Exhibit 30

GOMEZ AND SULLIVAN ENGINEERS

Memo

July 26, 2023

From:

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Ian Kiraly, Gomez and Sullivan Engineers

Re: Effects of Flows on Aquatic Resources Downstream of Conowingo Dam

We were tasked with reviewing technical information pertaining to flows from the Conowingo Hydroelectric Project (Project) and potential effects on aquatic resources downstream of Conowingo Dam. The information provided below provides new/updated information relative to stranding and aquatic habitat downstream of Conowingo Dam based on the original studies we did as part of licensing the Conowingo Project before FERC.

1. Settlement Agreement Down-ramping Rates and Justification

Stranding of fish was studied as a potential effect of Project related flow changes during relicensing.[1] Based on the study data, FERC concluded in the Final EIS that, though some stranding of fish was observed, there was no evidence of substantial stranding downstream of Conowingo Dam and that there appears to be little justification for requiring specific measures to prevent stranding below the dam. However, the proposed flow regime in the Settlement Agreement includes year-round down-ramping restrictions when the Project discharge is less than 30,000 cfs. New information to include on the record includes maps of the areas downstream of Conowingo Dam at Project discharges of 28,000 cfs and 20,000 cfs (Exhibit A). At a Project discharge of 28,000 cfs, there is generally good connectivity and sufficient depth for egress (1-2+ feet) among areas that eventually become stranding pools, along with potential corridors connecting the pools to deeper areas of the river channel. Fish would have the potential to move around freely throughout the area and would not yet be considered stranded. Alternatively, at a Project discharge of 20,000 cfs, there would be poor connectivity among potential stranding pools and from the pools to the deeper areas of the river channel due to shallow (depth < 1 foot) and narrow potential routes of egress. As indicated by this analysis, the primary stranding issue begins when flows decline from 28,000 cfs to 20,000 cfs. Therefore, the proposed implementation of down-ramping rate restrictions at discharges less than 30,000 cfs is an appropriate mitigation measure to limit the potential effects of stranding by slowing water level reductions, which would allow time for fish to react to the increasingly shallow waters and find egress to deeper waters.

[1] RSP 3.8 – Downstream Flow Ramping and Stranding Study

2. Underlying Habitat Limitations Downstream of Conowingo Dam

It is important to consider that habitat is a function of flow and substrate, and that substrate in the reach modeled downstream of Conowingo Dam is fixed. In general, the substrate is dominated by bedrock with small pockets of sand, gravel and cobble located at the downstream end of islands as well as at the mouths of Octoraro and Deer Creeks (Exhibit B). The lack of fine-grained sediments and vegetation beds in many areas downstream was studied during the relicensing efforts and is driven by high flow events that are outside of the Project's capabilities to control (RSP 3.15[2], RSP 3.17[3]).

In as much as the metric relied on in several of the analyzes is percent maximum weighted usable area (max WUA) it is important to remember that this metric is calculated based on fixed substrate with depth and velocity varying with flow. As such, the "max WUA" does not reflect optimum habitat for all species because the species use of the substrate available may be very low. Rather, max WUA is a relative term of the amount of habitat available under different flows (even if some of that habitat is poor, for a given species due to substrate).

3. Settlement Agreement Flow Regime and Justification

The 401WQC, as originally issued, included a Year 10 Flow Regime, which was effectively the same flow regime recommended by The Nature Conservancy in its comments on the Project's Final License Application. Using the habitat analyses performed by the Licensee as part of RSP 3.16[4], FERC demonstrated in their Final EIS that, with slight modifications to specific monthly minimum flows, the Licensee's proposed flow regime would provide comparable protection of aquatic habitat relative to The Nature Conservancy's minimum and maximum recommended flows (see Exhibit C). FERC noted that, based on their habitat analysis, there was little basis for the 65,000 cfs flow cap recommended by The Nature Conservancy from March through September. Further, FERC determined that mussel distribution and abundance below Conowingo Dam was limited by shear stress that occurs during high-flow events because areas protected from shear-stress during high-flow events would likely be sufficiently protected from peaking operation flows.

The Licensee performed additional habitat analyses in its reply comments to comments received in response to the Joint Offer of Settlement (Exhibit D). During the ILP, Exelon conducted study 3.16, *Instream Flow Habitat Below Conowingo Dam*, to assess the effects of Project operations on habitat for fish and invertebrates. The study evaluated the Project's impact on different life stages of American shad, striped bass, shortnose sturgeon, smallmouth bass, several taxa of aquatic insects (mayflies, stoneflies, caddisflies), and freshwater mussels. As the FEIS explained, "the study used the River2D model to simulate hydraulic conditions in a study reach extending from Conowingo Dam to the downstream end of Spencer Island (where tidal effects begin)." Using the results of this study, FERC Staff determined that certain flows may improve habitat for some species and life stages, while those same

[2] RSP 3.15 – Sediment Introduction and Transport Study
[3] RSP 3.17 – Downstream EAV/SAV Study
[4] RSP 3.16 – Instream Flow Habitat Assessment Below Conowingo Dam

flows would reduce habitat for other species and life stages. Selection of a flow regime requires balancing among the several target species and life stages to determine which life stage is most important for each time interval, as well as considering the effects of a flow regime on project power production and economics.

Using the relicensing study and the analysis by FERC Staff in the FEIS, Exelon focused its instream-flow evaluation on the spring migration and spawning period for American shad, river herring, and hickory shad. Each of these species uses the river downstream from Conowingo Dam for spawning, and juveniles of these species (as well as gizzard shad) likely provide a seasonal source of forage for migratory striped bass. Enhancing flows during the spring has the potential to provide increases in the production of these anadromous species without constraining Project operation in other seasons, including the summer and winter seasons when there are peaks in the demand for power for cooling and heating.

Given these considerations, the enhanced flow measures in the Joint Offer of Settlement provide for increased flows during key periods. Under the Joint Offer of Settlement, Exelon's minimum flow releases would range from 4,000 cubic feet per second (cfs) in August to February, up to 18,200 cfs in late March, April, and May beginning in Year 4 of the new license.

Applying the analytical framework in the FEIS to these minimum flow measures demonstrates that the proposed flows are as protective as either the FEIS flow recommendations or the TNC proposal. To analyze flows, the FEIS utilized habitat models, developed by Exelon as part of the licensing study process, to evaluate the relationship between aquatic habitat (as measured by weighted usable area (WUA)) and flow when evaluating Exelon's original license proposal, as well as the proposal put forward by TNC. Exelon duplicated FERC Staff's analysis; the results comparing the TNC and FEIS-recommended flows, and the flows proposed under the Joint Offer of Settlement, are set forth below in Table 1.

When analyzing the relationship between habitat and flows, and focusing on a performance metric of 70% of maximum WUA, the flow-regime measures in the Joint Offer of Settlement meet this metric for all key species, except for the period December to March and the second half of June, which falls outside of the key spring period.[5] As noted in the FEIS, the period December to March impacts only adult striped bass, which the FEIS concludes is unlikely to be in the Susquehanna River during this period because of their preference for warmer temperatures found along the coastal areas of Virginia and North Carolina. As to the second half of June, the Joint Offer of Settlement flow proposal of 7,500 cfs is just short of achieving 70% of maximum WUA.

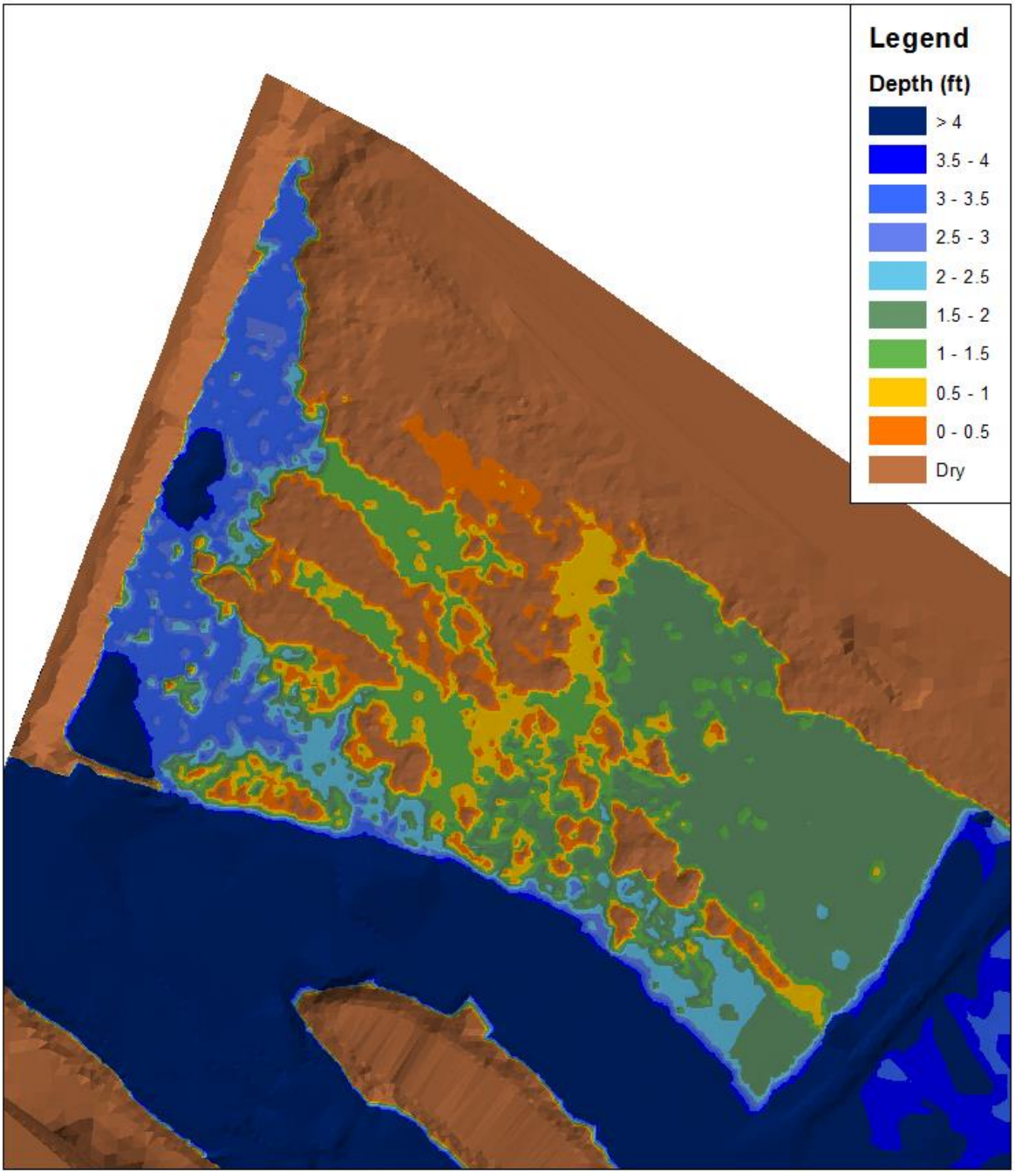
[5] However, in each of these cases, the Joint Offer of Settlement flows are higher than those recommended by FERC Staff.

