UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY
COMMISSION

Exelon Generation Company, LLC — Docket No. P-405-106

Docket No. P-405-121

COMMENTS OF THE LOCAL GOVERNMENT MEMBERS OF THE CLEAN CHESAPEAKE COALITION REGARDING THE JOINT OFFER OF SETTLEMENT OF EXELON GENERATION COMPANY, LLC AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT RE: CONOWINGO DAM WATER QUALITY CERTIFICATION

Respectfully submitted,

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The County Commissioners of Caroline County, Cecil County, Maryland, the County Council of Dorchester County, the County Commissioners of Kent County, and Queen Anne's County, Maryland (collectively, the Clean Chesapeake Coalition (the "Coalition" or "CCC")), by their undersigned counsel, pursuant to the November 13, 2019 notice of the Federal Energy Regulatory Commission ("FERC" or the "Commission") extending the comment period through January 17, 2020 with respect to the Joint Offer of Settlement and Explanatory Statement (Settlement Agreement) between Exelon Generation Company, LLC (Exelon) and the Maryland Department of the Environment (MDE) for the Conowingo Hydroelectric Project Nos. 405-106 and 405-121. (Dam or Reservoir), hereby provide their comments as follows:

I. The Settlement Agreement Guts MDE's WQC for Conowingo Dam

MDE's issuance of its Water Quality Certification ("WQC") for Conowingo Dam relicensing on April 27, 2018, with special conditions essential for safeguarding Maryland's waters, downstream restoration efforts, and for the betterment of the Chesapeake Bay, was marked as a watershed moment in the history of Chesapeake Bay restoration. For nearly 8 years the

Coalition counties have been shining a spotlight on the "Conowingo Factor"[1] and insisting that the multi-state Bay cleanup agenda was flawed by assuming continued trapping capacity in Conowingo reservoir through 2025 and failing to fully account for the increased pollution loading to the Maryland portion of the Bay due to that gross miscalculation by U.S. EPA and the architects of the 2010 Bay TMDL. That elephant in the room was finally acknowledged when Maryland issued the WQC for Conowingo relicensing and laid out a plan to begin addressing the enormous threats posed by the operation of Conowingo Dam on the ecology of the Bay and on downstream efforts and expenditures to improve water quality. Well-supported by science, the WQC imposed reasonable licensing conditions requiring the owner of Conowingo Dam to properly manage the vast quantities of nutrients, sediment and other contaminants that are accumulated in the reservoir above the Dam and scoured into the Bay during major storm events and now with more regularity in equally harmful proportions because of the loss of trapping capacity in the reservoir. Having reviewed the proposed Settlement Agreement against the WQC, the Coalition counties are deeply concerned that this most important lever in the federal relicensing process under the Clean Water Act and this once-in-a-generation opportunity to measurably and cost-effectively improve the chances for Bay restoration and lasting water quality improvement will be squandered if FERC approves the proposed Settlement Agreement.

The Susquehanna River is the single largest source of pollution loading to the Chesapeake Bay. Because everything that flows down the Susquehanna flows through the Conowingo Dam, and the Dam no longer has trapping capacity, the Dam is a significant point source of sediment and nutrient pollution that negatively impacts the Chesapeake Bay. One of the Chesapeake Bay's most vexing threats, the Dam converted the lower Susquehanna River into the Bay watershed's largest stormwater management pond. That reservoir has been trapping upstream nutrients,

[1] The Emmy Award winning documentary video, "The Conowingo Factor," summarizes the Dam's history and the water quality issues posed by both the Dam and sediment and debris coming down the Susquehanna River. https://www.youtube.com/watch?v=LvK86Ripmc4&feature=youtu.be

sediments and other contaminants for more than 90 years; has never been dredged or otherwise maintained and, until MDE's issuance of the WQC, no person, organization, company or government had been legally responsible to dredge or otherwise maintain the reservoir or mitigate against its adverse environmental impacts. The undeniable adverse impacts that the Conowingo Dam and reservoir system have had on downstream water quality are well-documented in the record of this proceeding.

The Settlement Agreement has scrapped nearly all of the benefits offered by the WQC. For example

- Although requiring a study to be conducted for the first three years on nitrogen and phosphorus levels, the Settlement Agreement has no reduction requirements for nitrogen or phosphorus regardless of the results. Reduction could be achieved by dredging; however, the Settlement Agreement has no requirements for dredging the reservoir or other sediment management options.
- The Settlement Agreement has no requirements for continued monitoring by Exelon of downstream nutrient levels.
- The Settlement Agreement handcuffs MDE, imposes no required remediation by Exelon, and has no provision to reopen the license if dangerous nutrient levels or other contaminants are detected.
- The Settlement Agreement imposes no specific actions with respect to Chlorophyll A requirements of Clean Water Act.
- The Settlement Agreement has no requirements for Exelon to take any specific downstream habitat improvement action.
- The Settlement Agreement has no requirement for a lower river fish plan.
- The Settlement Agreement has no requirement for a spillway plan.
- The Settlement Agreement is silent on criminal or civil liability of Exelon should Exelon fail to fulfill its obligations in operating the Dam.

The Settlement Agreement signifies that instead of embracing a historic opportunity on the Chesapeake Bay clean up continuum and taking up the mantle of Bay stewardship in an equally bold way, Exelon and MDE have embraced the status quo and a new normal for the upper Bay that will guarantee adverse water quality consequences that will persist for decades and threaten significant harmful environmental consequences downstream for millions of Americans, including the hundreds of thousands of residents living in the Coalition's counties.

II. Settlement Agreement Entered Into With No Input From Local Governments

Exelon and MDE bilaterally negotiated the Settlement Agreement in secrecy without any coordination with or input from local governments. Further, there is no requirement for future coordination with downstream local governments regarding the impact of the Dam and Bay clean-up efforts. The exclusion of downstream local governments from Settlement Agreement discussions is an affront to those Coalition counties and officials who over the past 8 years have steadfastly been raising awareness and sounding the alarm about the Conowingo factor in the context of the Bay TMDL and in reality. All organizational and agency intervening parties have a justifiable complaint about being in the dark about settlement negotiations; but the exclusion local governments is a form of environmental injustice and contrary to federal law. The Coalition counties, along with other stakeholders, have economic, social and property interests associated with the relicensing to operate the Conowingo Dam and Bay cleanup efforts. Each Coalition county has a direct monetary interest in the Settlement Agreement and how it is implemented. Because of the sediments and other pollutants that the Dam has trapped which are scoured from the floor of the reservoir behind the Dam and deposited in shocking proportions during significant storm events, the operation of the Dam and WQC conditions directly impact whether actions undertaken and expenditures made by local governments to improve the water quality of the Bay and Bay tributaries will have any meaningful impact on improvement of the Bay. If the volume of sediments introduced into the Bay from scour and from activity in the watersheds above the Dam is not dramatically reduced by dredging, no amount of expenditures and efforts by Maryland's local governments will reverse the devastation caused by the operation and maintenance (or lack thereof) of the Dam and activities above the Dam.

The Coalition counties situated on the Chesapeake Bay are directly impacted by the sediments scoured from the floor of the Conowingo Reservoir. The oyster, rockfish, crab and other marine populations off the shores of Cecil, Kent, Queen Anne's and Dorchester Counties

have been greatly diminished, if not totally wiped out, due to scour from the Conowingo Reservoir. This has resulted in the decimation of seafood harvesting and seafood processing/packaging industries that once thrived in those counties prior to Hurricane Agnes in 1972. Additionally, the marina industry and related trades in Cecil, Kent, Queen Anne's and Dorchester Counties have been detrimentally impacted by sediment scour that fills the navigable channels of the Bay, the marinas in those counties, and the Bay tributaries in those counties used to access the Bay. Sediment scour has detrimentally and directly impacted the way of life in those counties and adversely affected the human and economic environment in those counties in addition to the adverse impact on the natural environment, which is exactly why MDE and Exelon should have coordinated with the local governments in reaching the Settlement Agreement.

Maryland's counties have the right to sue and be sued, to tax and spend, and to engage in land use planning including environmental planning. See, e.g., Md. Code Ann., Local Government §§ 1-101 et seq., 12-101 et seq., 13-101 et seq., 16-101 et seq.; Md. Code Ann., Land Use §§ 1-101 et seq., 3-101 et seq., 4-101 et seq.; Md. Code Ann Envir. §§ 5-703, 5-903(b), 9-301 *et seq*., 9-501 *et seq*., 9-601 *et seq*. Such environmental plans are a component of the County Master Plan. Md. Code Ann. Land Use §§ 4-101 *et seq*. & Md. Code Ann. Envir. §§ 9-501 *et seq*. The objective of such plans is to interrelate and correlate to improve the human environment and the natural environment in which county residents live and work. *Id*.

Per the EPA mandate in furtherance of the Chesapeake Bay TMDL goals, all Maryland counties, including the Coalition counties, have prepared local Phase III Watershed Implementation Plans ("WIPs"). Absent meaningful and enforceable conditions on the operation and maintenance of the Dam to minimize and/or mitigate the adverse downstream environmental impacts attributable to the loss of trapping capacity in the Conowingo Reservoir, implementation of the Coalition county WIPs, especially those counties with upper Bay

shoreline and marine based industry, will be a wasteful fool's errand. It is senseless for the Coalition Bayside counties to fund and implement certain elements of theira WIP when scour from the Conowingo Reservoir will continue to negate any positive achievements in water quality improvement (i.e., oyster and SAV restoration) during significant storm events and now with more regularity.

A. The Federal Powers Act.

The Federal Powers Act requires FERC to consider impacts to local government interests during the license renewal process. 16 U.S.C. §§ 802(b)(2), 803(a)(2)(B), 808 (a)(2)(D). More specifically, FERC "shall…consider (and explain such consideration in writing) each of the following…the effect on communities served or to be served by the project…and the related community" 16 U.S.C. § 80(a)(2)(D) and FERC "shall consider … [t]he recommendations of … agencies exercising administration over … recreation, cultural and other relevant resources of the State in which the project is located …." 16 U.S.C. § 803(a)(2)(B). The Coalition counties exercise administration over recreational, cultural and other relevant resources that are and will be directly and indirectly impacted by activities at the Dam and in the Conowingo Reservoir, and as such the Coalition counties were entitled to be consulted during settlement negotiations and on the substance of the Settlement Agreement.

