \$350,000 has been loaned out to residents with no advertising except:
 - Word-of-mouth
 - Contractors
 - Carroll Hospital Annual Earth Day Fair

What is next for the program?

- Continue to promote via word of mouth
- Brief the Board of County Commissioners
- Add this program to the Planning Department's website
- Continue to explore different outreach opportunities

Questions





Carroll County Environmental Advisory Council

225 N Center Street
Westminster, MD 21157-5194
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eac@ccg.carr.org

Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land
& Resource Management

Meeting Summary for October 19, 2016

Members

Karen Leatherwood, Chair
David Hynes, Vice Chair – absent
Curtis Barret – absent
Ellen Cutsail
Amy Krebs
Frank Vleck
Sandy Zebal

County Government

Brenda Dinne, Special Projects Coordinator / EAC Staff
Liaison

Other Attendees

Charlene Norris, Citizen

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the October 19, 2016, meeting of the Environmental Advisory Council (EAC) to order at 3:02 p.m. in Room 311 of the County Office Building.

2. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

3. APPROVAL OF MEETING MINUTES –

Approval of the September 28 minutes was discussed, and no changes were offered.

APPROVAL OF MINUTES – Motion 260-16: Motion was made by Sandy Zebal and seconded by Ellen Cutsail to approve the September 28, 2016, meeting minutes. Motion carried.

4. CHAIR AND COMMITTEE REPORTS –

a. Solid Waste Subcommittee:

Ms. Leatherwood reported that Jim Hindman presented to the Solid Waste Advisory Council (SWAC). Mr. Hindman recommended the Board hire a catalyst to move the ideas of the SWAC forward and implement the recommendations. The DPW staff does not have the resources to do this. This probably will not be on the Board's agenda until after January 1.

5. STAFF LIASION REPORT

The EAC members discussed and chose November 15 to reschedule the November EAC meeting date to accommodate a schedule conflict. The meeting will be held in Room 105 at 3:00 on Tuesday, November 15, 2016.

Ms. Dinne indicated that the November meeting agenda will include, thus far, discussion of the residential solar public outreach materials, review of the draft work plan, and continued discussion of the MS4 General Public Workshop.

6. OLD BUSINESS –

One member of the public was present regarding the Residential Solar Size Requirements in Residential Districts. The Chair chose to reorder the agenda, moving the residential solar discussion up to first item on the agenda under New Business to free Ms. Norris up from sitting through other agenda items.

c. Residential Solar Size Requirements – Discussion of Proposed Revision

The Board held a public hearing on October 13 regarding the zoning amendment to address solar size requirements in the residential zoning districts. Comments were received indicating that the proposed additional surface area allowed for lots over 3 acres was still inadequate, particularly for lots 10, 20, or 50 acres. These lots are big enough that the aesthetics could be less of an issue depending on placement. In addition, many properties in the Conservation district are used for agriculture. Ms. Dinne clarified that agriculture is a permitted use in the Conservation district, even though it's a residential district. Additional power could be needed to provide energy to the accessory structures for agricultural uses in the Conservation district. The Board directed staff to propose a revision that would accommodate a variance or other option to address this concern for these properties. Staff drafted a proposal and provided it to the EAC members to review and provide feedback before a final proposal was sent to the Board. The Board held the record open for 10 days following the hearing and was scheduled on October 27, 2016, to discuss and decide on adopting this amendment. *See the attached proposed addition to the Solar Energy Conversion Facilities amendment. [Proposed additions shown in blue highlight.]*

Ms. Charlene Norris, who provided comments at the public hearing, described to the EAC members the comments she made to the Board at the hearing, as summarized above. Her property in the Conservation district is about 40 acres with barns, heaters, sprinklers, etc. She uses three times the average use. She suggested to the Board that a variance be allowed in the Conservation district.

Ms. Leatherwood indicated that the EAC was focused on the residential uses, including the lots closer to 3 acres in the Conservation district. She felt that these properties should be able to have the solar panels needed to accommodate their expected energy use for the property. She further stated that the Board was open to making this change. According to Tim Burke, County Attorney, this change would not require the amendment to go back through the public hearing process again.

Ms. Dinne explained the staff proposal. The total surface area allowed on lots over 3 acres would be reduced from 1½ times the aggregate of all roof surfaces on the property to only 1 times the aggregate (100%). However, all of this could be ground mounted, rather than only half of the

roof surface. While this reduces the overall surface area, it may still allow for increased efficiency, as much of the roof surface would be inefficient due to position of the roof to the sun. The flexibility to put a portion or all of the panels on the ground would help the property owner placing the panels to take greater advantage of the sun's location and angle. In addition, a variance could be requested for properties over 3 acres in the Conservation district. This request would have to be accompanied by documentation by a professional solar installer that is certified by the North American Board of Certified Energy Practitioners (NABCEP). The documentation would indicate the solar panels needed to accommodate 100 percent of the expected energy use for the property based on the previous 12 months' usage. It would also provide the energy that could be provided by the amount of solar facilities allowed, how that compares to the expected energy usage, and the additional amount of solar panels needed to accommodate the 100 percent of expected energy use.