TABLE 1

Month	Flow Range (cfs)				
	70% MWUA (All Species)	70% MWUA (Key Species)	TNC	Joint OOS	FEIS Recommended Flow
Jan 1- 31	2,000 to 86,000	21,450 to 86,000	11,000 to 86,000	4,000 to 86,000	3,500 to 86,000
Feb 1-29	2,000 to 86,000	21,450 to 86,000	12,500 to 86,000	4,000 to 86,000	3,500 to 86,000
Mar 1-15	2,000 to 86,000	21,450 to 86,000	30,000/24,000 to 65,000	13,100 to 86,000	3,500 to 86,000
Mar 16-31	2,000 to 86,000	21,450 to 86,000		18,200 to 86,000	3,500 to 86,000
Apr 1-30	2,000 to 86,000	13,861 to 86,000	35,000/29,000 to 65,000	18,200 to 86,000	10,000 to 86,000
May 1-31	2,000 to 86,000	7,744[1] to 86,000	25,000/17,500 to 65,000	18,200 to 75,000	7,500 to 86,000
Jun 1-15	2,000 to 86,000	7,744[1] to 86,000	14,000/10,000 to 65,000	10,000 to 75,000	7,500 to 86,000
Jun 16-30	2,000 to 86,000	7,744[1] to 86,000		7,500 to 75,000	5,000 to 86,000
Jul 1- 31	2,000 to 86,000	2,000 to 86,000	8,500/5,500 to 65,000	5,500 to 79,000	5,000 to 86,000
Aug 1-31	2,000 to 86,000	2,000 to 86,000	6,000/4,500 to 65,000	4,000 to 79,000	5,000 to 86,000
Sep 1-14	2,000 to 86,000	2,000 to 86,000	5,500/3,500 to 65,000	4,000 to 79,000	5,000 to 86,000
Sep 15-30	2,000 to 86,000	2,000 to 86,000		4,000 to 79,000	3,500 to 86,000
Oct 1- 31	2,000 to 86,000	2,000 to 86,000	6,000 to 86,000	4,000 to 86,000	3,500 to 86,000
Nov 1-30	2,000 to 86,000	2,000 to 86,000	11,000 to 86,000	4,000 to 86,000	3,500 to 86,000
Dec 1-31	2,000 to 86,000	7,961 to 86,000	11,000 to 86,000	4,000 to 86,000	3,500 to 86,000

[1]Table 3-22 of the FEIS shows this value as 13,861; however, the FEIS appears to have omitted American Shad Fry when compiling these values.

Exhibit A: Depth Maps Downstream of Conowingo Dam



Depth Modeled for 28,000 cfs

N

EXELON GENERATION COMPANY, LLC

CONOWINGO HYDROELECTRIC PROJECT

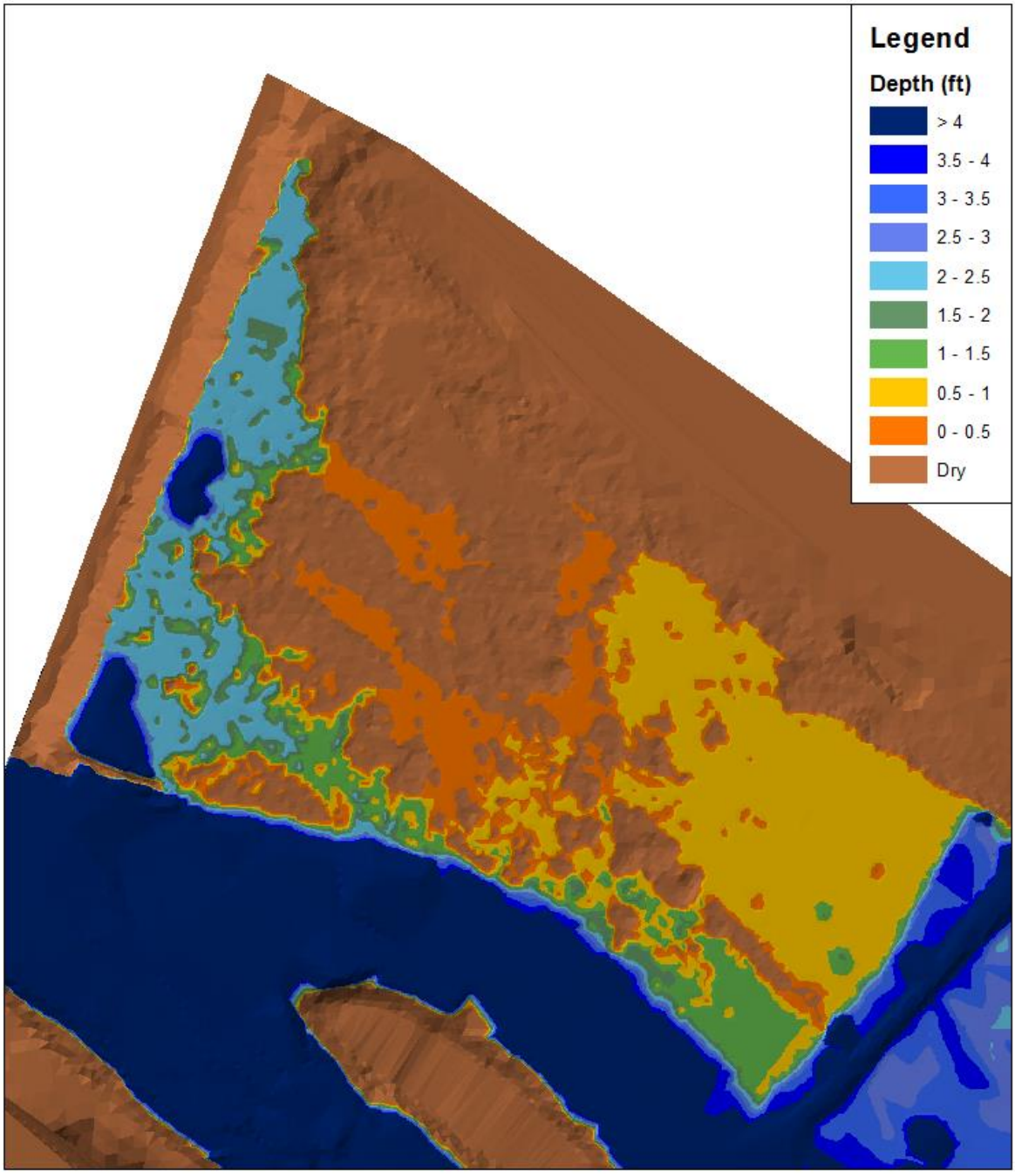
PROJECT NO. 405

0 250 500 1,000

Feet

1 inch = 500 feet

Path: X:\GIS\Maps\lKiraly \Map 28000cfs stranding.mxd



Depth Modeled for 20,000 cfs

Exelon

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EXELON GENERATION COMPANY, LLC

CONOWINGO HYDROELECTRIC PROJECT

PROJECT NO. 405

0 250 500 1,000 Feet

1 inch = 500 feet

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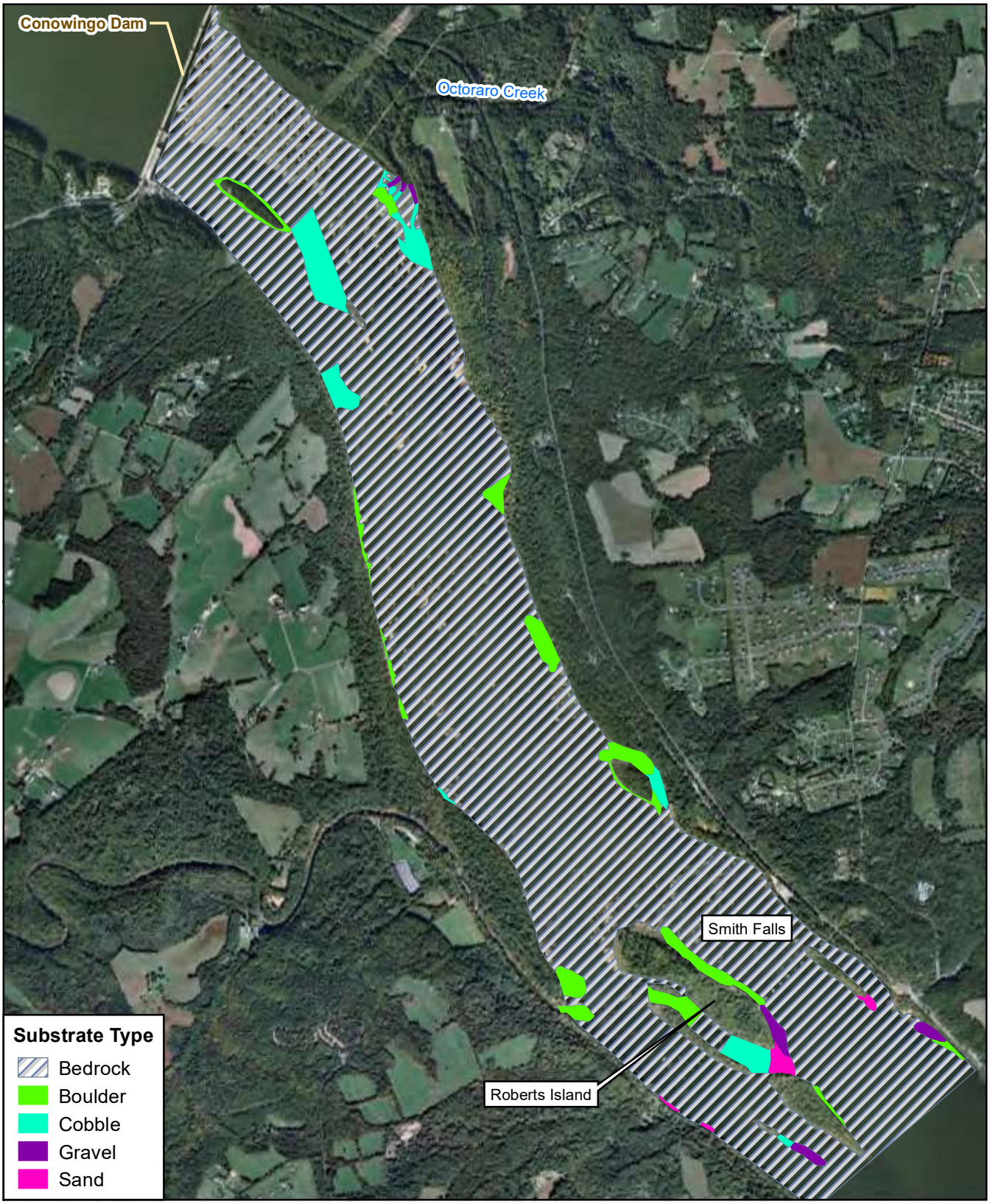
Exhibit B: Substrate Map Downstream of Conowingo Dam



EXELON GENERATION COMPANY, LLC

CONOWINGO HYDROELECTRIC PROJECT
FERC PROJECT NO. 405

Figure 3.3.4.1.4-7:
Littoral Substrate
Below Conowingo Dam

N

0 0.25 0.5 1
Miles

Path: X:\GISMaps\project_maps\draft_license_application_figures\conowingo\con_littoral_substrate_below_dam.mxd

Exhibit C: FERC Final EIS – Analyses Pertaining to Downstream Flow Releases at Conowingo Dam

Conowingo Project

Exelon proposes to continue to provide the minimum flow releases required under the current license, as follows:

- March 1 – March 31: 3,500 cfs or natural river flow (as measured at the upstream USGS Marietta gage No. 0157600), whichever is less;
- April 1 – April 30: 10,000 cfs or natural river flow, whichever is less;
- May 1 – May 31: 7,500 cfs or natural river flow, whichever is less;
- June 1 – September 14: 5,000 cfs or natural river flow, whichever is less;
- September 15 – November 30: 3,500 cfs or natural river flow, whichever is less; and
- December 1 – February 28: 3,500 cfs intermittent release (maximum 6 hours off followed by equal amount on).