B. National Environmental Policy Act of 1969

In addition, FERC is committed to adhering to the objectives and aims of the National Environmental Policy Act of 1969 ("NEPA"). 18 C.F.R. § 2.80(a). As FERC recognizes, NEPA requires FERC to include a detailed environmental statement including the impact to the human environment. *Id*. NEPA, 42 U.S.C. § 4321 et seq., provides a legal basis for intervention by Coalition members. More specifically, NEPA provides:

> The Congress … declares that it is the continuing policy of the Federal Government, **in cooperation with … local governments**, … to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and

> maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

(Emphasis added.) 42 U.S.C. § 4331(a). § 4331(c) provides further: "The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment." NEPA created the Council on Environmental Quality ("Council") pursuant to 42 U.S.C. §§ 4341-4347. Section 4345 provides in pertinent part:

> The Council shall –
>
> (1) **consult with** … representatives of science, industry, agriculture, labor, conservation organizations, State and **local governments** and other groups, as it deems advisable; and
>
> (2) **utilize, to the fullest extent possible**, **the services, facilities, and information** (including statistical information) **of public** and private **agencies** and organizations, and individuals, in order that duplication of effort and expense may be avoided, thus assuring that the Council's activities will not unnecessarily overlap or conflict with similar activities authorized by law and performed by established agencies.

(Emphasis added.)

The current state of the Chesapeake Bay, which EPA has declared an impaired body of water, requires cooperation of federal, state and local governmental entities and agencies to coordinate how sources of impairment and pollution are addressed and rectified. *See generally* Executive Order 13508, *Chesapeake Bay Protection and Restoration*, May 12, 2009. Clearly, scour from the Conowingo Reservoir and the effect of the Dam in altering the water quality of the Susquehanna River above and below the Dam make the Commission's decisions with respect to the Settlement Agreement integral to the efforts of the Coalition members, in conjunction with EPA, Bay watershed states and local governments, and Maryland State regulatory agencies in pursuing cost-effective solutions and funding to improve the Bay.

Regulations established in response to NEPA provide for specific instruction to engage local governments in federal environmental proceedings, thereby supporting the Coalition's

intervening status. Specifically, 40 C.F.R. § 1503.1 provides that a federal agency should request the comments of local agencies prior to the preparation of a final environmental impact statement. This further requires the Commission's consideration of county input and coordination with county efforts as part of the NEPA process.

Unfortunately, MDE and Exelon have essentially ignored the local government counties of the Coalition in reaching the Settlement Agreement. Such failure to coordinate with the local government entities, involve the Coalition members, and otherwise address the necessity for a sediment management plan (dredging) as repeatedly advocated by the Coalition, is inconsistent with NEPA processes and violates the Federal Powers Act and the controlling rules and regulations.

III. License Renewal Term Should Not Exceed 40 Years

A. Per FERC Policy, Default License Term Length is 40 years; License Term Should Coincide with Expiration of Licenses to Operate the Holtwood and Safe Harbor Dams or Muddy Run Facility

Pursuant to FERC policy, the default license term length is 40 years. Neither Exelon nor MDE have demonstrated a reason to extend the license beyond the 40-year standard, especially in light of incomplete studies, scant information and data, and contemplated after-the-fact studies under the Settlement Agreement. On October 19, 2017, the Commission issued a "Policy Statement on Establishing License Terms for Hydroelectric Projects" (Policy Statement).[2] The Policy Statement establishes a 40-year default license term for new licenses, but allows for a shorter or longer term under certain conditions. Contrary to Exelon's and MDE's contentions, the Settlement Agreement does not meet the criteria for a longer term and, under the circumstances, the license term should expire in 2030 to coincide with the expiration of the licenses to operate the Holtwood and Safe Harbor Dams, both located in the Susquehanna

[2] Policy Statement on Establishing License Terms for Hydroelectric Projects, 161 FERC ¶ 61,078 (2017); hereinafter, the "2017 Policy Statement").

River basin. *Settlement Agreement*, p. 22.

FERC's license term policy statement provides in relevant part as follows:

> There are three circumstances where the Commission will consider issuing a license for less or more than 40 years. First, **the Commission will establish a shorter or longer term if necessary to coordinate license terms for projects located in the same river basin**. Second, the Commission will defer to a shorter or longer term explicitly agreed upon in a generally-supported comprehensive settlement agreement, **provided that such term does not conflict with coordination**. Settlement agreements that state the settlement signatories would not oppose a certain term or would support a term within a range of years will not be considered to include an explicitly agreed upon license term.
>
> Third, the Commission will consider a longer license term – **provided that doing so is consistent with coordinating license terms within a basin** – when a license applicant specifically requests a longer license term based on significant measures expected to be required under the new license or significant measures implemented during the prior license term that were not required by that license or other legal authority and for which the Commission has not already given credit through an extension of the prior license term. The Commission will consider, on a case-by-case basis, measures and actions that enhance non-developmental project purposes (i.e., environmental, project recreation, water supply), and those that enhance power and developmental purposes, together with the cost of those measures and actions to determine whether they are significant and warrant the granting of a longer license term. Maintenance measures and measures taken to support the licensing process will not be considered. As guidance, we note that the Commission has found that measures including the construction of pumped storage facilities, fish passage facilities, fish hatcheries, substantial recreation facilities, dams, and powerhouses warranted longer license terms.

2017 Policy Statement, 161 FERC ¶ 61,078, *supra*, at ¶¶ 15 and 16. (Emphasis added).

The Settlement Agreement does not meet the criteria necessary for a 50-year term. First, a shorter term expiring in 2030 (e.g.: 10 years) to coincide with the expiration of the licenses to operate the Safe Harbor Dam (expires April 22, 2030) and Holtwood Dam (expires August 31, 2030), is "necessary to coordinate license terms for projects located in the same river basin." The rationale for the policy to coordinate license terms for projects located in the same river basin is that aligning the relicensing schedule with other projects can reduce the volume of work that is required for two separate relicensing efforts that are on independent schedules. In addition, it is obvious that coordinating the license expiration dates of projects within a shared waterway can allow for a more comprehensive analysis of the cumulative environmental impacts of the projects

(18 C.F.R. § 2.23; FERC 1994). Further justifying a 10-year license is that the WQC issued by Pennsylvania for the Muddy Run Pumped Storage Facility ("Muddy Run"), also owned by Exelon and located in the Susquehanna River basin, is scheduled to be revised in 2030 as necessary to address demonstrated project impacts "because of changes in the characteristics of the Susquehanna River that will occur by 2030, and because the FERC licenses for the Holtwood Hydroelectric Facility and the Safe Harbor Hydroelectric Facility expire in 2030."[3] Because the Conowingo Dam, Muddy Run, Safe Harbor Dam, and Holtwood Dam are all facilities located in the Susquehanna River basin and contribute to the Conowingo Factor polluting the Bay, all four projects should be evaluated together as part of a coordinated effort in 2030. Should FERC not be inclined to issue a 10-year license to expire in 2030 in conjunction with the Safe Harbor and Holtwood Dams, then on the outside the license for Conowingo Dam should expire by no later than November 30, 2055 (e.g.: 35 years) to coincide with the expiration of Exelon's license to operate Muddy Run. In any event, the license should not exceed the 40 year default term.

Second, the Settlement Agreement is not a "comprehensive" settlement agreement as it fails to address pressing environmental disputes that, should the Commission approve it as is, will be left to be decided in protracted litigation by the Courts. Additionally, as stated hereinbefore, there has been no coordination with local governments in the drafting of the Settlement Agreement or its implementation.

Third, there are no "significant measures expected to be required under the new license or significant measures implemented during the prior license term that were not required by that license or other legal authority and for which the Commission has not already given credit through an extension of the prior license term." While the Settlement Agreement does provide some likely ineffective token gestures, the majority of the criteria justifying a longer-term license pursuant to the 2017 FERC policy are not included in the Settlement Agreement. For example, the Settlement

[3] See June 3, 2014 Water Quality Certification issued to Exelon for Muddy Run Pumped Storage Facility, pp. 4-5.

Agreement does not provide for dredging, construction of pumped storage facilities, substantial recreation facilities, dams, or powerhouses. Although positive elements of the Settlement Agreement, the eel passage and mussel restoration facilities, will play a comparatively minor role and there is no evidence that any benefit those facilities would render justifies a 50-year license.

The 2017 Policy Statement convincingly justifies the 40-year default license term:

> This policy will provide significant certainty to licensees, resource agencies, and other stakeholders. A 40-year default license term will provide a simpler method for Commission staff to establish license terms, and, thus, increase administrative efficiencies…This policy will provide significant certainty to licensees, resource agencies, and other stakeholders. A 40-year default license term will provide a simpler method for Commission staff to establish license terms, and, thus, increase administrative efficiencies.

Id., at ¶ 17. All of the stated provisions for a license expiring in 2030, or at the latest on November 30, 2055, are applicable in this case. Additionally, in its application filed with FERC for renewal of its license, Exelon requested a 46-year term,[4] and Exelon is prohibited from obtaining a longer-term license than that for which Exelon originally applied. Exelon cannot now seek a longer-term mid-stream in the process. Further, if and when FERC grants the license renewal, the effective date of the license should be backdated to September 1, 2014, when Exelon's prior license expired, as Exelon has been operating the Dam for more than five years under an expired license. The Settlement Agreement is unclear on these issues and the circumstances most certainly do not justify a 46-year or 50-year license from the date of the Settlement Agreement approval.

B. Concern About Dam's Stability Over License Term

The Dam's structural integrity and safety are uncertain over the renewal license term. By notice dated January 26, 2018, FERC's Office of Energy Projects, Division of Dam Safety and Inspections, advised dam owners that:

[4] *See* Federal Energy Regulatory Commission Docket Number P-405, filing 20120831-5024, submitted August 30, 2012.

> "On January 5, 2018 the Independent Forensic Team (IFT) released their final report on the Oroville Dam Spillway Incident [that occurred in California in February 2017]. The IFT Report highlights several issues that everyone involved in the dam safety industry should be aware of. …***It is very clear [from the IFT Report] that just because a project has operated successfully for a long period of time does not guarantee that it will continue to do so***."

(Emphasis added) The report is available on the FERC website at:

https://www.ferc.gov/industries/hydropower/safety/projects/oroville.asp

The FERC advisory concerning the IFT Report on the Oroville Dam Spillway Incident is critically relevant to the Settlement Agreement in the following respects:

1. Oroville Dam was constructed circa 1968; while Conowingo Dam is some 40 years older having been constructed circa 1928. The Oroville Dam was 40 years newer than the Conowingo Dam and yet it still failed. A 50-year license term to operate the Conowingo Dam is excessive and risky considering the Conowingo Dam is more than ninety (90) years old and there is a record of newer dams failing.

2. The failure of Oroville Dam underscores the need to dredge as much of the nutrient-laden sediment accumulated in the reservoir as practicable to minimize the downstream environmental damage that would result from a calamitous structural failure like the Oroville Dam spillway incident; and

3. The failure of Oroville Dam exemplifies the justification for reopeners and associated triggers as a necessary condition of any WQC for the extended term of license sought by Exelon in order to adapt to environmental changes and other new technology, *inter alia*.