In reviewing the proposed revision, the EAC suggested that, after "A variance may be requested...", the words "for lots more than 3 acres" be added to clarify that this does not apply to all lots in the Conservation district. Ms. Cutsail asked if lots in the "R" districts could be greater than 3 acres. Ms. Dinne replied that they could. However, the proposal was just for the Conservation district, as the minimum lot size if the property develops would be 3 acres. It would be much less for lots in the "R" districts, and could possibly conflict more easily with the surface area requirements that are proposed in the "R" districts if the property were to subdivide and develop. Ms. Leatherwood responded that she was comfortable with limiting the variance to lots over 3 acres in the Conservation district.

Mr. Vleck reiterated Mr. Barrett's comments from a previous meeting that he would not be able to get enough panels to power his home. Ms. Leatherwood pointed out that this amendment did not set a prescribed maximum for the variance other than 100 percent of the expected energy usage. Therefore, if Mr. Barrett's property was greater than 3 acres in the Conservation district, he could request a variance for the full amount needed.

Although Ms. Krebs agreed with the proposal, she raised the issue that this would present somewhat of an inequity for the smaller lots. Ms. Leatherwood pointed out that the amendment represents an increase from the amount of ground-mounted panels that the properties could currently get under the adopted zoning code. In addition, a larger ground-mounted surface area for the smaller properties would still present an aesthetic issue, whereas this could possibly be addressed for the lots eligible to request a variance. If, over time, the Board feels these size limits are still inadequate, they could amend the code again later. Ms. Krebs agreed but pointed out that 10-acre lots in the "R" districts would not have this opportunity. Ms. Norris responded that someone could put up a bunch of solar panels and then subdivide the property into small lots. Ms. Dinne reiterated that the additional likelihood of subdividing a property in an "R" district, resulting in small lots, was one of the reasons that the proposal was to apply the variance only to properties over 3 acres in the Conservation district.

Ms. Leatherwood again indicated that she was comfortable with this proposal, particularly given the input of the Zoning Administrator and the Director of Land & Resource Management in developing it.

Ms. Dinne shared that, if an applicant was not happy with the decision of the Zoning Administrator on a variance request, the decision could be appealed to the Board of Zoning Appeals (BZA).

Ms. Leatherwood proposed that the EAC support moving forward with this proposal with the addition of the 3-acre clarification.

VARIANCE PROPOSAL TO SOLAR AMENDMENT – Motion 261-16: Motion was made by Ellen Cutsail and seconded by Frank Vleck to support the change in aggregate solar surface area allowable on lots over 3 acres, plus the addition of a variance proposal for lots in the Conservation district, with the addition of the clarification that this applies to lots over 3 acres. Motion carried.

Ms. Norris asked what the Residential Solar Outreach Materials item was on the agenda before she left. Ms. Leatherwood explained that it is to put together materials, such as a brochure, that would provide homeowners with information about the process in Carroll County of choosing, permitting, and installing solar panels. It is meant to be more factual and less of a sales pitch. Ms. Norris added that she found that one of the most expensive items to replace on the solar energy system is the inverters. She said that the sales people do not tell you that. She suggested, when the EAC starts to develop these materials, advising people to check the costs of replacement parts and warranties. She added that she thought this would be one advantage to leasing rather than purchasing.

a. General Public Workshop – Discussion

Ms. Dinne reviewed the topics for the workshop that the EAC identified at the last meeting. She met with Gale Engles, Chief, Resource Management, and Glenn Edwards, NPDES Compliance Specialist, to review the list with them for any suggested additions or revisions. They affirmed the list and identified suggested people for topic experts/speakers where they were still needed. John Hubbs, Master Gardener, was asked to be the expert for the Composting table. He confirmed that he or another Master Gardener would participate. He also requested a general topic table for the Master Gardeners. Maria Myers agreed to be the expert and speaker for the Reduce, Reuse, Recycle! table. Glenn Edwards will cover the Homeowner BMPs table. Mr. Edwards has someone in mind to contact for the Permeable Pavement table and Ms. Engles for the Rain Garden table. Although Mr. Vleck would be knowledgeable about rain gardens, he will be covering the Lawn Care and Landscape Management table that day. Ms. Leatherwood confirmed that George Schooley will be the expert and speaker for Septic Maintenance. Mr. Vleck contacted the Carroll County Forestry Board regarding the Tree Planting table. Donna Davis is currently out, but either she or another Forestry Board member will be there. Ms. Engles requested that Jon Bowman on her staff give the presentation for the Tree Planting table, as he has managed many tree plantings for the County and can relate it to the permit. It was suggested that Ms. Davis either accompany him at the table or cover a general topic table for the Forestry Board. Ms. Engles will ask Byron Madigan on her staff to cover the Stream Corridor Assessment & Stream Buffer Initiative table, as these are part of his job responsibilities. [See the attached NPDES MS4 Public Outreach: Public Workshop or Event Preliminary Logistics.](#)

Ms. Dinne shared that the college will not permit outside food this time, and it would be too expensive to contract with the onsite food vendor. Holding the workshop from 10:00 to 12:00 should mitigate the lack of food.