Several commenters made statements regarding the adverse effects of flow releases from the project. Interior, in its section 10(j) recommendation, states that Exelon should finalize and implement a flow management plan and implement the flow recommendations of The Nature Conservancy or any more restrictive flows required by the Maryland certification (when that is issued), returning the river downstream of Conowingo to more natural conditions. The Nature Conservancy, in its comments filed January 31, 2014, recommended flows be released downstream of Conowingo dam sufficient to achieve the following objectives:

(1) restore persistent habitat and maximum weighted usable area (MWUA)[62] for the spawning, migration, and egg and larval development of diadromous and resident fish and for macroinvertebrates by providing at least 50 percent of historic maximum persistent habitat, minimize the amount of time that less than 25 percent of historic maximum persistent habitat is available, and target 70 percent of MWUA across species and life stages;

(2) increase the probability of lift entry for American shad, river herring, and American eel;

(3) eliminate stranding-related mortality of adult and juvenile fish;

(4) provide at least 50 percent of available mussel habitat with suitable shear stress;

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[62] Weighted usable area is an index of aquatic habitat that is calculated using the Instream Flow Incremental Methodology. It is meant to be used as a comparative statistic (for comparing alternative flow levels) and is not an absolute measure of habitat.

(5) increase the stability and suitability of basking and hibernation habitats for map turtles; and

(6) increase the suitability for SAV and emergent vegetation establishment.

The Nature Conservancy also recommends that the EIS evaluate two operational alternatives: (1) run-of-river operation (passage of the daily average flow measured at the USGS Marietta, Pennsylvania, gage plus any intervening flows that enter the river between the Marietta gage and Conowingo dam); and (2) the set of operational constraints that The Nature Conservancy identified as a potential approach for meeting its performance goals, listed above. We refer to this second alternative as the TNC Flow Regime. Table 3-19 summarizes the components of the TNC Flow Regime, and includes Exelon's proposed flow regime. The TNC Flow Regime includes restrictions on upramping and downramping. In addition, Pennsylvania FBC recommends that Exelon should reduce ramping-related stranding of migratory fish by (1) extending the retaining wall at the east end of the east fish lift or adding boulder fill in that area to prevent generation flow from flooding the spillway pool at high levels of generation, or (2) dredging a channel(s) from the spillway pool area to downstream areas to provide egress for stranded fishes.

Table 3-19. Summary of Exelon and TNC flow recommendations (Source: staff).

	Minimum flow (cfs)					
	Exelon	TNC		TNC	TNC Maximum	TNC Maximum
Month	Minimum	Minimum Q>50[b]	Minimum Q<50	Maximum flow (cfs)	Downramping (cfs/hr)	Upramping (cfs/hr)
January	0/3,500[a]	11,000		86,000 (January and February)	20,000 (January through June)	40,000 (year-round)
February	0/3,500	12,500				
March	3,500	30,000	24,000			
April	10,000	35,000	29,000			
May	7,500	25,500	17,500			
June	5,000	14,000	10,000			
July	5,000	8,500	5,500	65,000 (March through September)	10,000 if Q<30,000	
August	5,000	6,000	4,500		20,000 if Q<86,000 (July through September)	
September 1-14	5,000	5,500	3,500			

Month	Minimum flow (cfs) Exelon Minimum	TNC Minimum Q>50[b]	TNC Minimum Q<50	TNC Maximum flow (cfs)	TNC Maximum Downramping (cfs/hr)	TNC Maximum Upramping (cfs/hr)
September 15-30	3,500	5,500	3,500			
October	3,500	6,000		86,000 (October through December)	20,000 (October through December)	
November	3,500	11,000				
December	0/3,500	11,000				

[a] From December 1 through February 28, Exelon proposes an intermittent flow regime, with 6 hours of 3,500 cfs followed by 6 hours with no minimum flow.

[b] If natural inflow is greater than the median flow.

Under Exelon's proposed flows, minimum flow releases would range from as low as 0 cfs for up to 6 hours at a time from December through February, up to 10,000 cfs in April. Minimum flows under the TNC Flow Regime would vary monthly between 3,500 and 35,000 cfs, also depending on whether natural flows at the Marietta gage are greater than or less than the median flow (for the months of March through September). Under the TNC Flow Regime, the maximum generating flow would also be limited to 65,000 cfs from March through September,[63] upramping rates would be limited to 40,000 cfs per hour year-round, and downramping rates would be limited to 20,000 cfs per hour overall and 10,000 cfs from July through September if flows are less than 30,000 cfs.

Exelon, in its reply comments filed on March 18, 2014, states that (1) commenting entities have no basis for stating that the existing flow regime harms fish and wildlife, (2) stranding has not resulted in adverse effects on migratory and resident fishes, (3) a robust fishery occurs both upstream and downstream of the project, and (4) the recommended TNC Flow Regime would have a major adverse effect on project power production and economics.

[63] The Nature Conservancy recommendation does not specify what would occur if inflows to the Conowingo Project exceed 65,000 cfs, as often occurs during the spring months, but we assume that maximum generating flows could exceed 65,000 cfs so that flows in excess of 65,000 cfs are not spilled, up to the maximum generating capacity at Conowingo (86,000 cfs).

Our Analysis

The flow regime downstream of Conowingo dam has the potential to affect a wide range of resources, including SAV; the spawning, incubation, and rearing habitat for a variety of fish species; and habitat for freshwater mussels, other invertebrates, map turtles, and waterfowl nesting. Flow fluctuations associated with project operation also have the potential to cause fish mortality due to stranding and to affect upstream fish migration. We assess the effects of Exelon's proposed operation, alternative run-of-river operation, and the TNC Flow Regime on SAV, fish habitat, fish migration, fish stranding, freshwater mussels, and other aquatic invertebrates. Effects on map turtles and waterfowl nesting habitat are evaluated in section 3.3.3, *Terrestrial Resources*.

SAV. As we previously described, SAV downstream of Conowingo dam is limited to areas that have finer-grained substrate or are protected from high water velocities associated with high river flows. The highest concentrations of SAV are in the lower part of the river closer to the mouth of the river, where river levels are influenced by tidal flow from the Chesapeake Bay and velocities tend to be lower. Portions of the river closest to Conowingo dam have a steeper gradient, a substrate of primarily bedrock and boulder, and little SAV. SAV distribution downstream of the dam is more influenced by existing substrate conditions and natural high-flow events, which have the potential to scour and redistribute finer-grained substrate, than by normal day-to-day project operation. While normal peaking operations may result in discharges as high as 86,000 cfs (although USGS flow records indicate normal peaking operations seldom exceed a maximum discharge of 80,000 cfs and are often less than 70,000 cfs during the summer months), those typical peaking flows have less of an effect on scouring and substrate redistribution than typical annual high-flow events. For example, monthly 10-percent exceedance flows are greater than 80,000 cfs in 6 months of the year (December through May), while maximum recorded flows representing natural high-flow events exceed 200,000 cfs in all months of the year, reaching the range of 400,000 to 600,000 cfs in the spring months (table 3-6). These natural high-flow events that are several magnitudes greater than normal project discharges would logically have a greater effect on scour and substrate redistribution, and therefore affect the distribution of substrate suitable for SAV growth.

Fish Habitat. To assess the effects of proposed operation and alternative flow regimes on habitat for fish and invertebrates, Exelon conducted study 3.16, *Instream Flow Habitat below Conowingo Dam* (Gomez and Sullivan and Normandeau, 2012a). The study included evaluation of effects on different life stages of American shad, striped bass, shortnose sturgeon, smallmouth bass, several taxa of aquatic insects (mayflies, stoneflies, caddisflies), and freshwater mussels. The study used the River2D model to simulate hydraulic conditions in a study reach extending from Conowingo dam to the downstream end of Spencer Island (where tidal effects begin). The calibrated hydraulic model was used to simulate habitat conditions over a range of flows. In addition, the study included a habitat persistence analysis to assess the effects of peaking operation by determining the area of habitat that maintained a habitat rating of "good" (composite

habitat suitability index of 0.5) or higher over the flow range that represents a given peaking cycle.[64] The Nature Conservancy used the results of this persistence analysis to develop the TNC Flow Regime.

Implementing run-of-river operation downstream of Conowingo dam would benefit motile life stages of fish (fry, juveniles and adults) by reducing the frequency and magnitude of flow changes compared to current and proposed operation, which would improve habitat stability. This would help fish to seek out and remain in areas with suitable depth, velocity, and substrate conditions, without incurring the energetic costs associated with shifting locations to seek favorable habitat when flow conditions change. Implementing the TNC Flow Regime flows would reduce the magnitude and rate of flow changes compared to existing and proposed operation, which would provide an intermediate level of reduction in energetic costs. Reducing the magnitude and extent of flow fluctuations would provide even greater benefits to non-motile life stages of fish (eggs) and less motile organisms including fish larvae and aquatic invertebrates. Any increase in the production of aquatic insects would increase the amount of forage available and the potential production of juvenile fish.

Assessing the extent of the benefit that would be provided to any individual life stage and species of fish or invertebrate from reducing the magnitude of flow fluctuations is a complex challenge. Evaluating the effects on any individual life stage requires substantial assumptions to be made regarding the effects of changes in amount, quality, and location of the available habitat for that life stage, as well as the influence of the rate at which those attributes change. Any benefits that may occur to a particular species and life stage from a specific flow level, however, may not necessarily transfer to another species and life stage. These uncertainties are magnified during the assessment of potential population effects for a species, which requires incorporating effects on each life stage.

Focusing the instream flow evaluation on the spring migration and spawning period for American shad, river herring, and hickory shad may have the most merit. Enhancing flows during the spring period has the potential to provide increases in the production of these anadromous species without unnecessarily constraining project operation in other seasons, including the summer and winter seasons when there are

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[64] The persistence analysis was not a field evaluation of habitat availability at different flows, but instead was a modeling exercise in which polygon areas of quality habitat for one flow for a particular species life stage were overlaid with the quality habitat polygon area for the same species for another flow. The persistent habitat was the area of overlap between the quality habitat polygons, with the assumption that this overlap area had quality habitat for both flows (typically a minimum flow and a higher generation flow). This analysis was most useful for assessing effects on non-motile life stages.

peaks in the demand for power for cooling and heating. Substantial use of the river downstream of Conowingo dam for spawning by each of these species has been documented (Normandeau and Gomez and Sullivan, 2012b), and juveniles of these species (as well as gizzard shad) likely provide a seasonal source of forage for migratory striped bass. We provide a further analysis of effects on anadromous and resident species below under "*Alternative Flow Regime*."

Fish Migration. Although Exelon's studies have found little evidence of a relationship between operational flow releases and the ability of upstream migrating fish to find and enter the east and west fish lifts, it is possible that reducing the frequency and magnitude of flow fluctuations could improve fish passage efficiency.[65] The results of radio telemetry studies conducted in 2010 and 2012 (Normandeau and Gomez and Sullivan, 2011; 2012c) indicate that many American shad that migrate upstream to the tailrace area subsequently returned downriver within a few hours or days. While this type of movement has been observed on other rivers unaffected by fluctuating flow releases from hydroelectric projects, if the magnitude of operational flow changes was reduced during the migration season, it is possible that some of these fish would remain in the tailrace area for a longer period of time and increase their success in finding and entering one of the fish lifts. Additional discussion of effects on fish migration is included below under our discussion of upstream fish passage.