IV. Settlement Agreement Insufficiently Addresses Environmental Concerns

A. No Dredging or Sediment Management Required

Likely the most important issue to Bay cleanup efforts and ineptitude of the Settlement Agreement is the fact that the Settlement Agreement fails to require Exelon to dredge the sediments and maintain the stormwater management pond (which Exelon refers to as the Conowingo Pond) so that scour from the floor of the reservoir does not routinely damage the Bay estuary and

undermine Bay restoration efforts and expenditures below the Dam. The Conowingo Reservoir, just like any stormwater management pond, has to be dredged and maintained or it will continue to be an environmental hazard. With the loss of trapping capacity, the Conowingo Reservoir is an environmental hazard. The Bay's natural ecosystems are not able to ameliorate the deleterious impact of the massive release of scoured nutrient-laden sediments during significant storm events. In order to save the Bay, or at least give the upper Bay breathing room for restoration, the only reasonable solution is to dredge the 14 miles of buildup behind the Dam and reuse and repurpose dredged material.

The pollution attributable to Conowingo Dam consists of the sediments, nutrients and other contaminants that have been trapped behind the dam for more than 90 years and which are scoured from the floor of the Conowingo Pond and dumped in the upper Bay in shock loadings during moderate and high flow storm events and snow melts. Conowingo Pond has never been dredged and the Settlement Agreement contains no commitment, plan or budget to specifically address the devastating amounts of nutrients, sediment and other contaminants that are scoured into the Bay during storm events and in equally harmful proportions on a regular basis because the Conowingo Pond is full. Those sediments dumped during shock loadings kill oysters and submerged aquatic vegetation ("SAV") in the upper Bay that serve as the best natural filters of pollution in the Bay. When the dam was built, the depth of the water behind the dam was 120 feet during much of the run between the Holtwood Dam and the Conowingo Dam. Now the average depth is 15 feet or less over the vast majority of that stretch of the lower Susquehanna River.

The following inescapable realities have been acknowledged by the federal and State agencies responsible for oversight of the Chesapeake Bay's clean-up efforts and are indeed relevant in FERC's consideration of the Settlement Agreement:

1. The reservoirs (Lake Clarke, Lake Aldred and Conowingo Reservoir) behind the three hydroelectric dams (Safe Harbor, Holtwood and Conowingo) in the lower Susquehanna River are full and no longer serve as net traps of sediments and nutrients.

2. The EPA's 2017 TMDL recalibration determined that tens of thousands of tons of additional sediments, 6 million pounds (3,000 tons) of additional nitrogen and 260,000 pounds (130 tons) of additional phosphorus need to be removed upstream from the Susquehanna River annually if the water quality of the Chesapeake Bay is to be improved and to avoid additional loading from flowing downstream and hurting Coalition counties.

3. Scour of nutrient-laden sediments that have accumulated in the reservoirs behind the dams in the lower Susquehanna River occurs several times a year during major storm events; which events are becoming more frequent and intense.

4. The nutrients that attach to the sediments that are scoured from the reservoirs behind the dams in the lower Susquehanna River are a bigger threat to the health of the Bay than the sediments themselves because those nutrients are released in the more saline, warmer, less oxygenated environment of the Bay estuary.

5. The loss of long-term sediment trapping capacity at Conowingo Dam is causing impacts to the health of the Chesapeake Bay ecosystem which cannot be conquered by restoration efforts without dredging the Dam. According to MDE, the additional nutrient pollution associated with the conditions in the lower Susquehanna River system may result in Maryland not being able to meet Chesapeake Bay water quality standards, even with full implementation of WIPs by 2025.

B. The Plumes Don't Lie – A (Satellite) Picture is Worth a Thousand Words

Be it a storm that befalls the Chesapeake Bay watershed or the spring melt after a snowy winter, the evidence of adverse impacts on flora, fauna and the ecology of the Bay downstream from Conowingo Dam are undeniable. Exhibits A through C attached hereto disturbingly depict

sediment plumes emanating from the Conowingo Dam and highlight the harsh reality of adverse impacts resulting from high-flow events:

Exhibit A: NASA photograph of the Chesapeake Bay, September 13, 2011, a few days after Tropical Storm Lee showing the sediment plume emanating from Conowingo Dam and extending about 100 miles south to the mouth of the Potomac River

Exhibit B: Conowingo Dam Sediment Plume (April 8-11, 2017)

Exhibit C: Conowingo Dam Sediment Plume (November 6, 2019)

Also attached hereto are the following Coalition publications and research, which should be examined in FERC's consideration the Settlement Agreement:

Exhibit D: Coalition memorandum dated April 24, 2015 about the Spring Melt 2015 and Conowingo Dam scour (April 9-16, 2015)

Exhibit E: Conowingo Matters

Exhibit F: Toxins in Conowingo Pond Sediments

Exhibit G: Conowingo Dredging – Storm Events, Sediment Loading and Scour

These Exhibits underscore the far-reaching consequences of high-flow events because the Dam has no remaining trapping capacity. Even a cursory review makes clear that the omission of dredging as a required condition in the Settlement Agreement is a complete failure in the efforts to improve the quality of the Chesapeake Bay.

C. *Settlement Agreement Lacks Sufficient Reopener Provisions*

To date, there is no Conowingo reservoir sediment characterization data available to inform decisions on the magnitude of the Settlement Agreement. Because of this, the original WQC issued by MDE included provisions to reopen and otherwise adapt to changing standards and data. The WQC allowed MDE to require further action on the part of Exelon through adaptive management and reopener provisions. The Settlement Agreement, however, fails to include reopener provisions that are absolutely necessary for a long-term license. The failure of the Settlement Agreement to contain reopener provisions for adaptive management likely takes dredging off the table. While the Settlement Agreement operates under the guise of "adaptive

management" to specify the State of Maryland has the right to petition FERC to seek modifications to Exelon's new license during the multi-year term based upon new information/science, the State has conceded in the Settlement Agreement that the State will not petition FERC to "impose additional nutrient or sediment-related measures or nutrient or sediment funding requirements associated with nutrients or sediment originating from sources [upstream]." Further tipping the scales, Exelon has reserved all of its rights to challenge and object to any effort by Maryland over the next 50 years to modify the new license Exelon now fully expects to receive. Essentially, under the proposed Settlement Agreement, once the Conowingo Dam relicense is issued by FERC with the Settlement Agreement elements incorporated as proposed, the State of Maryland (the downstream watershed state with arguably the most to lose as the Bay declines) will have tied its own hands to prohibit MDE and the State from adaptively managing the Conowingo Factor. Thus, we have a new normal which involves continued high-flow pollution from the Dam over the course of the license term without any dredging.

MDE's WQC included several reopener provisions where MDE could react and adapt to study data and reevaluate requirements under certain circumstances. The Settlement Agreement significantly reduces reopener opportunities. For example, MDE may only seek to modify the license to achieve compliance with, *inter alia*, water quality standards if a law, regulation, or requirement under the Clean Water Act or other law is amended and becomes more stringent (Sec. 2.6). Yet Exelon reserves the right to object to any modification sought by MDE for any reason. Shockingly, Exelon reserves the right to appeal and challenge any decisions, but MDE is forfeiting rights to enforce the provisions of Clean Water Act and other State laws. The Settlement Agreement fails entirely to address the true problem or otherwise provide for a reopening of the WQC or FERC approval to address the real issue– that the Dam needs to be dredged to recreate trapping capacity in order to alleviate downstream pollution. The Coalition counties submit this is an impermissible forfeiture of rights and obligations of MDE. MDE and the State are required

to enforce the environmental laws of the land and the Settlement Agreement represents an impermissible abdication of the State's stewardship duties to defend its citizens from predatory corporate behavior and unfettered Bay pollution.

The lack of reopener provisions in the Settlement Agreement is concerning when compared with the 2014 Pennsylvania WQC for Exelon's Muddy Run Pumped Storage Facility, which is located just a few miles up the Susquehanna River and the Conowingo Reservoir. The Muddy Run WQC and FERC license requires that the "water quality certification will be revised in 2030 [i.e. 15 years after licensing], as appropriate, to address demonstrated project impacts." The reopener provisions in the Muddy Run WQC are obviously intended to react to changing circumstances, involve adaptive management, and implement appropriate measures based on continuing data collection. The Settlement Agreement in this case, however, fails entirely to involve adequate reopener provisions to reevaluate in intervals to address demonstrated project impacts on water quality by the Conowingo Dam. The lack of reopener provisions in this Settlement Agreement shows a blatant disregard for the health of the Chesapeake Bay.

Although some money is earmarked for clean-up efforts in the Settlement Agreement, a large portion of money is simply for the following studies without any remediation efforts required of Exelon nor any reopener options available to Maryland notwithstanding the results:

1. Chlorophyll A study plan
2. Dredge feasibility study plan
3. Eel passage research payment
4. Sediment disposal study

Payment for these studies without provisions for remediation efforts required of Exelon nor any reopener options available to Maryland after receiving the results of such studies is not sufficient. Payment to complete studies now won't help when MDE is handcuffed from taking any action after receiving the results of the studies for the duration of a half-century license. By the time the next certification occurs, the studies will be outdated and useless.

Letting the fox guard the henhouse, the lack of MDE oversight or meaningful enforcement authority creates a potentially dangerous situation for the license renewal term before Maryland can legitimately reexamine the situation for the next WQC. Adaptive Management and Reopener provisions are very important in case of a multi-year renewal, when water quality will change, new technology will present itself, and the situation is fluid, literally and figuratively. Given the lengthy term of relicense sought by Exelon from FERC, and to enable ongoing adaptive management for the betterment of the Bay and downstream water quality, reopeners with triggers are imperative and should be built into any WQC. The Coalition counties believe there should be adaptive management requirements every few years for continued oversight by MDE, particularly with respect to the following crucial factors:

1. Modification of flow requirements;
2. Dredging, sampling and use of the dredge material;
3. Sediment measurements downstream; and
4. Oversight in significant storm and weather events, high flow situations.

As noted above, significant reopener provisions included in MDE's WQC but omitted from Settlement Agreement include the following:

- While requiring a study to be conducted for the first three years on nitrogen and phosphorus levels, the Settlement Agreement has no reduction requirements for nitrogen or phosphorus regardless of the results. For example, reduction could be achieved by dredging. The Settlement Agreement, however, has no requirements for dredging the reservoir.
- The Settlement Agreement has no requirements for continued monitoring by Exelon of downstream monitoring of nutrient levels.
- The Settlement Agreement handcuffs MDE, imposes no required remediation by Exelon, and has no provision to reopen in the event dangerous nutrient levels are detected.
- The Settlement Agreement imposes no specific actions with respect to Chlorophyll A requirements of Clean Water Act.
- The Settlement Agreement has no requirements for Exelon to take any specific downstream habitat improvement action.
- The Settlement Agreement has no requirement for a lower river fish plan.
- The Settlement Agreement has no requirement for a spillway plan.
- The Settlement Agreement is silent on criminal or civil liability of Exelon should it fail to fulfill its obligations in operating the Dam.