Ms. Cutsail asked if there would be vendors. Ms. Dinne said that the EAC discussed this at the last meeting and decided not to invite vendors this time. They would rather wait to see how this

workshop goes and the level of participation. Vendors could possibly be invited to the next workshop.

Ms. Leatherwood noted that advertising doesn't need to begin until after January 1. Ms. Dinne said she would add to next month's agenda a discussion of the advertising methods that they would like to pursue.

b. Lightweight Aggregate – Draft Fact Sheet Review

Ms. Dinne summarized the additions to the draft fact sheet made as a result of the EAC's discussion at the September 28 meeting. [See the attached draft Fact Sheet: Lightweight Aggregate](#). Ms. Krebs had a few revisions to offer. In addition to some minor typos, the following changes were made:

- On Page 2, the first full paragraph in the second column needed rewording. The end of the sentence was removed, from "rather..." on. The beginning of the sentence was reordered.
- Under Potential Benefits on Page 3, "Beyond the strictly scientific benefits" was deleted to ensure that the reader does not think the EAC evaluated any scientific benefits.
- On Page 4, in the second paragraph under Need Agency Agreement and Coordination, "pilot process" was inserted in "MPA's process" to clarify to which process it referred.
- Under Recommendation, in the first paragraph, the paragraph was broken into two sentences.

Ms. Krebs made a motion to approve the Lightweight Aggregate Fact Sheet as written with these modifications. Ms. Dinne will make the revisions and send it to the EAC members.

APPROVAL OF FACT SHEET – Motion 262-16: Motion was made by Amy Krebs and seconded by Ellen Cutsail to approve the Fact Sheet, as amended through this discussion, and forward it to the Board. Motion carried.

7. OLD BUSINESS –

a. 2017 Meeting Dates

Ms. Dinne reviewed the proposed 2017 Meeting Dates, which were provided to the EAC members. [See the attached proposed 2017 Meeting Dates](#).

PROPOSED 2017 MEETING DATES – Motion 263-16: Motion was made by Frank Vleck and seconded by Ellen Cutsail to approve the proposed 2017 Meeting Dates as proposed. Motion carried.

b. Residential Solar Public Outreach Materials

Per Ms. Leatherwood, this agenda item will be tabled until the next meeting.

c. Possible 2017 Work Plan Items

Ms. Dinne indicated that the items in the current work plan that are not yet complete will carry over to the 2017 Work Plan – the MS4 General Public Workshop and the Residential Solar Public Outreach Materials. Mr. Vleck suggested that the EAC review feedback from the workshops to decide what could be done to improve on them. Ms. Dinne also said that the preliminary work for the 2018 MS4 Business Workshop could be started in 2017, as we will likely hold each workshop

every other year on alternating years. Mr. Vleck and Ms. Leatherwood also suggested reviewing the implementation of the solar amendment to see if the sizes appear to be adequate. Ms. Dinne noted that the EAC agreed to update the Environmental Stewardship booklet every other year, so this update could be included as well. She indicated that other solar work could come the EAC's way, but that there is no direction at this time. Ms. Leatherwood added that the Board also usually has at least one project to add when they meet.

Ms. Dinne will discuss the topics with Mr. Devilbiss. In the meantime, any additional suggestions could be emailed to Ms. Dinne. Ms. Dinne will draft a work plan based on the input thus far and send it to the EAC to review prior to the November meeting.

8. **OTHER** –

Ms. Zebal noted that a Zero Waste class is coming up on November 9 in Frederick. Ms. Cutsail added that there is no cost if you don't take the meal they provide.

Ms. Dinne shared that there has been no activity yet from the Board to fill the two current vacancies on the EAC. She said someone had applied in early spring, and Ms. Norris may be interested as well. Ms. Dinne will touch base with Denise Hoover in the Commissioners' Office in a couple weeks to allow Ms. Norris time to fill out the application if she is going to do so.

Mr. Vleck pointed out that his term is set to expire in January. Ms. Dinne said she would include that when she touches base with Denise Hoover and recommend his reappointment.

9. **ADJOURN REGULAR MEETING** –

MEETING ADJOURNMENT – Motion 264-16: Motion was made by Ellen Cutsail and seconded by Amy Krebs to adjourn the October 19, 2016, meeting. Motion carried.

The meeting adjourned at 4:25 p.m. The next regular monthly meeting is scheduled for Tuesday, November 15, 2016, at 3:00 p.m. in Room 105 of the County Office Building.