Fish Stranding. Reducing the magnitude and frequency of flow fluctuations could benefit fisheries resources by reducing the number of fish that are injured or killed when they are stranded as flow and water levels downstream of Conowingo dam are reduced. However, stranding studies conducted by Exelon (Normandeau and Gomez and Sullivan, 2012d) indicated that few fish are killed by stranding under existing operation, and about 90 percent of those killed were gizzard shad, carp, and catfish species (table 3-20). Although implementing run-of-river or TNC Flow Regime flows could reduce this source of mortality, the results of Exelon's stranding surveys indicate that the magnitude of this benefit would be minor. There would also be minimal benefit in implementing the Pennsylvania FBC recommendation to extend the retaining wall at the east end of the east fish lift, add boulder fill in that area to prevent generation flow from flooding the spillway pool at high levels of generation, or dredge a channel(s) from the spillway pool area to downstream areas to provide egress for stranded fishes.

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[65] However, the fish lifts at Conowingo were designed so that the tailrace entrances are functional at the full range of normal operations at the project, from minimum to maximum generation flows and up to a specific level of spillage.

Table 3-20. Total number of dead fish and crabs observed during 12 stranding surveys (4 in each season) conducted within and just downstream of the spillway reach below Conowingo dam (Source: Normandeau and Gomez and Sullivan, 2012d).

	Spring	Summer	Fall	Total	%
American eel		1		1	0.1
River herring	1			1	0.1
American shad	46			46	4.4
Gizzard shad	675	40	41	756	72.5
Carp	80	4	3	87	8.3
Minnows			1	1	0.1
Quillback	2			2	0.2
Shorthead redhorse	1		1	2	0.2
Catfishes	75	7	12	94	9.0
White perch		1		1	0.1
Striped bass	1			1	0.1
Banded killifish			6	6	0.6
Smallmouth bass		2	1	3	0.3
Largemouth bass		9	1	10	1.0
Sunfish		4		4	0.4
Walleye		1	4	5	0.5
Darters		3		3	0.3
Unidentified	19			19	1.8
Blue crabs		1		1	0.1

Freshwater Mussels. As part of study 3.16, *Instream Flow Habitat Below Conowingo Dam* (Gomez and Sullivan and Normandeau, 2012a), Exelon examined the effects of operational flows on mussel habitat by calculating and mapping shear stress at the river bed in the study area over a range of flows. Study results indicated that stations with the highest CPUEs tended to have relatively low shear stresses. At river discharge values of 3,500 cfs and 5,000 cfs, the highest CPUEs were associated with shear stress less than 40 to 60 dynes per square centimeter. Results of Exelon's instream flow study, as well as observations by field biologists, indicated that distribution and abundance of

mussels in the study reach were negatively affected by high shear stress brought about by high-flow events or peaking operations.

Currently, mussel distribution and abundance below Conowingo dam is limited by the shear stress that occurs during high-flow events. Areas that are sufficiently protected from high shear stress during these events would likely be sufficiently protected from shear stress during peaking operation. We conclude that reducing flow fluctuations by implementing run-of-river or the TNC Flow Regime operations would provide a limited benefit to mussels. Impacts on mussels due to high shear stress would still occur in the Susquehanna River during natural high-flow events.

Alternative Flow Regime. Our analysis of Exelon's instream flow study indicates that several combinations of minimum and maximum flows may improve habitat for some species and life stages, but those flow combinations are not consistent among the evaluation species. Certain flows may improve habitat for some species and life stages, while those same flows would reduce habitat for other species and life stages. Selection of an alternative flow regime would require balancing among the several target species and life stages (determine which life stage is most important for each time interval), as well as consideration of the effects of an alternative regime on project power production and economics. As we note above, Exelon's instream flow study included a habitat persistence analysis, and the report summarized that analysis by month, using only the species and life stage that may be present during that month and for which there is a relatively high amount of structural habitat available (relative to total wetted area).

Based on comments filed on the draft EIS that our representation of Exelon's habitat persistence analysis was incorrect, we provide further information and analysis of that habitat persistence analysis, which was a modeling exercise to attempt to illustrate the amount of potential quality habitat that would be available over the range of operating flows (from the minimum flow up to the maximum generation flow). While we agree that such an analysis is insightful in helping to understand the effects of flow fluctuations, "persistent habitat" may be difficult to simulate under "real world" conditions using flow pairs, because habitat is constantly changing in the lower Susquehanna River. Under typical peaking operations at Conowingo, flow releases from the dam may be at the licensed minimum flow for some hours per day, at a mid-range peaking flow for part of the day, and at a higher peaking flow (up to the maximum hydraulic capacity of the project, but not always[66]) for some hours per day. The amount of time that project

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[66] For example, while the Conowingo Project may occasionally generate up to its maximum hydraulic capacity of 86,000 cfs, based on flow data from the Conowingo USGS gage no. 01578310, it more commonly generates up to a maximum of about 78,000 to 80,000 cfs, because that is the most efficient gate setting for full generation at the project. During the summer, low-flow months, discharges from the project seldom reach greater than 70,000 cfs during peaking operations.

releases are either at the minimum flow or at a higher generation flow varies on a daily, weekly, or seasonal basis depending on natural river flow, electrical demand, or other constraints on operation.

In comparing flow pairs for the habitat persistence analysis (such as a proposed minimum flow and a maximum generation flow), those flow pairs would not be constant throughout the entire period for a specific life stage (such as for shad spawning). Flow releases would be variable throughout a life stage period, for the reasons discussed above, especially a life stage that may have a duration of residence downstream of the project covering 2 to 3 months.[67] To better represent the actual flow ranges that now occur downstream of Conowingo dam on a monthly and seasonal basis, we examined the flow record from the Conowingo USGS gage no. 01578310 (table 3-6). The 90 percent exceedance flow (a flow that is exceeded 90 percent of the time, based on the flow record) would represent the lower end of the flow range that would typically occur under normal project operations. The 10 percent exceedance flow (the flow that is exceeded 10 percent of the time) would represent the higher end of the flow range that would normally occur. While these flow metrics are based on daily average flows measured at the Conowingo gage, those daily average flows are reflective of the hourly flows occurring throughout the day. As an alternative to an analysis of flow pairs assuming that a specific minimum and maximum flow occurs throughout a life stage period (regardless of river flow conditions), we assessed persistent habitat using the 90 percent and 10 percent exceedance flows, by month, to represent actual average flow conditions currently occurring downstream of Conowingo dam.

Table 3-21 summarizes our analysis of flow pairs using The Nature Conservancy-recommended minimum and maximum flows, compared to existing flow conditions downstream of Conowingo dam using the monthly 90 percent exceedance flows as the minimum flow, and the 10 percent exceedance flow as the maximum generation flow.[68]

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[67] For example, river flows in April and early May may be too high for the project to be able to reduce generation to as low as its licensed minimum flow, and generation during those months may more resemble run-of-river operations where generation and flow releases would remain relatively constant or would not vary substantially over a 24-hour period. Lower flows in June may allow the project to reduce generation to the minimum flow, and allow a store-and-release mode of operation. Lower summer river flows, however, may also not allow the project to reach maximum generation levels in all days, weeks, or months, as illustrated by USGS gaging data.

[68] Most of the life stages in table 3-21 occur in the spring and early-summer period, although we include the deep-slow habitat guild that includes a total of 13 fish species plus macroinvertebrates that have life stages present year-round. If the 10 percent exceedance flow for a month equals or exceeds the maximum generation flow of 86,000 cfs, we use 86,000 cfs as the maximum generation flow.

We used the habitat persistence tables in appendix G of Gomez and Sullivan and Normandeau (2012a) as the data source for persistent habitat, and use the flow pairs in those tables that are as closely matched as possible to the flow levels analyzed herein. This analysis indicates that the amount of persistent habitat is similar and the ranges in persistent habitat actually overlap for some life stages between the two flow scenarios. While the TNC Flow Regime generally shows a higher range of percent of maximum persistent habitat, the range is higher for smallmouth bass under the existing flow scenario. It is not known, however, whether higher persistent habitat would necessarily result in significant enhancements for these life stages because there is no information to indicate the current "carrying capacity" of habitat in the lower Susquehanna River.[69] Table 3-21 also includes data on percent of MWUA that would occur under run-of-river operation, based on the mean monthly flows at the Conowingo gage (see table 3-6). While MWUA is not directly comparable to persistent habitat, MWUA under a run-of-river alternative would essentially be "persistent" because flow releases would not vary substantially during the day; Exelon would be required to match project discharges to the daily average flow measured at the USGS Marietta, Pennsylvania, gage, plus any intervening flows that enter the river between the Marietta gage and Conowingo dam. These data indicate that run-of-river operation may have the highest biological benefits, but there are other potential issues with run-of-river operations that we discuss following the table.

Table 3-21. Summary of habitat persistence analysis, comparing the TNC flow regime to existing flow conditions, along with percent of MWUA for run-of-river operation (Source: Gomez and Sullivan and Normandeau, 2012a; staff).

Species/Life Stage	Minimum Flow Scenario (% of maximum persistent habitat)		Run-of-River Operation – % of MWUA (mean monthly flows)
	TNC	Existing Conditions (90% exceedance as min. flow/10% exceedance as max. flow)	
American shad spawning	9 to 74	12 to 48	73 to 100
American shad fry	13 to 56	23 to 37	93 to 98
Shortnose sturgeon spawning	59 to 83	56 to 66	93 to 100

[69] In addition, for American shad, the overall objective of the restoration plan is to maximize the upstream movement of shad to upriver spawning areas, so the contribution of habitat in the lower river to the overall restoration program may be less important than upriver habitat.

Species/Life Stage	Minimum Flow Scenario (% of maximum persistent habitat)		Run-of-River Operation – % of MWUA (mean monthly flows)
	TNC	Existing Conditions (90% exceedance as min. flow/10% exceedance as max. flow)	
Shortnose sturgeon fry	3 to 40	7 to 27	94 to 99
Striped bass spawning	16 to 88	18 to 71	89 to 97
Striped bass fry	1 to 88	2 to 69	64 to 96
Smallmouth bass spawning	5 to 6	3 to 7	37
Smallmouth bass fry	7 to 8	8 to 13	29 to 34
Deep-slow habitat guild	4 to 10	5 to 13	16 to 59

Note: Range in percentages reflects the ranges in minimum flows over the 2- to 3-month periods for most of these life stages, and a 12-month period for the deep-slow guild. Also, the TNC Flow Regime includes two different minimum flows for several months, depending on inflow. Maximum flow for the TNC Flow Regime ranges from 65,000 to 86,000 cfs, depending on month (see table 3-19).

In response to comments on the draft EIS, we also revisited our analysis of the range of flows that would provide The Nature Conservancy target of 70 percent of MWUA by month. Table 5.1-1 of Gomez and Sullivan and Normandeau (2012a) shows the flow ranges that provide a range of percentages of MWUA for several species and life stages.[70] Table 3-22 summarizes the flow ranges that provide 70 percent of MWUA for evaluation species and life stages, as reported in table 5.1-1 of the instream flow report. Table 3-22 also shows the normal range of flows during Exelon's existing and proposed operation, and the median unregulated flow. This table shows the evaluation fish species

[70] Gomez and Sullivan and Normandeau (2012a) state that some flow ranges were limited by the lowest or highest production run flow (modeled flows ranged from 2,000 to 86,000 cfs), thus the true flow range providing this habitat may fall outside of the modeled flows. However, flows less than 2,000 cfs would not be associated with project generation and would essentially be leakage, while flows greater than 86,000 cfs would mean the project is spilling and flows would be beyond the control of Exelon.

selected by the Exelon/agency study team, as well as the deep-slow habitat guild. This guild represents 13 fish species plus macroinvertebrates that have life stages present year-round. Table 3-22 also highlights the "key" species (American shad and striped bass), if the management objective is to focus on key species, with lower priorities for other species. Table 3-22 does not show shortnose sturgeon as a key species. While shortnose sturgeon is a federally listed endangered species, because only occasional sturgeon have been documented in the lower Susquehanna River, the river probably does not support a spawning population. Because the project (or any hydroelectric project) typically provides only one minimum flow on any given day (although the minimum flow may be varied over the season, as now occurs), some species or life stages may benefit from a specific minimum flow, while others may not benefit from the same flow. Thus, decisions would need to be made as to what the key management species are.