The Chesapeake Bay, being "a national treasure constituting the largest estuary in the United States and one of the largest and most biologically productive estuaries in the world," is so unique that it requires consideration of protections and safeguards beyond the typical licensure approval. *See generally* Executive Order 13508, *Chesapeake Bay Protection and Restoration,* May 12, 2009. Adaptive management and reopener provisions are crucial in the case of this relicensing considering the importance and diversity of the Chesapeake Bay. The Settlement Agreement fails to require the appropriate provisions to address the ongoing issues.

D. Money to be Paid by Exelon Under the Settlement Agreement is Insignificant in View of Lengthy License Renewal Term Sought

The monetary payments provided for under the Settlement Agreement are insufficient, particularly when compared to the settlement agreement payments required under Pennsylvania's WQC for Muddy Run Pumped Storage Facility in the same vicinity as the Conowingo Dam and in light of the lengthy license renewal term sought by Exelon. The 2014 WQC issued for Muddy Run requires direct payments dedicated to local governments, whereas the Settlement Agreement for Conowingo appropriates no money for local governments or other interested parties actively engaged in efforts to clean up the Chesapeake Bay at significant expense. The 2014 WQC issued for Muddy Run requires at least $7,500,000 be paid by Exelon for "habitat/sediment improvement projects in Lancaster and York Counties", whereas the Settlement Agreement in this case does not dedicate any funds to be directly applied to clean up efforts of the local counties most directly affected by the Conowingo Dam pollution. Local governments are charged with Bay cleanup requirements to combat issues caused by the Conowingo Dam, but no funds are allocated to those most affected, the local governments with whom MDE and FERC are required to coordinate. The Settlement Agreement's failure to coordinate with local counties and allocate funds directly to the local government habitat and sediment improvement projects or other local government cleanup initiatives is a completely unreasonable considering the circumstances.

In the face of inaction upstream from Pennsylvania and New York, payment of money from Exelon to Maryland ignores the Conowingo Factor. The Settlement Agreement requires virtually no change in how Exelon operates the Dam, or any significant effort by Exelon to mitigate or reduce the pollution and poor water quality caused by its operation of the Dam. The Settlement Agreement ignores the roughly 170 million tons of accumulated sediment trapped in the 14-mile reservoir which is repeatedly dumped downstream during high-flow events. On the contrary, the Settlement Agreement should require action by Exelon, including dredging of the Conowingo Reservoir, to address the vexing problems that the Dam presents - not shift the burden to the State (and by implication the State's local governments) with hush money. Local governments are heavily burdened under the law to implement BAT systems, TMDL, and other cleanup measures, while Exelon will be let off the hook by making paltry payments to the State over a lengthy relicense term. Money alone won't fix the problems the Dam presents if Exelon is not also forced to change its ways and participate in meaningful restoration efforts.

Conclusion

Since the Coalition's inception in 2012, the Coalition counties have been raising awareness of the Conowingo Factor while in pursuit of improvement to the water quality of the Bay in the most prudent and fiscally responsible manner possible – through research, coordination and advocacy. There is no denying that the Conowingo Dam has profoundly altered the lower Susquehanna River estuary and the Chesapeake Bay estuary. If the ongoing impacts from the operation and maintenance (or lack thereof) of the Conowingo Dam are not adequately addressed at this juncture, the downstream efforts and expenditures undertaken by Marylanders will not achieve meaningful and lasting improvement to the upper Bay or overall Bay water quality. This will significantly impact the local government members of the Clean Chesapeake Coalition and the citizens of these counties. A change in trajectory of the Bay agenda is needed and that starts

with the Commissioning rejecting the Settlement Agreement outright, or amending it to incorporate the recommendations set forth herein.

WHEREFORE, based on the foregoing, the above-named members of the Coalition respectfully request that the Joint Offer of Settlement and Explanatory Statement between Exelon and the MDE be rejected outright or amended to incorporate the recommendations set forth herein.

Respectfully submitted,

/s/ Charles D. MacLeod

_____

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Attorneys for the counties of the Clean Chesapeake Coalition

EXHIBIT

A

NASA photograph from the Terra satellite, September 13, 2011 (a few days after Tropical Storm Lee) showing sediment plume extending about 100 miles to the mouth of the Potomac River.

The objective of the Clean Chesapeake Coalition is to pursue improvement to the water quality of the Chesapeake Bay in a prudent and fiscally responsible manner – through research, coordination and advocacy.

A picture is worth a 1,000 words...

This NASA satellite image appeared in the August 2012 U.S. Geological Survey report that confirmed the exponential loss of trapping capacity in the Conowingo Dam reservoir, and has since served as a calling card for the Coalition. We added the county jurisdictional boundaries.

Here are the staggering numbers behind the photograph of the 100-mile long sediment plume emanating from the Conowingo Dam a few days after Tropical Storm Lee in September 2011.

Estimated amounts transported into the Bay during this single storm event (over 9 days), According to the *U.S. Geological Survey:*	
42,000 tons nitrogen	**10,600 tons phosphorus**
19 million tons sediment	****4 million tons scoured (at least)**
According to the *UMCES - Horn Point (Cambridge, MD) Survey:*	
115,910 tons nitrogen	**14,070 tons phosphorus**
By comparison (yearly Susquehanna River pollutant loading averages 1978-2011):	
71,000 tons nitrogen | 3,300 tons phosphorus | 2.5 million tons sediment	

Pollution reduction targets per EPA Bay TMDL and Maryland WIP (through 2025):

	State WIP Costs (billions)	**State WIP Results (tons/year)**
Stormwater	**$ 7.38**	**N**itrogen – **1,100** | **P**hosphorus – **116** | **S**ediment – **102,370**
Septics	**$ 3.71**	**N**itrogen – **620** | **P**hosphorus – **0** | **S**ediment – **0**
WWTP	**$ 2.36**	**N**itrogen – **1,909** | **P**hosphorus – **46** | **S**ediment – **0**
Agriculture	**$ .928**	**N**itrogen – **2,372** | **P**hosphorus – **187** | **S**ediment – **37,108**
TOTAL	**$ 14.4**	**N**itrogen – **6,001** | **P**hosphorus – **349** | **S**ediment – **139,478**

Learn more at CleanChesapeakeCoalition.com and follow us on Facebook and Twitter.

Conowingo Dam Sediment Plume (April 8 – 11, 2017)

Per USGS, Susquehanna River flow at Conowingo exceeded 190,000 cfs on 4/8/17; the gage height exceeded 20 ft.

EXHIBIT

B

Conowingo Dam Sediment Plume (April 8 – 11, 2017)

Per USGS, Susquehanna River flow at Conowingo exceeded 190,000 cfs on 4/8/17; the gage height exceeded 20 ft.


November 6, 2019
This Image Available at
Maryland DNR's
www.eyesonthebay.net
Image courtesy of the
NASA Worldview application
(https://worldview.earthdata.
nasa.gov/)
operated by the NASA/GSFC Earth
Science Data and Information
System (ESDIS) project.

EXHIBIT

C

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MEMORANDUM

TO: Clean Chesapeake Coalition Members

DATE: April 24, 2015

RE: Conowingo Dam Spring Melt 2015 – April 9th - 16th

As predicted the Susquehanna River has recently surged as snow and ice from its northern reaches melted with the warmth provided by the arrival of spring. The Conowingo Dam as a result opened several flood gates during the period of April 9 - 16, 2015 to account for this increased river flow. Not surprisingly this has caused for a sediment plume to appear (as depicted in the below satellite images) in the Upper Chesapeake Bay as the Susquehanna River's load contains significant suspended matter (both sediments and nutrients). The below images, data and descriptions explain the recent 2015 spring melt associated with the Susquehanna River/Conowingo Dam and its impact on the Upper Chesapeake Bay.

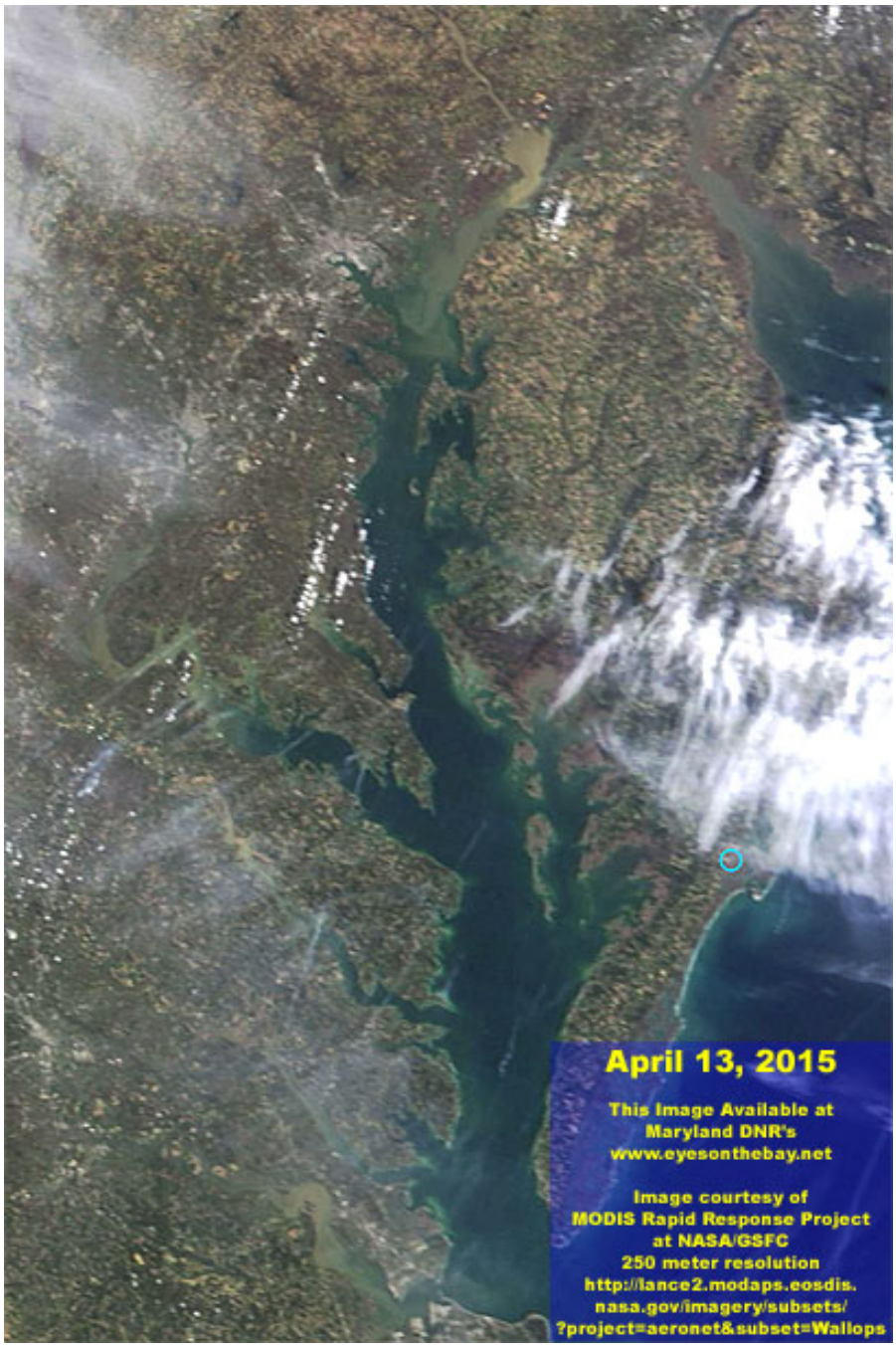
Spring Melt Satellite Images[1]