NPDES MS4 PUBLIC OUTREACH: PUBLIC WORKSHOP OR EVENT

Preliminary Logistics



Date/Time/Place:

Date: Saturday, March 18, 2017
 Time: 10:00 AM to 12:00 PM
 Place: Great Hall @ Carroll Community College

Format:

Tables (like booths) will be set up around the Great Hall with exhibits and information about various topics. Each table will address a specific topic, with take-away information available at each and an expert to answer specific, individual questions. An adjacent classroom will be set up to conduct rolling 15-minutes presentations. Each table expert will take a turn at giving a presentation (PowerPoint or something visual), which will allow them to ask questions, the answers to which will benefit the whole group attending the presentation.

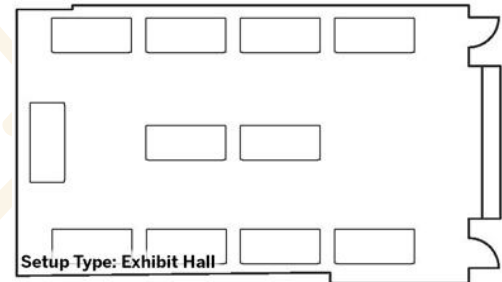


Table Topics:

Note: brown bold text indicates expert confirmed

Topic	Tentative Expert
1. Composting (incl food waste)	John Hubbs, Master Gardeners
2. Homeowner BMPs	Glenn Edwards, DLRM
3. Lawn care and landscape management	Frank Vleck, Wakefield Valley Nursery
4. Permeable Pavement	TBD (*Glenn checking)
5. Rain gardens	TBD (*Gale checking)
6. Reduce, Reuse, Recycle!	Maria Myers, DPW Recycling Manager
7. Septic Maintenance	George Schooley, Legacy Contracting
8. Stream Corridor Assessment & Stream Buffer Initiative	Byron Madigan, DLRM + landowner who participated? TBD
9. Tree Planting	Donna Davis, CC Forestry Board (*Frank checking) & Jon Bowman, DLRM

Other Informational Tables:

- 💧 Welcome Table (Tom Devilbiss and Karen Leatherwood)
- 💧 EAC (EAC member)
- 💧 General Water/Stormwater/NPDES MS4 Permit (DLRM)
- 💧 DLRM Stormwater Management Facility Retrofit Projects (Gale Engles, DLRM)
- 💧 Carroll Bay-Wise Master Gardeners



FACT SHEET: LIGHTWEIGHT AGGREGATE

Background

In 2010, the US Environmental Protection Agency (EPA) established a total maximum daily load (TMDL) for the Chesapeake Bay. The TMDL identifies the level of pollutants (nitrogen, phosphorus, and sediment) that the Bay can assimilate and still maintain water quality standards. Significant reductions in these pollutants are required to be made by 2025 to restore the health of the Bay.

The Conowingo Dam on the Susquehanna River has been trapping sediments since its completion in 1928. The sediments behind the dam have been identified as a major concern. The reservoir behind the dam is expected to reach its capacity for trapped sediments within the decade. With the sediments so high and deep behind the dam, large storms – such as Hurricane Agnes and Tropical Storm Lee – have scoured the sediment, sending it past the dam and into the Chesapeake Bay. The amount of pollutants sent into the Bay by one storm has the potential to negate millions of dollars worth of pollution reduction activities throughout the Chesapeake Bay watershed.

Use in This Context

State and federal agencies have been studying options for addressing this issue for several years. The option has been raised of dredging the materials behind the dam and reusing the materials to create lightweight aggregate (LWA) for construction materials.

Dredging behind the dam would not be a one-time project. After the initial dredging of the material, the material would have to be removed continuously for maintenance. A facility to process the dredge materials into LWA does not exist nearby. It would need to be constructed and the dredge materials transported for processing.

Lightweight Aggregate Description

EPA defines LWA as “a type of coarse aggregate that is used in the production of lightweight concrete products such as concrete block, structural concrete, and pavement. Most LWA is produced from materials such as clay, shale, or slate. Blast furnace slag, natural pumice, vermiculite, and perlite can be used as substitutes, however. To produce LWA, the raw material (excluding pumice) is expanded to about twice the original volume of the raw material. The expanded material has properties similar to natural aggregate but is less dense and



LIGHTWEIGHT AGGREGATE FACT SHEET

DRAFT

therefore yields a lighter concrete product.”
[USEPA. 1993. *Emissions Factor Documentation for AP-42, §11.20*]

In this context, LWA is created using a thermal processing technology. Dredged materials, whether from the Baltimore Harbor/Port or behind the Conowingo Dam, are screened and dewatered, and then the extruded pellets are sent through a thermal processing rotary kiln at temperatures over 2,000 degrees Fahrenheit. The heat causes the pellets to “pop,” creating pockets of air. The resulting pellets, or aggregate, is a very lightweight product, yet retains strength. According to Harbor Rock, this product has been proven to meet industry standards for a marketable product at the demonstration scale.