Table 3-22 indicates that, overall, the current and proposed Exelon operation generally brackets the range of flows that would provide 70 percent of MWUA for all the evaluation species combined. From December through March, when Exelon reduces to zero minimum flow for 6-hour intervals, however, the MWUA criterion would not be met for those 6-hour intervals. Eliminating the zero minimum flow periods during those months would provide some benefits to aquatic habitat, and Exelon would likely have no trouble in meeting a continuous flow requirement (of 3,500 cfs), because median flows during those months are higher than most other months of the year, except April and May. For the remainder of the year, Exelon's minimum flows are higher than the low end of the 70 percent MWUA criterion from April through November.

However, if only the key species are considered as shown in table 3-22, Exelon's minimum flows are lower than the low end of the 70 percent MWUA criterion from January through June. From January through March, the low end of the 70 percent MWUA criterion would be 21,450 cfs, based on the adult striped bass life stage. This compares to the Exelon minimum flow of an intermittent 3,500 cfs in January and February and a continuous 3,500 cfs in March. However, it is unlikely that adult striped bass occur in the Susquehanna River during the winter months, as striped bass are believed to overwinter in deeper channels within the Chesapeake Bay or in coastal areas near Virginia/North Carolina. Crance (1984) also reports that preferred water temperatures for adult striped bass range from about 50 to 85°F, indicating that adult striped bass would avoid the cold overwinter water temperatures (which reach the 30°s F). In April, Exelon provides a minimum flow of 10,000 cfs (compared to the 70 percent minimum criterion of 13,861 cfs, for the key species), but because April is the highest flow month of the year, Exelon overall maintains higher average releases during

April, and minimum releases may on average exceed the licensed minimum flow.[71] In May and June, Exelon's minimum flow is lower than the 70 percent minimum criterion for the key species designated in table 3-22. In June, at the end of the spawning period for shad and striped bass, Exelon currently reduces its minimum flow from 7,500 to 5,000 cfs. If that reduction occurs on June 1 (as it does currently), that could adversely affect spawning and early-fry development for later spawning shad and striped bass by reducing the area of suitable spawning and incubation habitat during the period of the day when only the minimum flow is provided. Areas that would be available for spawning and incubation during higher generation periods of the day may not be available or may be dewatered at a minimum flow of 5,000 cfs. This indicates that there would be justification for increasing the minimum flow in the month of June. Extending the 7,500-cfs minimum flow until mid-June would provide additional protection to spawning and incubation habitat. There would be no need to extend this minimum flow into late June, as spawning and early-fry development would have ended by then. For the remainder of the year, Exelon minimum flows are higher than the low end of the 70 percent MWUA criterion for the key species.

Maximum flows have also been a concern at Conowingo, and The Nature Conservancy recommended that maximum flows be capped at 65,000 cfs from March through September.[72] The MWUA analysis, however, does not support such a restriction, as some of the key life stages in all months still maintain the 70 percent minimum criterion at the full station discharge of 86,000 cfs. While 86,000 cfs is the high end of the flow range that was limited by the production run flow, according to Gomez and Sullivan and Normandeau (2012a), that analysis still indicates that there is little basis for a 65,000-cfs maximum flow cap. In addition, as we describe above, a maximum flow of 86,000 cfs may seldom occur in reality. Based on our review of flow data from the Conowingo USGS gage, maximum generation usually is in the range of 78,000 to 80,000 cfs, because that is the most efficient gate setting for full generation at the project. During the summer low-flow months, maximum discharges from the project seldom reach greater than 70,000 cfs during peaking operations, close to the maximum releases recommended by The Nature Conservancy. Figure 3-4 shows typical operation in September 2013, when the maximum release exceeded 70,000 cfs on only 1 day. For the remainder of the days, maximum releases were generally in the range of 40,000 to 60,000 cfs. While this figure is only a small snapshot of operations at Conowingo, review of the

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[71] The 90 percent exceedance flow in April at the Conowingo USGS gage is 29,690 cfs (see table 3-6). Because of the higher April flows, Exelon may in fact be unable to reduce project releases to its licensed minimum flow.

[72] However, as we state above, we assume that this is contingent upon river flows allowing station discharges to be capped at 65,000 cfs.

Conowingo USGS gage data indicates that this is typical operation during the summer and fall months.

The analysis of instream flows downstream of Conowingo is complex, where certain species and life stages may have narrower or higher flow bands where MWUA is provided, and results depend on which evaluation species and life stages are selected as being most important. However, Exelon's studies have provided substantial information on the effects of flow releases from Conowingo. Based on this information, Exelon's current flow regime is generally adequate for protection of aquatic resources downstream of the project, although some adjustments to these flows as we discussed (eliminating periods of zero minimum flow in December through February, and increasing the minimum flow to 7,500 cfs in the first half of June) could provide additional protection to downstream aquatic habitat.

The Nature Conservancy recommends that run-of-river operation be considered at Conowingo. We previously discussed potential benefits of such operation (see table 3-21), but strict run-of-river operation may not be technically feasible at Conowingo. If any run-of-river operation is tied to inflow at the Marietta gage (plus inflow downstream of Marietta), Exelon may not be able to duplicate Marietta flows, because of the operation of the upstream Safe Harbor and Holtwood Projects. Safe Harbor, with a total hydraulic capacity of 110,000 cfs, generally controls lower Susquehanna River flows at natural inflow less than its hydraulic capacity. Safe Harbor is a peaking station with no required minimum flow releases, so downstream flows may fluctuate from zero up to full capacity on a daily basis. The Holtwood Project is immediately downstream of Safe Harbor and also controls the river up to its current newly expanded capacity of about 61,000 cfs. If Conowingo was to attempt to operate so that it passes on a continuous basis the daily average flow at the Marietta gage, plus inflow downstream of Marietta, as recommended by The Nature Conservancy, it would likely be an operational challenge.[73] Exelon's operation would likely be in a constant state of flux because actual inflow to Conowingo Pond would be fluctuating over a wide range (as a result of upstream operation at Safe Harbor and Holtwood), potentially causing major fluctuations in Conowingo Pond as Exelon attempted to match Conowingo releases to the Marietta flows (plus other inflow), as well as operate the Muddy Run Project. In addition, not all of the tributaries between Marietta and Conowingo are gaged, so Exelon would not have reliable inflow data for all of the tributaries.

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[73] The Nature Conservancy recommends providing run-of-river flows on an hourly basis.

Table 3-22. Summary of Exelon's habitat persistence analysis by month, showing the range of flows (cfs) providing 70 percent of the MWUA for evaluation species and life stages likely to occur during each month,[74] compared to Exelon's current operation and median unregulated flow. Shaded cells indicate the "key" evaluation species (Source: Gomez and Sullivan and Normandeau, 2012a; staff).

Species/ life stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Shad spawning	-	-	-	14,472 to 82,757	14,472 to 82,757	14,472 to 82,757	-	-	-	-	-	-
Shad fry	-	-	-	-	7,744 to 67,028	7,744 to 67,028	7,744 to 67,028	-	-	-	-	-
Shad juvenile	-	-	-	-	-	-	2,000 to 52,641	2,000 to 52,641	2,000 to 52,641	2,000 to 52,641	2,000 to 52,641	-
Shad adult	-	-	-	13,861 to 86,000	13,861 to 86,000	13,861 to 86,000	-	-	-	-	-	-
SNS spawning	-	-	-	13,008 to 86,000	13,008 to 86,000	-	-	-	-	-	-	-
SNS fry	-	-	-	-	8,546 to 86,000	8,546 to 86,000	8,546 to 86,000	-	-	-	-	-

[74] This table uses the evaluation species and life stages, and the timing of those life stages, as presented in Gomez and Sullivan and Normandeau (2012a).

Species/ life stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SNS juvenile	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000
SNS adult	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000	6,228 to 86,000
Striped bass spawning	-	-	-	20,450 to 86,000	20,450 to 86,000	20,450 to 86,000	-	-	-	-	-	-
Striped bass fry	-	-	-	22,977 to 86,000	22,977 to 86,000	22,977 to 86,000	22,977 to 86,000	-	-	-	-	-
Striped bass juvenile	-	-	-	-	-	7,961 to 86,000	7,961 to 86,000	7,961 to 86,000	7,961 to 86,000	7,961 to 86,000	7,961 to 86,000	7,961 to 86,000
Striped bass adult	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000
SMB spawning	-	-	-	-	2,000 to 13,430	2,000 to 13,430	-	-	-	-	-	-
SMB fry	-	-	-	-	-	2,000 to 3,778	2,000 to 3,778	-	-	-	-	-
SMB juvenile	-	-	-	-	-	-	-	2,000 to 18,051	2,000 to 18,051	2,000 to 18,051	2,000 to 18,051	2,000 to 18,051

Species/ life stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SMB adult	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491	3,127 to 44,491
Deep-slow guild	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565	2,000 to 12,565
Flow range for 70% MWUA (all species combined)	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000
Flow range for 70% MWUA (key species)	21,450 to 86,000	21,450 to 86,000	21,450 to 86,000	13,861 to 86,000	13,861 to 86,000	13,861 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	2,000 to 86,000	7,961 to 86,000
Current Exelon operation	0/3,500 to 86,000	0/3,500 to 86,000	3,500 to 86,000	10,000 to 86,000	7,500 to 86,000	5,000 to 86,000	5,000 to 86,000	5,000 to 86,000	5,000/3,500 to 86,000	3,500 to 86,000	3,500 to 86,000	0/3,500 to 86,000
Median unregulated flow	27,732	32,617	61,744	63,752	38,768	20,661	13,045	9,201	7,995	9,845	22,927	30,672

Note: SNS = shortnose sturgeon; SMB = smallmouth bass.