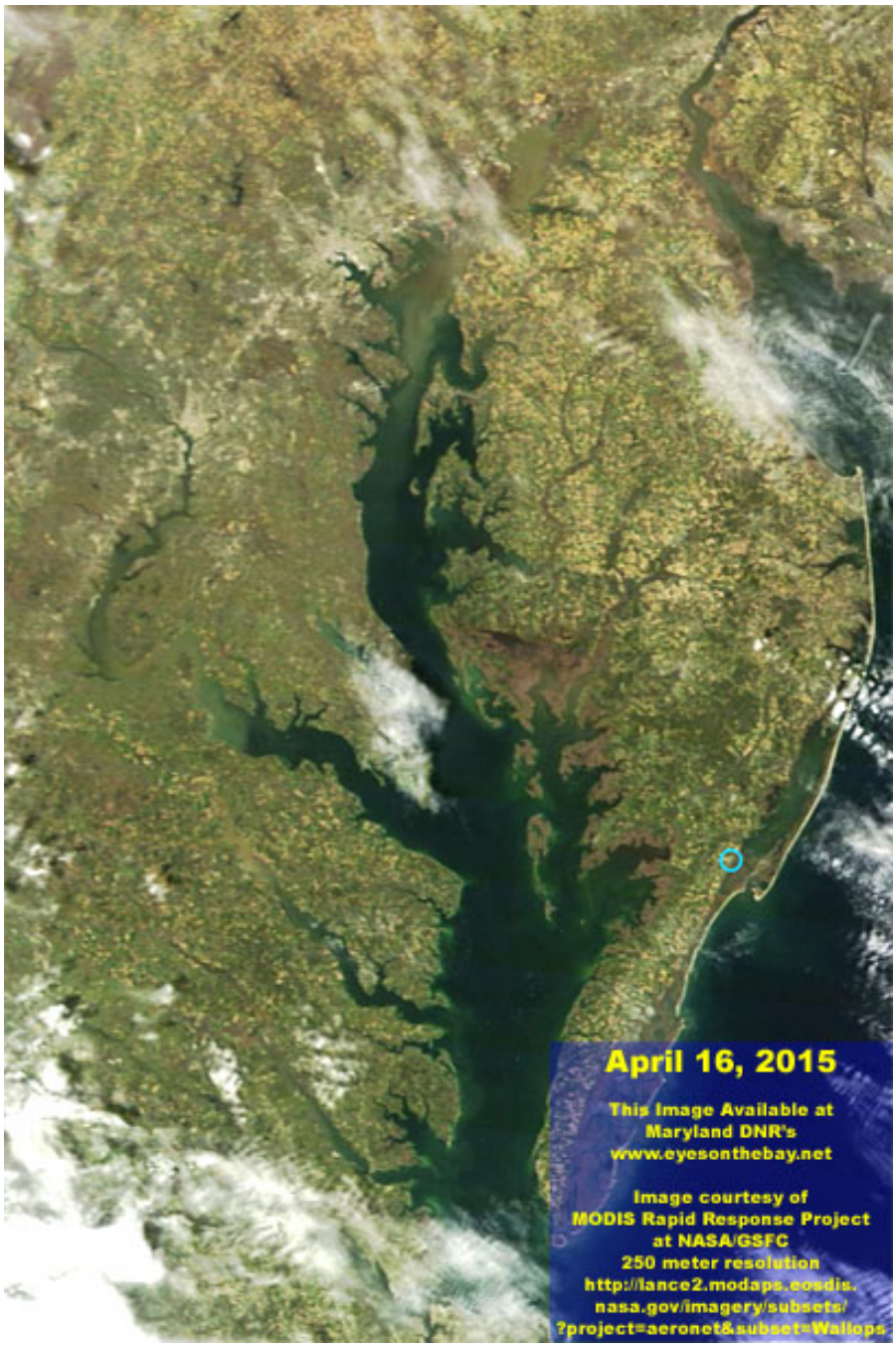
The following select images (April 13th, 16th and 18th were selected because of the image quality- *i.e.*, absence of cloud cover) represent a sediment plume emanating from the Susquehanna River well into the Upper Bay. Additionally, a satellite image representing the total suspended matter on April 18, 2015 is provided.[2]

[INTENTIONALLY LEFT BLANK]

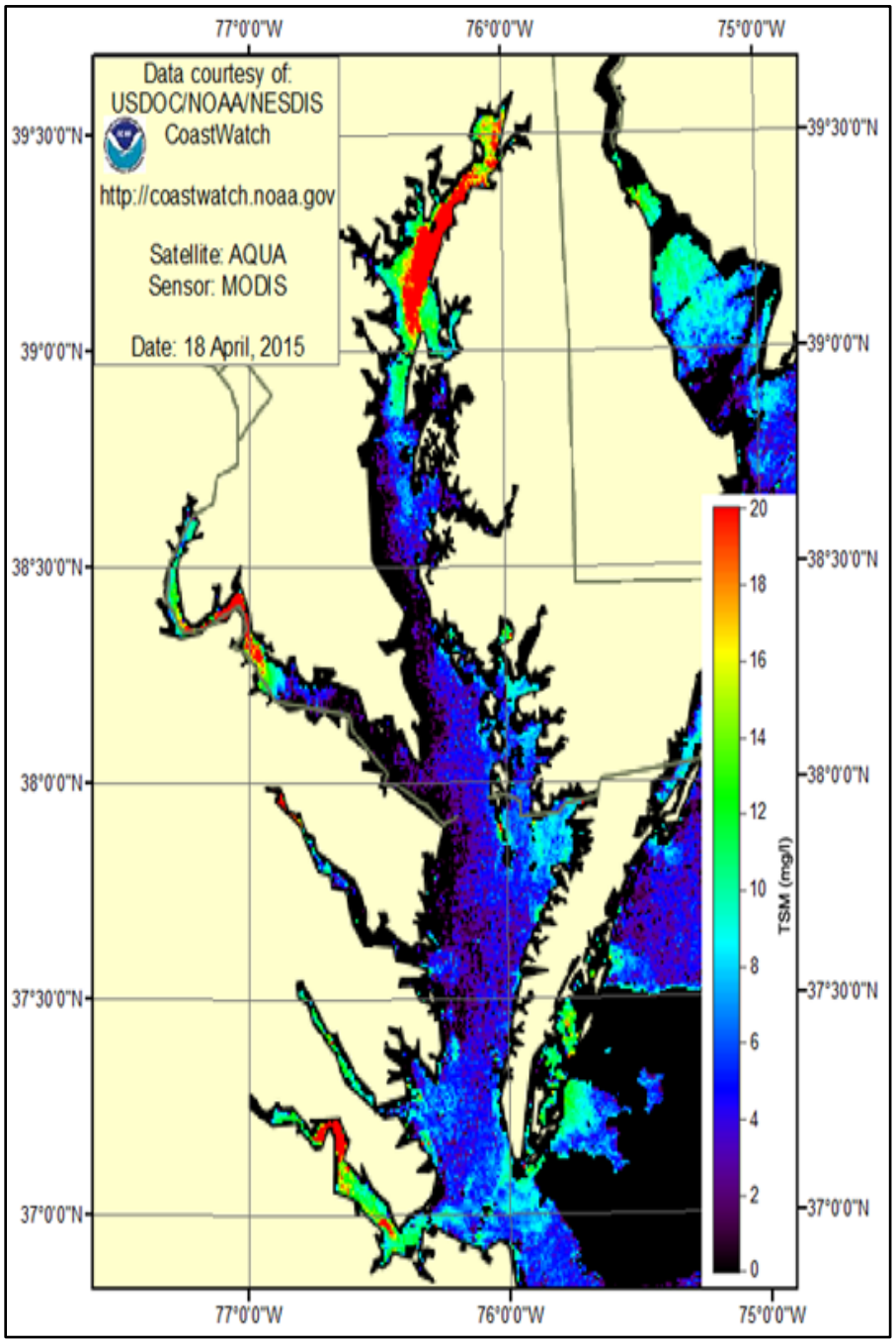
EXHIBIT
D

[1] Satellite images courtesy of DNR Eyes on the Bay, available at: http://mddnr.chesapeakebay.net/eyesonthebay/.
[2] This data is courtesy of NOAA CoastWatch, East Coast Node, available at: http://coastwatch.chesapeakebay.noaa.gov/.