Relevance to Carroll County

The majority of Carroll County drains to the Potomac, Gunpowder, and Patapsco watersheds. However, a small portion of the Conowago watershed (~3,364 acres), which drains to the Susquehanna watershed, is located in northern Carroll County.

The larger relevance to Carroll County is interest in the potential for many jurisdictions

to focus efforts and resources on a measure that could have significant impact compared to individual efforts.

The intent would be, if local governments would get credit toward Bay restoration efforts, to direct local funds toward addressing the material behind the Conowingo Dam rather than placing so much emphasis on Bay restoration efforts locally that do not have nearly as much impact.

EAC Process

At the January 20, 2016, joint meeting of the Carroll County Environmental Advisory Council (EAC) and the Board, Commissioners Weaver and Rothschild requested the EAC research LWA as a beneficial re-use of dredge materials from sediment deposition behind the Conowingo Dam.

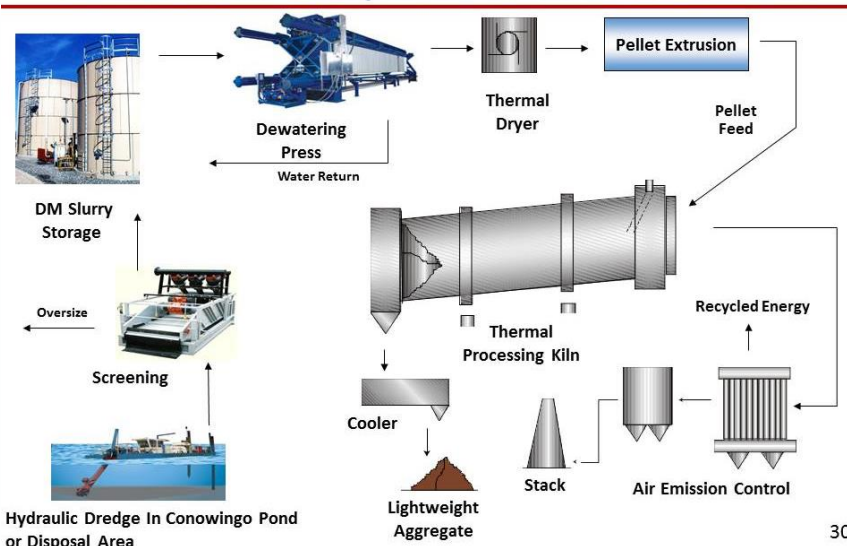
While the EAC is not equipped to advise the Board on the scientific merits of the prospect, the EAC researched the topic from a policy perspective.

At the invitation of the EAC, Jeff Otto, President of Harbor Rock, presented information on July 20, 2016, regarding the

LWA process as it relates to dredging of the sediment behind the Conowingo Dam. Harbor Rock is a company that developed a process for manufacturing LWA from dredged materials.

The EAC also invited the Maryland Port Administration (MPA) to share information regarding MPA’s experience with LWA. To address the need for disposal of annual

HarborRock - Simplified Process Flowsheet



Source: Otto, Jeff. Harbor Rock. July 20, 2016.

dredge materials from the Baltimore Harbor and access to the port, MPA researched a the manufacture of LWA from dredge materials as an alternative.

Potential Benefits

The benefits of a project like this have not year been proven at this scale. All existing projects were at a smaller scale. Therefore, there is not enough information to determine if the potential benefits would outweigh the potential costs. Beyond the strictly scientific benefits, the overall benefits compared to costs are speculative at this point.

Challenges

The EAC is not equipped to or comfortable with advising the Board of County Commissioners on the *scientific* merits and challenges of the manufacture of LWA as a means to address the sediment behind the Conowingo Dam. However, several challenges at the policy level were apparent through the EAC's research.

No Track Record

"While it appears that it is technically possible to convert dredged material into LWA on a small-scale basis, the absence of a comparable full-scale project makes it difficult to assess whether conversion is feasible on the order of magnitude required by the State of Maryland... A May 2014 literature review by the Maryland Environmental Service (MES) confirmed that this is still the case and that no other thermal treatment technologies involving the creation of LWA using dredged material and rotary kilns have been scaled up to production levels." [Maryland Department of Transportation and MPA, *Capacity Recovery at Cox Creek*, Page. 6, September 2014]. With no other projects to manufacture LWA at this scale or specific situation, no evidence exists that the

process of making LWA from dredge materials is sustainable.

The lack of experience to draw upon presents a greater level of risk to the state and local governments that would be responsible for paying for it. Given the level of investment throughout the watershed for nutrient and sediment reductions to achieve the Bay TMDL, government agencies may be hard pressed to invest so much in a result that is surrounded by uncertainty.