Exhibit D: Exelon's January 31, 2020 Response to Comments

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

EXELON GENERATION COMPANY, LLC	)	**PROJECT NOS. P-405-106**
	)	**P-405-121**

REPLY COMMENTS OF EXELON GENERATION COMPANY, LLC

Pursuant to Rule 602(f) of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission (FERC or the Commission),[1] and the Commission's November 13, 2019 "Notice Extending Comment Period For Settlement Agreement," Exelon Generation Company, LLC (Exelon), licensee of the Conowingo Hydroelectric Project (Conowingo or the Project), hereby submits its Reply Comments to the Comments submitted by The Nature Conservancy (TNC),[2] the Local Government Members of the Clean Chesapeake Coalition (CCC),[3] Waterkeepers Chesapeake and Lower Susquehanna Riverkeeper (Riverkeepers),[4] the Chesapeake Bay Foundation, Inc. (CBF),[5] the U.S. Department of the Interior (DOI),[6] the Susquehanna River Basin Commission (SRBC),[7] the Pennsylvania Department of Environmental Protection

[1] 18 C.F.R. § 385.602(f) (2019).
[2] The Nature Conservancy's Comments on Offer of Settlement, Docket No. P-405-106 (filed Jan. 17, 2020) (TNC Comments).
[3] 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, Docket Nos. P-405-106 and P-405-121 (filed Jan. 17, 2020) (CCC Comments).
[4] Comments on Proposed Settlement Agreement, Docket Nos. 405-106 and 405-121 (filed Jan. 17, 2020) (Riverkeepers Comments).
[5] Chesapeake Bay Foundation, Inc.'s Comments on Offer of Settlement, Docket Nos. P-405-106 and P-405-121 (filed Jan. 17, 2020) (CBF Comments).
[6] Comments of the U.S. Department of the Interior on the Joint Offer of Settlement between the Maryland Department of Environment and Exelon Generation Corporation, Docket Nos. 405-106 and 405-121 (filed Jan. 17, 2020) (DOI Comments).
[7] Comments of the Susquehanna River Basin Commission, Docket Nos. 405-106 and 405-121 (filed Jan. 17, 2020) (SRBC Comments).

(PADEP),[8] the Pennsylvania Fish and Boat Commission (PFBC),[9] the Chesapeake Bay Program's Scientific and Technical Advisory Committee (STAC),[10] the County Council of Cecil County, Maryland,[11] the Corsica River Conservancy,[12] and 605 individuals who signed a petition in response to the Joint Offer of Settlement and Explanatory Statement[13] (Joint Offer of Settlement)[14] filed by Exelon and the Maryland Department of the Environment (MDE) on October 29, 2019 in the above-captioned docket.

I. EXECUTIVE SUMMARY

The Commission should approve the Joint Offer of Settlement and incorporate the licensing proposal before the Commission—which includes Exelon's initial licensing application, the recommendations included in FERC Staff's alternative,[15] the fish-passage measures in DOI's Modified Prescription for Fishways, and the Proposed License Articles in the Joint Offer of

[8] Comments of the Pennsylvania Department of Environmental Protection, Docket Nos. 405-106 and 405-121 (filed Jan. 17, 2020) (PADEP Comments).
[9] Comments of Pennsylvania Fish & Boat Commission on the Joint Offer of Settlement and Explanatory Statement of Exelon Generation Company, LLC and the Maryland Department of the Environment, Docket No. P-405-106 (filed Jan. 17, 2020) (PFBC Comments).
[10] Statement on behalf of the Chesapeake Bay Program Scientific and Technical Advisory Committee, Docket No. P-405-106 (filed Jan. 17, 2020) (STAC Comments).
[11] Comments of Cecil County Maryland, Docket No. P-405-106 (filed Jan. 17, 2020).
[12] Comments of Corsica River Conservancy, Docket No. P-405-106 (filed Jan. 27, 2020).
[13] Letter from Les Eastman et al. to FERC, Docket No. P-405-106 (filed Jan. 17, 2020).
[14] Joint Offer of Settlement and Explanatory Statement of Exelon Generation Company, LLC and the Maryland Department of the Environment, Docket Nos. P-405-106 and P-405-121 (filed Oct. 29, 2019). The Joint Offer of Settlement is composed of three parts: (1) the Joint Offer of Settlement and Explanatory Statement; (2) the Settlement Agreement (Agreement); and (3) the Modified Prescription, which is provided as an attachment to the Settlement Agreement. Except where otherwise indicated, the term "Joint Offer of Settlement" or "Proposed License Articles," as used in these Reply Comments, should be read to incorporate the more recent agreement reached among Exelon, MDE, and the U.S. Department of the Interior concerning fish-passage and invasive-species issues. *See infra* Part IV-I.
[15] Exelon accepts the recommendations in FERC Staff's recommended alternative, except that Exelon continues to oppose FERC Staff's recommendation that Exelon "provide angler access to the [Conowingo] catwalk." FERC, Office of Energy Projects, *Final Multi-Project Environmental Impact Statement for Hydropower Licenses: Susquehanna River Hydroelectric Projects* 413 (Mar. 11, 2015) (FEIS-0255F) [hereinafter "FEIS"]. The basis for Exelon's opposition is set forth in numerous filings in this Docket, including pages 73 to 77 of the Reply Comments of Exelon Generation Company, LLC, filed on March 18, 2014.

Settlement (together, the Licensing Proposal)—without modification or expansion, into a new 50-year license for the Conowingo Project.

The Licensing Proposal and the Joint Offer of Settlement are the product of more than a decade of environmental and scientific studies, community outreach, and consultation and negotiation with federal and state resource agencies and other stakeholders. The Joint Offer of Settlement has received broad support from DOI, the United States Fish and Wildlife Service, the Maryland Department of Natural Resources (MDNR), PADEP, PFBC, and SRBC. The breadth of this support reflects favorably on the balance that Exelon and MDE have struck between the need to maintain the Conowingo Project as a source of low-cost, reliable, and renewable power and the settlement's extensive protection, mitigation, and enhancement (PM&E) measures that will protect and enhance ecological, recreational, and water-quality resources.

These PM&E measures are designed specifically to address the Project impacts identified in Exelon's relicensing studies and analyzed in the March 2015 *Final Multi-Project Environmental Impact Statement for Hydropower Licenses* (the FEIS) (*see* Part IV-A).[16] They include increased minimum flows and restrictions on ramping and maximum flows to improve aquatic habitat and reduce fish stranding downstream from Conowingo Dam; substantial investments to improve Exelon's fish-passage facilities and facilitate trap and truck of American shad, river herring, and American eel; measures to improve water quality and protect sensitive plant and animal species; and measures to address trash and debris. These environmental benefits make clear that the settlement is in the public interest, and Commenters offer no reasoned basis for rejecting the Joint Offer of Settlement.

[16] FEIS, *supra* note 15.

Commenters, in fact, have raised only a handful of issues based on arguments that either lack an evidentiary basis or are inconsistent with federal law and applicable precedent. TNC and Riverkeepers, for example, assert that the Joint Offer of Settlement's flow regime does not adequately address impacts to aquatic habitat and fish migration. This claim is undermined by Exelon's relicensing studies and the flow analysis in the FEIS, and discounts the additional ecological benefits that will result from Exelon's proposed enhancements to FERC Staff's recommended flow regime (*see* Part IV-D). CBF and others also erroneously assert that the "scouring" of pollutants from the Conowingo Reservoir during storms will grievously injure the Chesapeake Bay, when the record evidence demonstrates that the Dam blocks pollutants that originate from upstream sources (mostly in Pennsylvania) and thus benefits the Bay's water quality (*see* Part IV-E). Riverkeepers also lack a reasoned basis for imposing on Exelon greater trash and debris removal measures than those recommended in the FEIS (*see* Part IV-J).

Other arguments are unsupported by the law. CCC's arguments for direct payments from Exelon and a license term of less than 50 years, and DOI's assertion that the Commission should preserve recreational access to lands that may be removed from the Project boundary, conflict with the Federal Power Act (FPA) and Commission policy (*see* Parts IV-G, IV-H, and IV-K). Riverkeepers' challenge to MDE's conditional waiver conflicts with the plain language of Section 401 of the Clean Water Act (CWA) (*see* Part IV-C-1), and their suggestion that Maryland had not previously waived its Section 401 authority is inconsistent with *Hoopa Valley Tribe*[17] and recent FERC precedent (*see* Part IV-C-2). Further, TNC's and CCC's claims that the Joint Offer of Settlement unduly restricts MDE's ability to seek reopeners ignores the Commission's power to

[17] *Hoopa Valley Tribe v. FERC*, 913 F.3d 1099, 1102–05 (D.C. Cir. 2019), *cert. denied sub nom. Cal. Trout v. Hoopa Valley Tribe*, --- S. Ct. ---- (2019), 2019 WL 6689876 (Mem.).

address future Project-related issues pursuant to its reservation of authority under the FPA (*see* Part IV-F).

In addition to the Licensing Proposal, which addresses only Project-related impacts, the Joint Offer of Settlement includes several off-license funding commitments in which Exelon will support regional initiatives to address impacts to water quality in the Susquehanna River and the Chesapeake Bay from sediment and nutrients introduced upstream from the Conowingo Dam (*see* Part IV-B). While not subject to the Commission's jurisdiction, and filed with FERC on an informational basis only, these off-license commitments are further evidence of the benefits that will accrue to the region once a new license is issued.

The Joint Offer of Settlement negotiated between MDE and Exelon represents the last piece of the relicensing puzzle. Exelon's decade-long relicensing process has produced numerous studies, a comprehensive environmental impact analysis prepared by FERC Staff, and a robust licensing proposal supplemented by settlements with DOI and MDE. With the substantial record created over the last ten years, there is no compelling reason for additional information, technical conferences, or further proceedings (*see* Part IV-L). For the benefit of all who have participated in the Conowingo relicensing, and more importantly for the environmental resources affected by the Project, Exelon must now move forward and implement the PM&E measures proposed to be included in the license. Exelon, therefore, respectfully requests that the Commission approve the Joint Offer of Settlement and issue a new 50-year license containing the articles in Exelon's Licensing Proposal.

II. BACKGROUND

A. Evolution of Exelon's Licensing Proposal

1. The ILP and FEIS

On March 12, 2009, Exelon, as licensee of the Conowingo Hydroelectric Project, filed its Pre-Application Document (PAD) and Notification of Intent (NOI) with the Commission.[18] As required by the Commission's regulations, the PAD provided an overview of the Project and comprehensively summarized existing data and studies relevant to the Project and the Project's potential impacts to the surrounding environment. The PAD was circulated widely to federal and state resource agencies, Indian tribes, local governments, and members of the public. The filing of the NOI and PAD commenced the Commission's Integrated Licensing Process (ILP), which establishes the procedures and milestones for developing and filing an application for a new hydroelectric license.

As required by the ILP, Exelon engaged in extensive stakeholder outreach, developed study plans in consultation with interested parties, conducted 32 studies and distributed them for stakeholder review and comment, and circulated a preliminary licensing proposal for stakeholder comment. Exelon's pre-filing licensing activities culminated in the filing of a license application with the Commission on August 31, 2012.[19] Exelon's licensing application included a number of PM&E measures to address Project impacts that had been identified and analyzed in Exelon's relicensing studies. These PM&E measures included minimum flow releases, minimum elevation pond level requirements to enhance recreational use in the Conowingo Reservoir (also known as

[18] Conowingo Hydroelectric Project, FERC Project No. 405, Pre-Application Document, Docket No. P-405-087 (filed Mar. 12, 2009); Conowingo Hydroelectric Project, FERC Project No. 405; Notification of Intent to File an Application for New License and Request for Designation as Non-Federal Representative, Docket No. P-405-087 (filed Mar. 12, 2009).

[19] Application for New License for Major Water Power Project—Existing Dam, Docket No. P-405-106 (filed Aug. 31, 2012).

the Conowingo Pond), debris management, continued operation of the East and West Fish Lifts, and continued operation of turbine venting systems to enhance dissolved-oxygen (DO) levels around the Project.[20]

Exelon also proposed implementing a Sediment Management Plan to minimize the introduction of sediment into the Susquehanna River from Project lands, conducting bathymetric surveys of Conowingo Pond to monitor sediment transport and depositional patterns from sediment introduced upstream from the Project, implementing measures to extend the useful life of the East Fish Lift, improving and enhancing Project recreational facilities, constructing a permanent trap-and-transport facility to facilitate the upstream passage of American eel and, after 2030, constructing volitional eel-passage facilities. To protect Bald Eagle habitat on Project lands, Exelon proposed implementing measures set forth in the Project's Bald Eagle Management Plan.