April 13, 2015
This Image Available at
Maryland DNR's
www.eyesonthebay.net
Image courtesy of
MODIS Rapid Response Project
at NASA/GSFC
250 meter resolution
http://lance2.modaps.eosdis.
nasa.gov/imagery/subsets/
?project=aeronet&subset=Wallops


April 16, 2015
This Image Available at
Maryland DNR's
www.eyesonthebay.net
Image courtesy of
MODIS Rapid Response Project
at NASA/GSFC
250 meter resolution
http://lance2.modaps.eosdis.
nasa.gov/imagery/subsets/
?project=aeronet&subset=Wallops

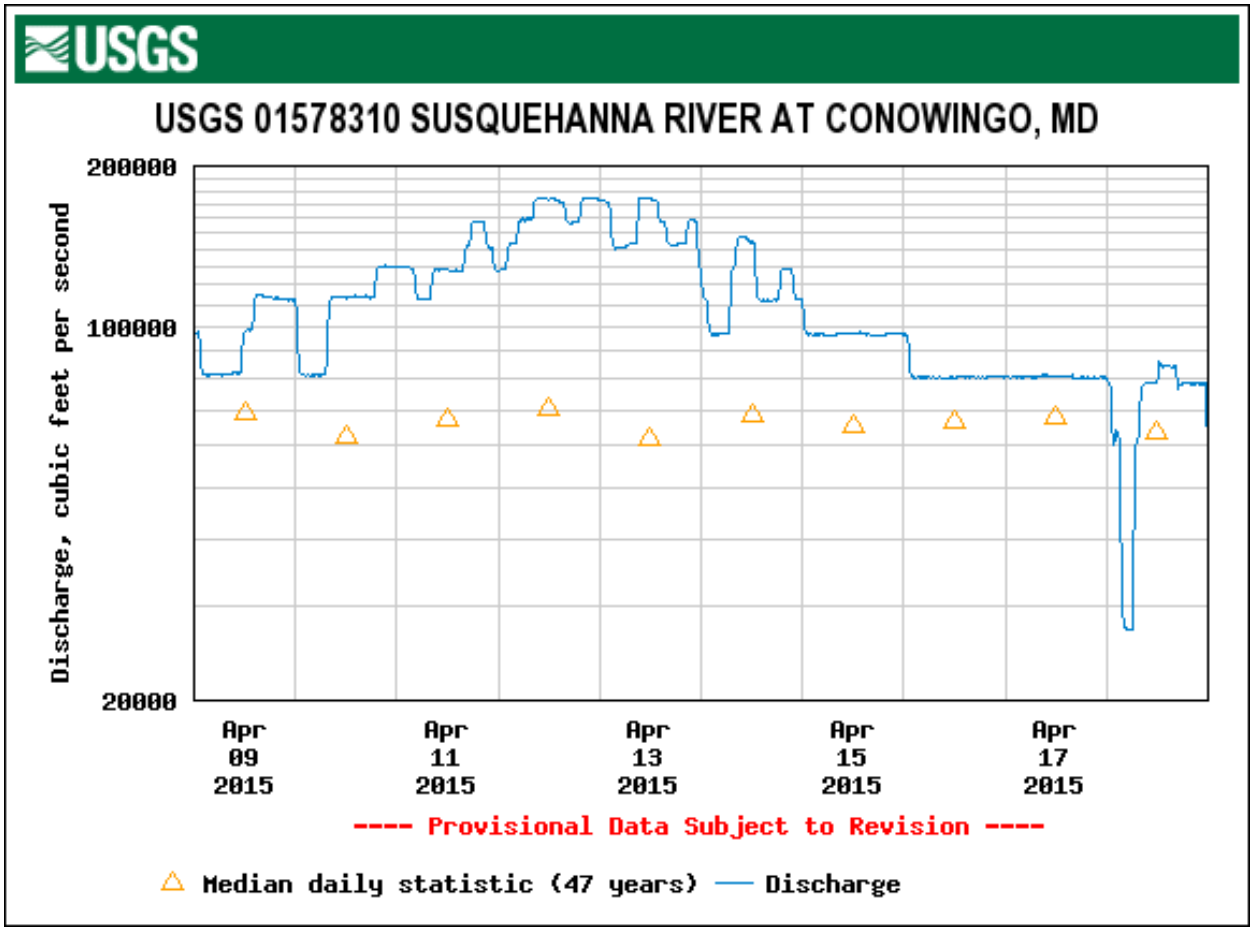

April 18, 2015
This Image Available at
Maryland DNR's
www.eyesonthebay.net
Image courtesy of
MODIS Rapid Response Project
at NASA/GSFC
250 meter resolution
http://lance2.modaps.eosdis.
nasa.gov/imagery subsets/
?project=aeronet&subset=Wallops


77°0'0"W
76°0'0"W
75°0'0"W
39°30'0"N
39°0'0"N
38°30'0"N
38°0'0"N
37°30'0"N
37°0'0"N
Data courtesy of:
USDOC/NOAA/NESDIS
CoastWatch
http://coastwatch.noaa.gov
Satellite: AQUA
Sensor: MODIS
Date: 18 April, 2015
TSM (mg/l)
20
18
16
14
12
10
8
6
4
2
0

Spring Melt Data[3]

The following select data and respective graphs represent the water flow data that corresponds with the above satellite images. Enclosed as Exhibit A is data for the Susquehanna River at Conowingo Dam for April 9th - 16th, 2015 with river flow monitoring occurring every 15 minutes, every hour and day.

The first graph represents the cubic feet per second (ft^3/s) of the Susquehanna River's water at Conowingo Dam. The peak flow was 175,000 ft^3/s on April 12th and 13th.

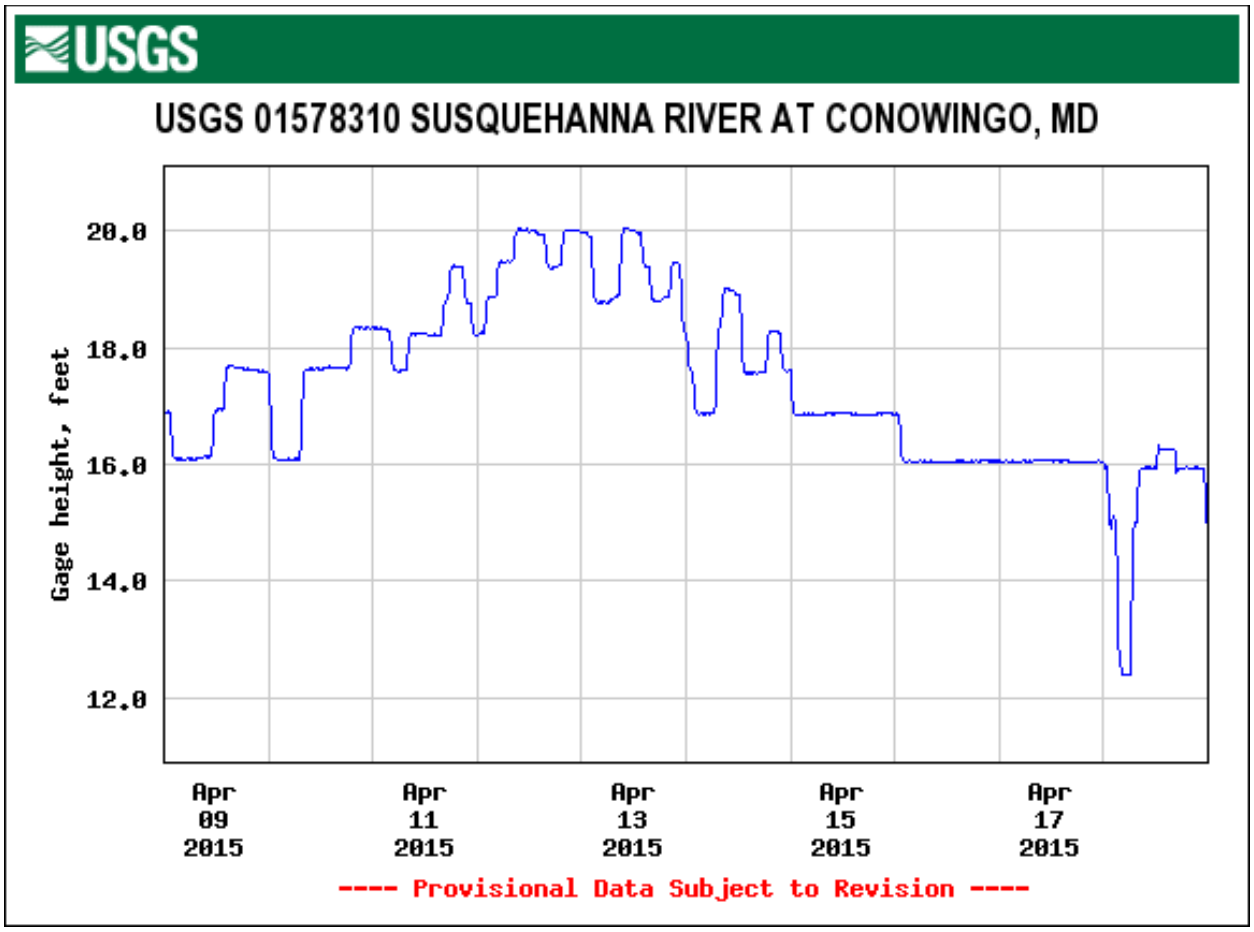


It has been determined that scour occurs at discharges roughly greater than 175,000 ft^3/s with concentrations of discharges rising steeply when discharges are above that amount.[4]

[3] Data and graphs courtesy of U.S. Geological Survey Water Science Center, available at: http://waterdata.usgs.gov/md/nwis/uv?site_no=01578310.

[4] Hirsch, R.M., 2012, Flux of nitrogen, phosphorus, and suspended sediment from the Susquehanna River Basin to the Chesapeake Bay during Tropical Storm Lee, September 2011, as an indicator of the effects of reservoir sedimentation on water quality: U.S. Geological Survey Scientific Investigations Report 2012–5185, 17 p.

The second graph represents the max gage (water level in feet) level of the Susquehanna River's water at Conowingo Dam. The peak gage level was 20.04' on April 12th and 13th.



The National Oceanic and Atmospheric Administration's ("NOAA") Advanced Hydrological Prediction Service provides that gage levels for the Conowingo Dam of 19' - 21' equates 147,000 ft^3/s - 204,000 ft^3/s, respectively. These were the same levels reached at Conowingo Dam during the recent spring melt. NOAA's instruction provides further that at such amounts Level 1 (20') was reached, which triggers 10-11 gates to be opened, while a Level 2 was nearly reached (21.5'), which triggers 12-15 gates to be opened.[5] Discussion with an Exelon employee revealed that the following amounts of gates were opened on the respective dates:

April 9th - 2 gates;
April 10th - 3 gates;
April 11th - 6 gates;
April 12th - 6 gates;

[5] *See* link: http://water.weather.gov/ahps2/hydrograph.php?wfo=phi&gage=CNWM2.

April 13th - 6 gates;
April 14th - 4 gates;
April 15th - 2 gates; and
April 16th - 1 gate.

Enclosure

Exhibit A – Conowingo Dam Discharge Data April 9th- 16th

Conowingo Matters

The Chesapeake Bay is a national treasure.[i] The reasons to save the Bay are limitless and need not be debated.