Uncertain & Potentially Significant Costs

The MPA indicated that the cost in 2014 proved to be significantly more expensive than traditional methods of dredge removal and disposal, although traditional cost estimates do not take into account the long-term costs of placement options. Since most alternative methods have looked at long-term costs, the cost comparison is, therefore, difficult. MPA has not yet been able to put a cost on avoidance of a new "landfill."

The LWA manufacturer may absorb some of the costs, such as the upfront capital costs for construction of the manufacturing facility. However, Harbor Rock has indicated that the State would still pay fees for the service. Addressing the material behind the Conowingo Dam will not generate any revenue for the State.

Uncertain Market

The lack of similar experience or comparable product as a basis for decision making also provides no guarantee or level of certainty that market demand will exist or be sustainable for the long term. The inability to guarantee quantity further impacts the potential demand market.

According to MPA, one of the big obstacles to marketability is the perception that the



(Photo By Leca67
- Own work,
Public Domain,
<https://commons.wikimedia.org/w/index.php?curid=7468519>)

material is contaminated. Therefore, market demand is speculative. The public has challenged the MPA's permit many times in the past 30 years, with significant opposition to other uses of the dredge material.

Running Out of Time

Implementation of measures to reduce nutrients and sediment loads to the Bay to achieve the Bay TMDLs are required to be in place by 2025. The process of permitting and constructing the needed facilities would likely not be completed by then to employ this option as a TMDL implementation tool.

Need Agency Agreement and Coordination

The U.S. Army Corps of Engineers (USACE) develops the base standards. The EPA and USACE issued beneficial use guidance, but leave the regulation of it up to the State. State law could require placement elsewhere.

Maryland Department of the Environment (MDE) was comfortable with the LWA product in MPA's process. However, there is no standard for comparison. It was unclear which MDE agency would actually regulate and approve the use, and no decision was made on this issue.

A report completed by the Lower Susquehanna River Watershed Association in March 2016 indicates that the greatest threat to the Bay is not the sediment trapped behind the dam, but the nutrients coming down the Susquehanna from areas above the dam in the watershed. As members of this group that issued the report, the agencies involved may be more hesitant to invest in the LWA option.

Although the Port generates \$2.2 billion per year in revenue for the State, MPA is still

having difficulty getting the other agencies to move forward with a solution.

Potential Contamination

The material behind the Conowingo Dam is very old, has not been touched before, and contains pollutants from agriculture and mining. This increases the hurdle of public perception, as well as the barrier of moving forward to getting a decision by State and federal agencies.

No Silver Bullet

After the Joint Chairmen's Report was issued, MPA decided to move forward with a series of smaller solutions and will have to include public education and outreach.

Given the barriers that need to be overcome, the State will not likely be willing to put all of their eggs in one basket.

Recommendation

In July 2016, Governor Hogan announced that a multi-agency work group would be formed to determine, as part of the larger picture to find solutions to reducing pollutants to the Bay, if dredging and re-using the materials from behind the dam could be done effectively and economically and in the most technically feasible manner possible.

This issue has the Governor's attention, and the Board and other advocates have been successful in raising awareness of the need to address pollutants coming from the watershed above the dam and the sediment behind the dam. The Board of County Commissioners should use this momentum to continue to monitor, and participate in the discussion of, where possible, the issue and advocate for solutions that will address the materials behind the Conowingo Dam.



Carroll County Environmental Advisory Council

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Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land &
Resource Management

ENVIRONMENTAL ADVISORY COUNCIL (EAC)

Proposed 2017 Meeting Dates

The 2017 regular monthly meetings will be held in the third week each month in the Reagan Room (003/004), unless otherwise noted. Daytime meetings will begin at 3:00 PM on the dates indicated below. Evening meetings will begin at 6:30 PM on the dates indicated below. Please note: Additional meetings will be scheduled as needed to accomplish work plan projects.

Month	Date
January	Wednesday, January 18, 2017
February	Wednesday, February 15, 2017 (evening)
March	Wednesday, March 15, 2017
April	Wednesday, April 19, 2017
May	Wednesday, May 17, 2017
June	Wednesday, June 7, 2017* (evening)
July	Wednesday, July 19, 2017 (evening)
August	Wednesday, August 16, 2017
September	Wednesday, September 20, 2017
October	Wednesday, October 18, 2017
November*	Thursday, November 16, 2017*
December*	Thursday, December 14, 2017*

**Note: This meeting represents a change from the normal 3rd Wednesday of the month.*

Approved by EAC, _____, 2016



Carroll County Environmental Advisory Council

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Karen Leatherwood, Chair
David Hynes, Vice Chair

Brenda Dinne, Staff Liaison
Department of Land
& Resource Management

Meeting Summary for November 15, 2016

Members

Karen Leatherwood, Chair
David Hynes, Vice Chair – absent
Curtis Barrett – absent
Ellen Cutsail
Amy Krebs – absent
Frank Vleck
Sandy Zebal

County Government

Brenda Dinne, Special Projects Coordinator / EAC Staff
Liaison

Other Attendees

None

1. CALL TO ORDER –

Ms. Leatherwood, Chair, officially called the November 15, 2016, meeting of the Environmental Advisory Council (EAC) to order at 2:59 p.m. in Room 105 of the County Office Building.