In reviewing Exelon's licensing proposal in the FEIS, FERC Staff assessed the Project's impacts on threatened and endangered species; geology and soils; socioeconomics; land use; and water, terrestrial, recreation, cultural, and aesthetic resources. After comprehensively analyzing the Project's potential impacts, as well as the PM&E measures proposed by Exelon and other stakeholders, FERC Staff recommended that Exelon's licensing proposal be adopted by the Commission subject to certain modifications and additions.[21] FERC Staff's recommended alternative included enhanced minimum flows; periodic dredging of recreational areas; improvements to the Project's fish-passage facilities and associated attraction flows; measures designed to support northern map turtles, bog turtles, and waterfowl; and modifications to Exelon's recreation, Bald Eagle, sediment, and historic-preservation management plans.[22]

[20] Dissolved-oxygen levels generally measure how much oxygen is available to living organisms in water.
[21] FEIS at 410.
[22] *Id.* at 411–29.

2. The DOI Settlement and Modified Prescription

In parallel with the ILP and throughout the relicensing process, Exelon actively engaged with stakeholders to achieve a negotiated resolution of relicensing issues. These efforts resulted in a settlement with DOI (the DOI Settlement) regarding the terms of DOI's fishway prescription issued under Section 18 of the Federal Power Act (the FPA). As described more fully in the DOI Settlement filed in this proceeding on May 12, 2016,[23] and DOI's Modified Prescription for Fishways (the Modified Prescription) dated June 7, 2016,[24] Exelon will make substantial investments over the term of the new license to improve fish passage for American eel, river herring, American shad, and resident fish.

In addition to implementing the trap-and-transport program for migratory fish, Exelon will increase attraction flow for the East Fish Lift, replace the existing 3,300-gallon hopper at the East Fish Lift with two 6,500-gallon hoppers, modify the East and West Fish Lifts, and construct zone-of-passage structures to facilitate passage of American shad and river herring.[25] The Modified Prescription provides for efficiency testing throughout the license term and includes adaptive-management provisions that require Exelon to make additional investments in fish passage as necessary.

The Settlement also requires Exelon to develop and implement a Fishway Operation and Maintenance Plan (FOMP) and a Fishway Effectiveness Monitoring Plan (FEMP).[26] The FOMP will include, among other things, fish-lift operational requirements, schedules for fishway testing and maintenance, and detailed logistical and design plans to implement Exelon's trap-and-

[23] Conowingo Hydroelectric Project Relicensing Offer of Settlement and Explanatory Statement, Docket No. P-405-106 (filed May 12, 2016).
[24] Conowingo Hydroelectric Project, Federal Energy Regulatory Commission (FERC No. P-405) Modified Prescription for Fishways, Docket No. P-405-000 (dated June 7, 2016, received by Commission June 8, 2016).
[25] Offer at 4.
[26] *Id.* at 6–9.

transport programs.[27] The FEMP establishes the effectiveness monitoring and testing for American eel passage.[28] Exelon is required to brief the Susquehanna River Anadromous Fish Restoration Cooperative (SRAFRC) annually on implementation of the FOMP and the FEMP.[29]

3. The Joint Offer of Settlement

a. License Commitments

Following the DOI Settlement, Exelon and MDE reinitiated settlement discussions to resolve water-quality-related issues associated with the Project's operation during the new license term. As described more fully below in Section II-B-2, the two parties ultimately resolved their differences through negotiation and compromise as reflected in the Joint Offer of Settlement. The agreed-upon measures reflected in the Joint Offer of Settlement will substantially augment the measures that Exelon proposed in its initial license application and that FERC Staff added in developing the FEIS, as well as the measures that DOI and Exelon agreed to in the DOI Settlement.

The flow regime in the Joint Offer of Settlement substantially enhances both the flows initially proposed by Exelon in the license application and the flows recommended by FERC Staff in the FEIS. Similarly, the eel-passage measures in the Joint Offer of Settlement further enhance eel passage by extending eel fishway operations on the west side of the Project by about two months each year beyond what DOI prescribed. Further, Exelon has agreed to take measures to minimize the risk that invasive species will be passed upstream of the Conowingo Dam via the East Fish Lift.[30]

[27] *Id.* at 6–8.
[28] *Id.* at 8–9.
[29] *Id.*
[30] As discussed *infra* Part IV-I, the Joint Offer of Settlement's Proposed Licensing Article addressing invasive species has been, by agreement among MDE, Exelon, and DOI, superseded by the proposed invasive-species license article in the DOI Comments. *See* DOI Comments, Attachment 1.

Additionally, Exelon will take further measures to address trash and debris introduced upstream from the Conowingo Dam that may accumulate at the Project beyond the measures recommended in the FEIS; monitor for fish kills as an indicator of dissolved-oxygen deficiencies in the tailrace; and consult with MDE on proposed changes in Project uses that could impact shoreline management. Exelon also has agreed to measures that will benefit turtles, waterfowl, and shortnose and Atlantic sturgeon.

The totality of the PM&E measures that Exelon will undertake in the license will ensure mitigation of the Project's potential impacts as identified by the relicensing studies and analyzed in the FEIS. In fact, many of the measures Exelon will undertake as part of the new license—such as trapping and trucking American shad and American eel above upstream dams owned by other licensees—do more than offset Project impacts. They ensure that the resources of the Susquehanna River are sustained and enhanced for future generations.

b. Off-License Commitments to Support State and Regional Initiatives

Exelon's commitment to the Susquehanna River and the Chesapeake Bay transcends its role as licensee of the Project. As part of its settlement with MDE, Exelon has agreed to several commitments that are not tied to Project impacts. These commitments, which fall outside Exelon's FERC-regulated activities and therefore will not be included in the license, reflect Exelon's desire to play a constructive, collaborative, and meaningful role in efforts by regional stakeholders to address regional issues.

These "off-license" commitments will help the State of Maryland and, by extension, the region, address resources important to communities in Maryland and the Susquehanna River basin. Exelon's funding initiatives will support Maryland's efforts to address the impacts of sediment and nutrients introduced upstream from Conowingo Dam by restoring oyster, mussel, and clam

populations; increase submerged aquatic vegetation; support the implementation of forest buffers and agricultural projects such as cover crops; and enable the State of Maryland to conduct studies addressing American eel and options for disposing of dredged sediment.[31] Exelon also has agreed to provide funding to the U.S. Geological Survey (or the Maryland Geological Survey) to maintain a gage downstream of the Project, funding to MDE and MDNR to offset administrative costs related to the Project, and information to Maryland regarding chlorophyll-A levels in the Conowingo Pond.[32] Exelon's funding commitments, which will provide tangible and long-term benefits to Maryland resources, would not have been possible absent a negotiated settlement.

B. Overview of Clean Water Act Section 401 Issues

If approved by the Commission, the Joint Offer of Settlement will resolve a dispute between Exelon and MDE over Maryland's effort to issue a water-quality certification pursuant to CWA Section 401. What follows is an account of that controversy, and of how the parties propose to settle it.

1. Exelon Found Both Substantive and Procedural Defects in Maryland's Section 401 Certification.

The parties reached the Joint Offer of Settlement following substantial disputes—and extensive litigation—over Maryland's purported Section 401 Certification. On April 27, 2018, MDE issued a document entitled "Clean Water Act Section 401 Certification for the Conowingo Hydroelectric Project."[33] On May 8, 2018, MDE submitted this Certification to the Commission for incorporation into the Project's new license.[34] In a series of challenges filed in different forums,

[31] Offer at 18–20.
[32] *Id.* at 20–22.
[33] Docket No. P-405-106 (filed May 8, 2018) [hereinafter "Certification].
[34] *See id.*

Exelon argued that MDE's purported Certification suffered from multiple defects, both substantive and procedural.

As to substance, Exelon claimed that MDE's Certification included requirements that exceeded Maryland's authority under the CWA and violated the United States Constitution. For the first time in the nearly century-long operation of the Conowingo Project, the Certification would have made the Project's owner responsible for cleaning up pollution that it did not create and had no reasonable way to remove from the water. Citing low levels of dissolved oxygen in parts of the central Chesapeake Bay, dozens of miles downstream from Conowingo, the Certification purported to require the Project to "annually reduce" by millions of pounds the amounts of nitrogen and phosphorus discharged into the Susquehanna River.[35] Because the Project itself does not add these pollutants to the River, MDE proposed to require Exelon to remove pollutants that had entered the water dozens or hundreds of miles upstream, mostly through runoff from farms and cities in Pennsylvania and New York.

Because there were no effective, reasonable means for Exelon to achieve these pollutant reductions at the Conowingo Project, MDE's Certification sought, "in lieu of" the reductions, Exelon's payment of an annual $172 million "fee"—more than $7 billion over the term of the Project's license.[36] This fee, for pollution that Exelon did not generate, would have amounted to nearly a half-million dollars per day, each day, for almost half a century—exceeding, by orders of magnitude, the economic value of the Conowingo Project as an operating asset.

The scope of these conditions was unprecedented. Under CWA Section 401,[37] no water-quality certification, anywhere in the Nation, had ever been conditioned on a FERC-licensed

[35] Certification at 15.
[36] *Id.* at 16.
[37] 33 U.S.C. § 1341.

hydroelectric project removing pollution not caused by the project's operations. And no Section 401 certification, anywhere in the Nation, had ever been conditioned on the licensee's payment of an annual multimillion-dollar "fee" in lieu of such removal.

On May 25, 2018, Exelon challenged MDE's Certification through an administrative appeal and litigation in state and federal courts.[38] Among other claims, Exelon argued that the Certification's conditions exceeded the scope of Maryland's authority under Section 401 and violated the Supremacy Clause and the Fifth and Fourteenth Amendments to the Federal Constitution.

Exelon also contended that the Certification suffered from two procedural defects that amounted to a waiver by MDE, which Exelon set forth in a petition to the Commission for a declaratory order.[39] *First*, Section 401 provides that a State waives its right to issue a certification if it "fails or refuses to act on a request for certification, within … one year."[40] Exelon argued that MDE had failed to "act" under Section 401 because the Certification it issued in 2018 was a mere placeholder that remained subject to *de novo* review and revision by MDE itself.

Second, MDE issued its document more than four years after Exelon submitted its initial certification request to MDE—in violation of Section 401's one-year limit. Exelon had submitted its original request in January 2014 and, following MDE's demands for additional studies that Exelon contended were not necessary, had agreed to withdraw and resubmit materially unchanged requests in March 2015, April 2016, and May 2017. The recent decision in *Hoopa Valley Tribe v. FERC* holds that such withdrawal-and-resubmission exercises do not toll Section 401's one-year

[38] *See* Lodging of Filings Regarding Clean Water Act Section 401 Certification, Docket No. P-405-106 (filed May 25, 2018) (attaching pleadings that Exelon filed the same day in the U.S. District Court for the District of Columbia, the Circuit Court for Baltimore City, and MDE).
[39] Petition for Declaratory Order of Exelon Generation Company, LLC, Docket No. P-405-121 (filed Feb. 28, 2019).
[40] 33 U.S.C. § 1341(a)(1).

clock, even when States and applicants expressly agree to the arrangement.[41] The Commission has interpreted *Hoopa Valley* as "establish[ing] a bright-line rule,"[42] and it has resisted calls to read that decision narrowly.[43]

Therefore, for these two independent reasons, Exelon argued that Maryland had waived its right to issue a certification under Section 401 by failing to timely act on Exelon's request for certification. Exelon's Petition for Declaratory Order asked the Commission to issue a new hydroelectric license for the Conowingo Project without the conditions in MDE's 2018 Certification. That Petition was pending with the Commission when Exelon and MDE filed their Joint Offer of Settlement on October 29, 2019, and it remains pending subject to Exelon's conditional agreement to withdraw it.