The health of the Chesapeake Bay is impacted more by what flows downstream and from other watershed states than from the shoreline, tributaries and human activity in Maryland.[ii]

The Susquehanna River is the largest tributary to the Bay, providing more than 50% of the freshwater to the Bay, and is (where it flows through the Conowingo Dam) the single largest point source of pollution loading to the Bay – 46% of the nitrogen, 26% of the phosphorus and 33% of the sediment that is loaded annually into the Bay as a whole.[iii]

For more than 85 years, the Conowingo Dam has been harnessing the Susquehanna River to produce hydroelectric power for sale while also functioning as a large sediment trap. The 14-mile reservoir above the Dam (aka "Conowingo Pond") is the largest stormwater management pond (8,500 acres; 310,000 acre-feet) in the entire Chesapeake Bay watershed – and is now full.[iv]

Conowingo Pond has lost its trapping capacity (reached "dynamic equilibrium") whereby all that flows to the Dam passes through unchecked (without settling, as if the Dam was not there) into the Chesapeake Bay. At equilibrium, the annual average pollution loadings from the Susquehanna River are exacerbated: a 250% increase in the 2.5 million ton average annual suspended sediments load; a 70% increase in the 3,300 ton average annual phosphorus load; and a 2% increase in the 71,000 ton average annual nitrogen load.[v] Additionally, because Conowingo Pond is full, devastating amounts of accumulated nutrients, sediment and other contaminants are scoured from the reservoir and dumped into the Bay during storm events and in equally harmful proportions now on a regular basis.

The amount of nutrient-laden sediment accumulated in Conowingo Pond, waiting to be scoured into the Bay by the next storm, is enormous at more than 175 million tons – enough to fill about 80 football stadiums.[vi]

In the popular book "Turning the Tide – Saving the Chesapeake Bay" published by the Chesapeake Bay Foundation it was correctly forecasted that "a loss of trapping at Conowingo would cause major problems for water quality in the upper bay and also for dredging the economically vital ship channels serving the Port of Baltimore" - in a section of the book aptly titled "Time Bomb at Conowingo".[vii]

All things considered, dredging Conowingo Pond and upstream reservoirs to regain trapping capacity, and then maintaining those reservoirs, should be priority number one in our Chesapeake Bay restoration efforts as there is not currently available or in play a more cost effective and environmentally beneficial (measurable) single activity to improve the Bay's water quality; and such an undertaking would benefit local economies.

Today, there is no commitment, plan, responsible party or budget to specifically address the devastating amounts of nutrients, sediment and other contaminants that are scoured into the Bay during storm events and in equally harmful proportions now on a regular basis.

Since 1983, numerous federal, state and local government agencies and private organizations have spent more than $15 billion in the name of Bay restoration;[viii] and Maryland alone has committed its taxpayers to spend more than $14.4 billion by 2025 to meet pollution reduction goals set by the U.S. Environmental Protection Agency (EPA).[ix]

CLEAN CHESAPEAKE COALITION

The modeling used by EPA to establish the "pollution diet" for the Chesapeake Bay and to apportion cleanup responsibility among the watershed states does not adequately account for the loss of nutrient and sediment trapping capacity in Conowingo Pond and the resulting increased pollution to the Bay from upstream sources. In Appendix T of the 2010 Bay TMDL the trapping capacity of Conowingo Pond is erroneously assumed through 2025; and waiting to recalibrate is unfair to Marylanders.[x]

The State of Maryland's watershed implementation plan (WIP) ignores the pollution attributable to the loss of trapping capacity in Conowingo Pond and commits zero funding to the problem, while aggressively regulating septic tanks, agriculture and stormwater runoff at enormous costs with marginal returns.[xi]

The new Chesapeake Bay Watershed Agreement (signed June 16, 2014), under the auspices of the Chesapeake Bay Program, includes laudable principals, goals, outcomes and management strategies with no mention whatsoever of the once-in-a-generation opportunity to meaningfully help the Bay and protect Bay restoration efforts and expenditures through the relicensing of the Conowingo Dam now underway with the Federal Energy Regulatory Commission (FERC).[xii]

Exelon Corporation has filed for a 46-year federal license to continue operating Conowingo Dam with no requirements whatsoever to dredge or maintain Conowingo Pond to minimize the scouring of nutrients, sediment and other contaminates into the Bay.[xiii] The draft Environmental Impact Statement (EIS) recently issued by FERC suggests more study and no action by Exelon or others to address the downstream impacts from scour, sediment and the resulting harm to aquatic life.[xiv]

The federal relicensing requires Exelon to obtain from the State of Maryland a "water quality certification" pursuant to Section 401 of the Clean Water Act.[xv] Upon issuance of such, the State will have determined that the continued operation and maintenance of Conowingo Dam meets Maryland's water quality standards. To ensure that this most significant tool in the relicensing process is maximized, the State's attention and resources should be marshalled accordingly – not in the direction of costly programs, policies and practices with questionable or marginal pollution reduction benefits and adverse side effects on local economies.

Oysters and submerged aquatic vegetation (SAV) are Mother Nature's most efficient filters for improving water quality, and the most cost effective.[xvi] Addressing the loss of trapping capacity in Conowingo Pond will give oysters and SAV in the Upper Bay a fighting chance.[xvii] Accepting the status quo above the Dam and the shock loadings of sedimentation due to scour as the new normal leaves the Bay's flora and fauna in peril and undermines downstream efforts and expenditures to restore the ecosystem.

It is time to take a step back and look at the big Chesapeake Bay watershed picture, and to recognize the perfect storm of political, economic, governmental, regulatory, environmental and special interest forces – including the power of Mother Nature herself. It is time to reprioritize what we are doing and spending to meaningfully improve the water quality of the Bay. The next big storm could be devastating.

The Clean Chesapeake Coalition is a growing association of Maryland local governments whose elected officials have coalesced to seek improvement to the water quality of the Chesapeake Bay in the most prudent and fiscally responsible manner possible – through research, coordination and advocacy.

[i] *See* President Obama Executive Order 13508, May 12, 2009.
See link: http://executiveorder.chesapeakebay.net/EO/file.axd?file=2009%2f8%2fChesapeake+Executive+Order.pdf.
[ii] U.S. Environmental Protection Agency, Chesapeake Bay Total Maximum Daily Load (TMDL) for Nitrogen, Phosphorus and Sediment; December 29, 2010, Section 4.1 – Sources of Nitrogen, Phosphorus and Sediment to the Chesapeake Bay: Jurisdiction Loading Contributions. 2009 model estimates: Maryland loadings – 20% of total nitrogen; 20% of total phosphorus; 17% of total sediment).
[iii] *Id*. at Section 4.2 – Sources of Nitrogen, Phosphorus and Sediment to the Chesapeake Bay: Major River Basin Contributions.
[iv] Hirsch, R.M., 2012, Flux of nitrogen, phosphorus, and suspended sediment from the Susquehanna River Basin to the Chesapeake Bay during Tropical Storm Lee, September 2011, as an indicator of the effects of reservoir sedimentation on water quality: U.S. Geological Survey Scientific Investigations Report 2012–5185, 17 p. *See* link: http://pubs.usgs.gov/sir/2012/5185/.
[v] *Id*.
[vi] Testimony of Colonel J. Richard Jordan, III, Commander and District Engineer, U.S. Army Corps of Engineers-Baltimore District; to Senate Committee on Environment and Public Works, Subcommittee on Water and Wildlife, Field Hearing on May 5, 2014 at Conowingo Dam Visitors Center; Chaired by Hon. Benjamin L. Cardin.
[vii] Horton, Tom, "Turning the Tide: Saving the Chesapeake Bay." Island Press, Revised Ed. 2003, pg. 97.
[viii] Jackson, Alex. "Following the money spent on Chesapeake Bay an elusive pursuit." CapitalGazette.com. October 4, 2013. *See* link: http://www.capitalgazette.com/news/environment/following-the-money-spent-on-chesapeake-bay-an-elusive-pursuit/article_bac613d3-fe43-591d-a7d6-a017bec635ae.html.
[ix] Maryland's Phase II WIP, Section I, pg. 56. *See* link:
http://www.mde.state.md.us/programs/Water/TMDL/TMDLImplementation/Documents/FINAL_PhaseII_Report_Docs/Final_Documents_PhaseII/Final_Phase_II_WIP_MAIN_REPORT_102612.pdf.
[x] U.S. Environmental Protection Agency, Chesapeake Bay TMDL Appendix T. *See* link:
http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/FinalBayTMDL/AppendixTSusquehannaDams_final.pdf.
[xi] *See generally* Maryland's Phase II WIP. *See* link:
http://www.mde.state.md.us/programs/Water/TMDL/TMDLImplementation/Pages/FINAL_PhaseII_WIPDocument_Main.aspx.
[xii] *See generally* Chesapeake Watershed Agreement 2014. *See* link:
http://www.chesapeakebay.net/documents/FINAL_Ches_Bay_Watershed_Agreement.withsignatures-HIres.pdf.
[xiii] *See* Federal Energy Regulatory Commission Docket Number P-405, filing 20120831-5024, submitted August 30, 2012.
[xiv] *See* Federal Energy Regulatory Commission Docket Number P-405, filing 20140730-4001, submitted July 30, 2014.
[xv] Clean Water Act, Section 401(a)(1), 33 U.S.C. § 1341(a)(1).
[xvi] Oyster filtration- *see* link: http://chesapeakebay.noaa.gov/oysters/oyster-reefs.
SAV filtration- *see* link: http://web.vims.edu/bio/sav/AboutSAV.html.
[xvii] *See generally*: Dennison, W.C., T. Saxby, B.M. Walsh (eds.). 2012. *Responding to major storm impact: Chesapeake Bay and the Delmarva Coastal Bays*, pg. 9, concluding that: "The impact of [Tropical Storm] Lee on aquatic grasses at the [Susquehanna] flats was substantial." *See also*: U.S. Army Corps of Engineers, *Chesapeake Bay Oyster Recovery: Native Oyster Restoration Master Plan*, pg. 56, concluding that: "Sediment is a significant threat to oysters. Sediment effectively smothers oysters. Oyster growth must be greater than sediment rates in order for oysters to survive."

Toxins in Conowingo Pond Sediments

A Maryland Department of Natural Resources marine scientist, Brenda Davis, recently stated that toxic sediments from the Conowingo Pond probably contribute to the death of blue crabs in the Chesapeake Bay.[i]

Polychlorinated bi-phenyls ("PCBs") were once widely used as an additive to cooling and lubricating oil in electrical transformers and turbines at power plants.[ii] Such oils typically discharge onto the floor of the power plant during operation and are washed off during routine maintenance operations.[iii] PCBs are a suspected carcinogen that bio-accumulates in human and animal tissue. PCB's do not degrade or break down when released into the environment.

PCBs have been detected in the tissue of fish in the lower Susquehanna River and the upper Chesapeake Bay.[iv] The likely sources of such PCBs are the power plants, including the Conowingo Hydroelectric Plant and the Peach Bottom Nuclear Power Plant, in the lower Susquehanna River.