2. PUBLIC COMMENTS AND CONCERNS –

No public comments were offered.

3. APPROVAL OF MEETING MINUTES –

Approval of the October 19 minutes was discussed, and no changes were offered.

APPROVAL OF MINUTES – Motion 265-16: Motion was made by Sandy Zebal and seconded by Frank Vleck to approve the October 19, 2016, meeting minutes. Motion carried.

4. CHAIR AND COMMITTEE REPORTS –

a. Solid Waste Subcommittee:

Ms. Leatherwood reported that the Solid Waste Advisory Council (SWAC) is frustrated that the same potential actions have been discussed many times over the years, but no action has yet occurred, despite the same options being recommended multiple times. Ms. Cutsail added that other sources of revenue for the enterprise fund are needed to replace funds being moved into it

from the General Fund. Ms. Leatherwood indicated that the SWAC will not be meeting again until January.

5. **STAFF LIASION REPORT** –

Ms. Dinne indicated that the December meeting agenda would include discussion of the residential solar public outreach materials, continued discussion of the MS4 General Public Workshop, and approval of the proposed 2017 work plan and 2016 Annual Report, if these two items are not approved today and the December 22 meeting is not canceled.

Ms. Dinne provided copies of the final Lightweight Aggregate Fact Sheet to the EAC members. The final fact sheet is available on the EAC's webpage.

The approved 2017 Meeting Dates are also available on the EAC webpage.

Ms. Dinne shared that another NPDES Compliance Specialist, Joanna Reznik, has been hired. She will be taking over much of the public outreach work that Glenn Edwards was doing. Therefore, she will be working with Ms. Dinne and the EAC members on the public workshop. Ms. Dinne will introduce her at the next EAC meeting.

Ms. Leatherwood questioned if Mr. Hynes will still be a member of the EAC, as it is her understanding that he moved to the Eastern Shore to take a job there. Ms. Dinne said she had not received any information to indicate that he would be vacating his seat. Ms. Leatherwood offered to contact him regarding his intentions and to confirm his move.

6. **OLD BUSINESS** –

a. General Public Workshop – Discussion of Advertising

Mr. Vleck started by committing to have the information regarding rain gardens for the brochure to Ms. Dinne by the December meeting.

Mr. Vleck also questioned if a snow date had been set. Ms. Dinne said that it had not, but she will look into availability of the facility for a snow date. The difficulty would be the high demand for the facility.

The EAC members reviewed the list of activities to get the word out about the workshop. Discussion resulted in the following changes or additions or actions:

- Municipal newsletters are on the list. Ms. Dinne will contact each municipality to confirm when the next newsletter will go out and by when information for that newsletter is needed.
- Add "Keeping It Real in Carroll County" with Commissioner Wantz. Ms. Dinne will look into arranging an interview w/ an EAC member and Commissioner Wantz for the YouTube video.
- Ms. Leatherwood will contact WTRR to see if an interview could be arranged.
- Mr. Vleck offered to hand deliver flyers to Bear Branch Nature Center and Piney Run Nature Center, in addition to those that are mailed, to increase the chances that they will be displayed.
- Ms. Cutsail offered to work with the 4H Tribune to have the information included in that newsletter.
- Flyers will be provided to the individual EAC members at the next EAC meeting to distribute as opportunities arise.

- Ms. Dinne will inquire to whom the County's news releases are sent so the EAC may identify if all reasonable media opportunities are covered. She will pass this information on to the EAC.

Ms. Dinne said that she will be spending a good bit of time in December getting materials ready for the public launch of the information in January. This includes a flyer, news release, newsletter articles, banners for cable channels and Carroll County website, a banner for the County webpage, updating webpages, etc.

See the attached draft NPDES MS4 Public Outreach: Public Workshop – Advertising handout.

b. Proposed 2017 Work Plan – Draft Review & Possible Approval

Ms. Dinne briefly reviewed the draft work plan that each member received. Ms. Cutsail pointed out that the Target Completion Date for the update of the Environmental Stewardship booklet needs to change from “2016” to “2017.” No other changes were offered. See the attached proposed 2017 Work Plan.

APPROVAL OF PROPOSED 2017 WORK PLAN – Motion 266-16: Motion was made by Frank Vleck and seconded by Sandy Zebal to approve the proposed 2017 Work Plan, as amended through this discussion, for discussion with the Board in January. Motion carried.

c. Residential Solar Size Requirements – Status

Ms. Dinne shared that the Board of County Commissioners held a public hearing on October 13 regarding the proposed amendment to the residential solar size requirements in the zoning code. At the Board's direction, staff drafted additional language to add a variance process for properties in the Conservation District that are over three acres, which the EAC reviewed and endorsed at its October 19 meeting. The Board subsequently adopted the proposed amendment, as amended, on October 27, 2016. The signed ordinance is available on the EAC's webpage.

7. OLD BUSINESS –

a. 2016 Annual Report

Ms. Dinne provided revised copies of the draft Annual Report, updated to correct proofreading errors. She also noted that the yellow highlighted dates will be updated to reflect the date the EAC actually approved the Annual Report.

Ms. Cutsail suggested adding to the Annual Report the EAC's volunteer public outreach with the Water Resources booth and Mr. Edwards. Ms. Dinne will add a Public Education section that summarizes the volunteer activities and workshops. Ms. Leatherwood requested that the current members that are still serving be noted under Member Activity as well. No additional changes were made. See the attached draft 2016 Annual Report.

APPROVAL OF 2016 ANNUAL REPORT – Motion 267-16: Motion was made by Ellen Cutsail and seconded by Sandy Zebal to approve the 2016 Annual Report, as amended through this discussion, and to be emailed to the EAC for final concurrence. Motion carried.

b. Residential Solar Public Outreach Materials

The EAC's 2016 Work Plan includes development of public outreach materials to assist residents in making informed decisions about accessory solar uses. The EAC members chose a booklet format for the materials.

The members discussed the types of content that should be included in the booklet. Ms. Dinne started by asking what the EAC members want to accomplish with this document. Ms. Leatherwood suggested that it should guide residents where to start the process, the most valuable questions an interested residential property owner should be asking, and potential finance options. Ms. Cutsail suggested it should include a summary of Carroll County's residential solar requirements. She also recommended a list of solar installers be included. Ms. Leatherwood proposed that it also include information to estimate how much energy solar panels might generate. Ms. Cutsail responded that technology is changing too rapidly; the information would have to be updated frequently. Ms. Cutsail and Mr. Vleck added that content should be included to address buying versus leasing and what happens if the property owner subsequently sells the house. Ms. Vleck further suggested inclusion of basic information, such as which direction to face the panels for optimal efficiency.

Ms. Dinne indicated that the materials should avoid recommending specific companies, individuals, or websites. Rather, she offered that information be included to help the reader find that information, such as energy calculators, solar companies, and certified installers, on the internet. The EAC members agreed with Ms. Dinne's recommendation that key words be provided to assist the reader in the internet search. This would avoid recommending specific sites or companies. In addition, she suggested a Frequently Asked Questions (FAQ) section that could provide the basic information Mr. Vleck suggested.

The EAC members agreed to each research good sources of available information. Each will send the information to Ms. Dinne before the next meeting. She will ensure all EAC members receive the compiled information. Mr. Vleck indicated that major universities may be a good source of non-biased information. He suggested a section be included to provide links to other resources. Ms. Dinne will email a link to the EAC members to UnderstandingSolar.com. She could not quickly determine if this was a non-profit advocacy organization or a for-profit group. However, it seemed to provide a good starting point for Maryland information.

8. OTHER –

Ms. Zebal reminded the members that she will be researching a potential sign for the tree grove at Carroll Community College where the trees are planted to honor Environmental Awareness Awards winners. She will start by contacting the Carroll County [Public Schools] Career and Technology Center (CCCTC) to inquire about making the sign. Ms. Leatherwood suggested that the 4H may be willing to do it if the CCCTC cannot. Ms. Cutsail added that the scouts may also be willing. Ms. Leatherwood offered that benches may also be a nice addition if the scouts are willing to do it as a project. Ms. Dinne said that there is one bench already there at the entrance to the trail in the woods, but perhaps there are good locations for additional benches. She will contact the Carroll County Bureau of Facilities Bureau Chief to determine what permission is needed to place the sign there.

Since the EAC approved the proposed 2017 Work Plan and the 2016 Annual Report at this meeting, Ms. Leatherwood suggested canceling the December 22 meeting. This would give the members additional time to research solar information before the next meeting, which is scheduled for January 18, 2017. Ms. Dinne confirmed that the January meeting would be held prior to the joint meeting with the Board. She indicated that she has requested the joint meeting with the Board be scheduled for either Thursday, January 19, 2017, or Thursday, January 26, 2017. The EAC members all agreed.

9. **ADJOURN REGULAR MEETING** –

The meeting adjourned at 4:17 p.m. The next regular monthly meeting is scheduled for Wednesday, January 18, 2017, at 3:00 p.m. in the Reagan Room of the County Office Building.

MEETING ADJOURNMENT – Motion 268-16: Motion was made by Ellen Cutsail and seconded by Frank Vleck to adjourn the November 15, 2016, meeting. Motion carried.