PCBs probably would be found in the accumulated sediments in the Conowingo Pond if the sediments are tested for PCBs. The U.S. Environmental Protection Agency ("EPA"), in its September 2014 formal comments on the Draft Environmental Impact Statement prepared by the Federal Energy Regulatory Commission ("FERC") in the Conowingo Project, requested FERC to require Exelon Corporation ("Exelon") "to consider the effects of PCB impairment in the Conowingo Po[nd]."[v, vi]

In 2013, Exelon "installed a new state-of-the-art, high performance oil/water separator [("OWS")] system at the Conowingo Hydroelectric Generating Station. The OWS system is designed for the removal of free-floating oil and oily-coated solids from oil-water mixtures."[vii] The OWS was installed at Conowingo Dam to reduce the release of power plant oil and oil contaminated solids to the Susquehanna River. The OWS would not have been installed if such releases were not problematic.

The Susquehanna River Basin Commission has documented that 3 of the 6 sub-basins in the Susquehanna River watershed (the Chemung, Middle Susquehanna and West Branch Susquehanna sub-basins) were home to significant coal mining operations and acid mine drainage ("AMD") were major sources of impairment to Susquehanna River tributaries in those sub-basins.[viii] AMD contributes sediments laden with heavy metals (*e.g.*, arsenic, mercury, copper, lead, chromium and cadmium).[ix] Radionuclides, pesticides and herbicides also can be found in the sediments as a result of the mining, agricultural and power plant operations in the Susquehanna River watershed.[x]

Exelon's hesitance to dredge sediments accumulated behind the Conowingo Dam undoubtedly stems in part from the toxic contaminants likely to be found in the sediments. The quality of the accumulated sediments may also explain the high cost estimates to dredge Conowingo Pond due to expensive disposal options (unfit for routine land application).[xi] The toxic shock to the Bay ecosystem resulting from the scour and release of such contaminated sediments following major storm events has never been studied; but undoubtedly is lethal.

10/14

CLEAN CHESAPEAKE COALITION

[i] "Panel discusses blue crab's decline," Henley Moore, The Star Democrat. Dated September 23, 2014. *See* link: http://www.stardem.com/news/local_news/article_bc637668-4693-51b1-b25c-2442f99c6450.html#.VCMSM1qryYw.twitter

[ii] *See* "PacifiCorp Wraps up Cleanup at Bigfork Hydroelectric Plant," Katrin Frye, MTPR News. Dated March 6, 2012. *See* link: http://mtprnews.wordpress.com/2012/03/06/pacific-corps-wraps-up-. *See also* "Lessons of the Elwha River: Health Hazards During Dam Removal," Wendee Nicole, Environmental Health Perspectives. Vol. 120, No. 11, dated November 2012. *See* link: http://ehp.niehs.nih.gov/120-a430/. "PCB contamination addressed, Peninsula Clarion," Doug Loshbaugh, Peninsula Clarion. Dated August 30, 2000. *See* link: http://peninsulaclarion.com/stories/083000/new_0830000001.shtml.

[iii] *Id*.

[iv] Source Water Assessment and Protection Report, Perryville, Contract No. V00P1200457. Produced for the Maryland Department of the Environment, at pg. 35. Dated May 30, 2003. *See* link: http://mde.maryland.gov/assets/document/hb1141/harford/harf_toxics.pdf.

[v] September 29, 2014, letter from U.S. Environmental Protection Agency Region III John R. Pomponio to Federal Energy Regulatory Commission Secretary Kimberly D. Bose. *See* Submittal 20140930-5066, FERC Project Nos.: 1888-030, 2355-018 and 405-106. Filed September 29, 2014.

[vi] Exelon is the current owner/operator of Conowingo Dam.

[vii] 2013 Exelon Corporation Sustainability Report, at pg. 51, "Protecting Water Quality at Conowingo." *See* link: http://www.exeloncorp.com/assets/newsroom/docs/CSR/index.html.

[viii] *See*, *supra*, FN iv, at 11, 13-14, 25-26, 37.

[ix] *Id*. at 26, 37, 44.

[x] *Id*. at 32-34, 35, 37, 44.

[xi] Colonel J. Richard Jordan, III, Commander and District Engineer, U.S. Army Corps of Engineers - Baltimore District stated that to dredge back to 1996 levels it is estimated to "cost somewhere between a half and $3 billion…" *See* transcript from May 5, 2014, U.S. Senate Committee on Environment and Public Works, Subcommittee on Water and Wildlife Field Hearing: "Finding Cooperative Solutions to Environmental Concerns with the Conowingo Dam to Improve the Health of the Chesapeake Bay," at pg. 35.

FOR CONCERNED CITIZENS and LEGISLATORS

Clean Chesapeake Coalition Advocates for Conowingo Pond Dredging

The Conowingo Dam (the "Dam") converted the lower Susquehanna River into a large stormwater management pond that Exelon, the Dam's owner, calls the "Conowingo Pond." The Dam widened the natural course of the river and increased the depth of the river. Widening and deepening the river slowed the rate of flow of water in the river, which allowed suspended solids in the river to settle (fall out of suspension) on the bottom of the reservoir and become "trapped" in the same manner that a stormwater management pond "traps" sediments.

Like all stormwater management ponds, the Dam has altered the otherwise normal or natural flow of water in the Susquehanna River. Like all stormwater management ponds that have not been maintained (*i.e.*, periodically dredged of the sediments that accumulate in the artificially created reservoir), during significant storm events, accumulated sediments have been scoured from the bottom of the pond and dumped in mass below the Dam, shocking the Maryland portion of the Chesapeake Bay with a blanket of deadly sediments.

Sediment Scoured From The Conowingo Reservoir During Significant Storm Events[1]

Storm	Year	Month	Peak Flow Cu^3/sec	Volume of Sediment Scoured into Bay (Million Tons)
Hurricane Agnes	1972	June	1,130,000	20
Hurricane Eloise	1975	September	710,000	5
Unnamed	1993	April	442,000	2
Unnamed	1996	January	909,000	12
Hurricane Ivan	2004	September	620,000	3
Unnamed	2011	March	487,000	2
Hurricane Irene	2011	July	Unmeasured	Unmeasured
Tropical Storm Lee	2011	September	778,000	4
Hurricane Sandy	2012	October	Unreported	Unreported

[1] Jeffrey Brainard, *Big Year for Bay Storms, Bad Year for Bay Sediment?*, Chesapeake Quarterly Vol. 10 No. 4, Dec. 2011. See link: http://www.mdsg.umd.edu/CQ/V10N4/main1/. *See also The Impact of Sediment on the Chesapeake Bay and its Watershed*: U.S. Geological Survey, June 3, 2005. See link: http://chesapeake.usgs.gov/SedimentBay605.pdf.

Billions of taxpayer dollars have been spent to dredge the navigable shipping channels in the upper Bay and the channels into local marinas that have been clogged with sediments. The largest source, if not the sole source, of those sediments is the Susquehanna River, including scour from the bottom of the Conowingo Pond. Economically and environmentally, those sediments should be dredged from the pond behind the Dam where they have accumulated (approximately 9,000 acres or 3,600 hectares), not after they are dumped into the Bay and spread across approximately 4,479 square miles.

Exelon, a company with over $30 billion in annual revenues, receives at least two benefits from the Dam: (1) it produces 572 megawatts of electricity, which is enough electricity to power an average of 572,000 or more homes; and (2) it receives renewable energy credits that may be used or sold to offset air emissions from power plants that burn fossil fuels.

Sediment Loading From Storm Event Scour In Comparison to Average Annual Sediment Loading from Susquehanna River

Storm	Year	Avg. Annual Sed. Load from Susquehanna River (Million Tons)	Sed. Load From Scour (Million Tons)	% of Avg. Annual Load from Scour
Hurricane Agnes	1972	1.5	20	1,333%
Hurricane Eloise	1975	1.5	5	333%
Unnamed	1993	1.5	2	133%
Unnamed	1996	1.5	12	800%
Hurricane Ivan	2004	1.5	3	200%
Unnamed	2011	1.5	2	133%
Tropical Storm Lee	2011	1.5	4	266%
Hurricane Sandy	2012	1.5	Undetermined	Undetermined

The photographs below were taken within 2-4 days after Tropical Storm Lee in September 2011.

Scour during significant storm events occurs in less than one week. Thus, in a matter of days, scour from the Conowingo Pond during a significant storm has added anywhere from 133% to 1,333% more than the average annual sediment loading from the Susquehanna River. Such loading results in a big die-off of oysters and underwater grasses in the Bay north of the Choptank River. In 1972, up to a meter of sediments was added to the floor of the upper Bay; two-thirds of that sediment was attributed to scour from the floor of the lakes and reservoirs behind the three dams in the lower Susquehanna River. During Tropical Storm Lee, over two inches of sediments were deposited on the floor of the upper Bay. In short, the shock effect of this rapid loading of scoured sediments is devastating to all fauna that cannot flee (swim) to the lower Bay and to all SAV in the upper Bay. The oysters and SAV in the upper Bay and the upper Bay tributaries have never recovered from the devastation caused by the scour from Hurricane Agnes. SAV in the Susquehanna Flats was killed to pre-1985 levels (thousands of acres of SAV were killed) as a result of the two storm events in 2011.

The Dam traps the best sediment - sand - and releases the most damaging sediments - clay and silt - into the Bay. The Bay has thus been deprived of sand that is necessary: (1) to hold the roots of SAV during storm events; (2) to support the shell beds of oysters; (3) to fortify shorelines and thus reduce erosion; and (4) to cover and suppress the clays and silts that are washed into the Bay so that those clays and silts (a) do not continue to emit phosphorus and nitrogen bound to them in the Susquehanna estuary, (b) do not continue to agitate into suspension and cloud the Bay waters; and (c) do not deprive Bay flora and fauna of needed sunlight and habitat.

If the Conowingo Pond is not dredged and maintained, the Bay will never recover. Coalition members have intervened in the relicensing of the Dam to urge the Federal Energy Regulatory Commission (FERC) to place conditions on the license to be issued that will require Exelon to dredge and maintain the stormwater management pond created by the Dam so that a blanket of deadly sediments cannot be scoured from the bottom of the reservoir and deposited in the Bay now with regularity and in devastating proportions during significant storm events.

The Coalition observes that the science underpinning the points being made all comes from federal agencies and institutions funded by federal agencies and federal tax dollars. The Coalition hopes that FERC will act consistently with federally conducted and federally funded studies, unless it is able to offer a scientifically based rationale for why such studies are invalid or unreliable and undeserving of due consideration in the relicensing of the Dam.

The Coalition observes that significant federal financial resources have been devoted to dredging below the Dam. Federal resources should be directed to the capture of sediments above the Dam before such sediments are widely dispersed over the Bay. It would be more cost effective to capture sediments above the Dam than below. To the extent that dredging of the Conowingo Pond will reduce the federal funds required to dredge the upper Bay in order to keep the Port of Baltimore and the stream of marine commerce viable, a portion of such savings could equitably be directed to assist Exelon with the cost of dredging and maintaining the Conowingo Pond.