2. If Approved, the Joint Offer of Settlement Will Resolve the Substantive and Procedural Defects in MDE's Certification.

If the Commission approves the Joint Offer of Settlement from Exelon and MDE (the Settling Parties) and incorporates the Joint Offer's Proposed License Articles into a new 50-year license for the Conowingo Project, the defects Exelon identified in the 2018 Certification will be rendered moot and all the pending litigation and disputes regarding MDE's Certification will be resolved. That outcome will serve the public interest by avoiding protracted litigation and allowing the Settling Parties to move forward immediately and collaboratively on PM&E measures that will benefit aquatic, terrestrial, wildlife, recreational, cultural, and aesthetic resources in the Susquehanna River basin and the Chesapeake Bay watershed. If the Joint Offer is approved by

[41] 913 F.3d 1099, 1102–05 (D.C. Cir. 2019), *cert. denied sub nom. Cal. Trout v. Hoopa Valley Tribe*, --- S. Ct. ---- (2019), 2019 WL 6689876 (Mem.).
[42] *Placer Cty. Water Agency*, 169 FERC ¶ 61,046, P 20 (2019).
[43] *See, e.g.*, *Constitution Pipeline Co., LLC*, 169 FERC ¶ 61,199 (2019) (broadly interpreting *Hoopa Valley* and rejecting attempted distinctions); *Placer Cty. Water Agency*, 169 FERC ¶ 61,046 (2019) (same); *Constitution Pipeline Co., LLC*, 168 FERC ¶ 61,129 (2019) (same); *McMahan Hydroelectric, LLC*, 168 FERC ¶ 61,185 (2019) (same); *Placer Cty. Water Agency*, 167 FERC ¶ 61,056 (2019) (same).

the Commission, MDE will have secured substantial additional PM&E measures and other, off-license benefits that far exceed what would have resulted if litigation had continued and MDE had been found to have waived its Section 401 authority altogether.

Under the settlement agreement's terms, MDE agreed to waive its right to issue a Section 401 certification for the Conowingo Project, and Exelon agreed to withdraw its Petition for Declaratory Order, but only upon the Commission's approval of the Joint Offer of Settlement and incorporation of the Proposed License Articles into the new license without modification or expansion.[44] MDE and Exelon agreed to this simultaneous waiver and withdrawal to secure important environmental benefits and to avoid protracted litigation, but they are conditioned upon the Commission's acceptance of these environmental benefits as defined through the negotiated settlement between Exelon and MDE. If the Commission were to reject or revise the terms of the Joint Offer of Settlement, MDE would retain the right to seek to maintain its Certification, but Exelon also would retain the right to contend that MDE had waived its Section 401 authority altogether and to assert its other substantive challenges to the Certification. Neither party has admitted to the truth of any allegation or the validity of any claim or defense asserted by the other party.[45]

The Commission's acceptance of the Joint Offer of Settlement also will allow the resolution of the other litigation between the Settling Parties. Exelon would dismiss its challenges to the 2018 Certification in the federal lawsuit and the state lawsuit, releasing the claims asserted in those proceedings under terms set forth in the Settling Parties' agreement.[46] The Settling Parties

[44] Agreement § 3.2(a). MDE and Exelon have subsequently agreed, however, to the specific modifications proposed by the United States Fish and Wildlife Service in the DOI Comments. *See infra* Part IV-I.
[45] Agreement § 3.7(a)–(b).
[46] *Id.* § 3.2(a)(4)–(5).

also acknowledge and agree that all pending administrative challenges to the Certification, whether brought by Exelon or others, will be rendered moot.[47]

III. STANDARD OF REVIEW UNDER THE FEDERAL POWER ACT

A. Federal Power Act Standard of Review

The Commission's authority to issue a license for a hydropower project is governed by Section 10(a)(1) of the FPA. Pursuant to that statutory authorization, the Commission is required to determine

> that any licensed project is best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of waterpower development, for the adequate protection, mitigation, and enhancement of fish and wildlife (including related spawning grounds and habitat), and for other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes referred to in section 4(e).[48]

Section 4(e) in turn requires that

> the Commission, in addition to the power and development purposes for which licenses are issued, shall give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of, fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality.[49]

These statutory obligations remain applicable when parties to a licensing proceeding have reached a settlement.[50]

The Commission also must "ensure that its decisions on settlements, like all decisions under the FPA, are supported by substantial evidence."[51] Accordingly, parties to a settlement must

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[47] *Id.* § 3.2(a)(3).
[48] *Settlements in Hydropower Licensing Proceedings Under Part I of the Federal Power Act*, 116 FERC ¶ 61,270, at P 4 (2006) [hereinafter "*Licensing Settlements*"] (citing 16 U.S.C. § 803(a)(1)); *see also, e.g., City of Rockingham, N.C. v. FERC*, 702 Fed. Appx. 106, 108 (4th Cir. 2017); *PacifiCorp*, 168 FERC ¶ 62,175, at P 82 (2019).
[49] 16 U.S.C. § 797(e).
[50] *Licensing Settlements* at P 4.
[51] *Id.* at P 5.

"develop a factual record that provides substantial evidence to support" any proposed condition and must "demonstrate how the condition is related to project purposes or to project effects."[52]

B. Commission Policy Favoring Settlements in Licensing Proceedings

The "Commission looks with great favor on settlements in licensing cases."[53] This view stems from the Commission's determination that, "[w]hen parties are able to reach settlements, it can save time and money, avoid the need for protracted litigation, promote the development of positive relationships among entities who may be working together during the course of a license term, and give the Commission, as it acts on license and exemption applications, a clear sense as to the parties' views on the issues presented in each settled case."[54]

Given this strong preference for settlement, "when settlement parties request that specific settlement provisions be incorporated as license terms [the Commission will] attempt to accommodate those parties to the extent possible."[55] However, as discussed in more detail below, the Commission "must sometimes refrain from incorporating settlement terms in a license if they require actions beyond the scope of [its] authority, cannot be supported by a public interest determination, or would otherwise interfere with [its] enforcement of the license terms."[56] This does not mean that such terms are "precluded from being included in a settlement," as parties are "free to enter into 'off-license' or 'side' agreements with respect to matters that will not be included in a license."[57]

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[52] *Id.*
[53] *Id.* at P 2.
[54] *Id.*
[55] *Portland Gen. Elec. Co. & Confederated Tribes of the Warm Springs Reservation of Ore.*, 117 FERC ¶ 61,112, at P 10 (2006); *see also Licensing Settlements* at PP 3–6.
[56] *Portland Gen. Elec.*, 117 FERC ¶ 61,112, at P 13; *North East Wisconsin Hydro, LLC*, 165 FERC ¶ 61,259, at P 16 (2018) ("Although the Commission looks with great favor on settlements in licensing cases, the Commission cannot automatically accept all provisions of settlements.").
[57] *Licensing Settlements* at P 7.

C. Scope of the Commission's Jurisdiction Regarding License Measures in Settlements

In exercising its obligations under the FPA, the Commission prefers that "licenses include protection, mitigation, and enhancement measures with a clear nexus to the project, rather than broad, open-ended funding measures."[58] Further, settlement provisions that "extend[] beyond the Commission's jurisdiction to require or to enforce cannot become a lawful term in a Commission license."[59] The Commission has regulatory authority only over the licensee, and so "can administer and enforce the terms of the license only through the licensee and the licensee's property rights."[60] The Commission thus cannot enforce the provisions of a settlement against other parties, such as federal and state agencies, or private parties.[61]

Recognizing that settling parties "have a strong interest" in having certainty about whether specific settlement provisions will be accepted, the Commission has provided general guidance regarding the settlement provisions that can properly be included in licenses.[62] The "basic principles" that apply to the Commission's consideration of whether to adopt settlement provisions as conditions in a project license include the following: (1) measures must be based on substantial evidence in the record of the licensing proceeding; (2) measures must be consistent with the law and enforceable, and in particular must be within the Commission's jurisdiction; (3) a relationship

[58] *Wisconsin Public Service Comm'n*, 163 FERC ¶ 62,100, at P 64 (2018) (citing *Licensing Settlements*). In *Wisconsin Public Service Commission*, the Commission emphasized that FERC Staff-recommended measures would "provide sufficient protection for the aquatic resources in project-affected waters" without the need for a proposed general Aquatic Resources Fund, and, moreover, that there was "no evidence that the types of activities that [were] mentioned for potential funding under the proposed Aquatic Resource Fund" were needed to address a project effect. *Id.* at PP 61–64.

[59] *Licensing Settlements* at P 14.

[60] *Id.* at P 29; *see also, e.g.*, *Pacific Gas & Elec. Co.*, 130 FERC ¶ 62,033, at P 19 (2010).

[61] *See, e.g.*, *Avista Corp.*, 93 FERC ¶ 61,116, at 61,329 (2000). As further examples: (1) because the FPA does not allow the Commission to impose damages, a damages provision may not properly be included in a license (*Consumers Power Co.*, 68 FERC ¶ 61,077, at pp. 61,378–80 (1994)); and (2) enforcement of local laws pertaining to project lands and waters is unrelated to project uses or purposes and is not a matter of Commission jurisdiction (*County of Butte, Cal. v. Cal. Dep't of Water Resources*, 129 FERC ¶ 61,133, at P 24 (2009)).

[62] *Licensing Settlements* at PP 9–10.

must be established between a proposed measure and project effects or purposes;[63] (4) measures should be as narrow as possible, with specific measures preferred over general measures; (5) actions required under measures should occur physically and geographically as close as possible to the project; and (6) measures must reserve the Commission's compliance authority, as well as its authority to review and modify as necessary proposed resource or activity plans.[64]

Matters that are beyond the Commission's jurisdiction can be and commonly are resolved by parties in "off-license" agreements that are not included in a license.[65] To the extent that the Commission does not adopt proposed conditions as part of the license, that decision "does not evidence general opposition to settlements or to the settlement at hand, but rather recognition that the Commission can only exercise that authority given it by Congress."[66] Thus, while parties may prefer to "convert what would otherwise be a simple contract into a license condition enforceable by the Commission" in an attempt to increase the perceived likelihood of enforceability,

[63] *Id.* at P 12. On a number of occasions, the Commission has determined that settlement measures "were not sufficiently tied to project purposes or project effects," *e.g.*, where the measures related to non-project lands, were unrelated to project operations and environmental effects, or included funds that covered activities with no nexus to the project. *See id.* at P 17 ("Instances of orders concluding that settlement measures were not sufficiently tied to project purposes or project effects include: *Portland General Electric Company*, 107 FERC ¶ 61,158 at P 21, n.21 (2004) (disposition of non-project lands and of water rights); *PacifiCorp*, 105 FERC ¶ 61,237 at P 113, n.27 (2003) (portions of settlement not relating to project operations or environmental effects not included in license); *Pacific Gas and Electric Company*, 97 FERC ¶ 61,084 at 61,409-10 (2001) (monitoring of water temperature, flows, and meteorological conditions in reservoirs and river reaches within boundaries of upstream project; investigating feasibility of, and possibly making, modifications to upstream project); *Northern States Power Company*, 111 FERC ¶ 62,212 at P 31 (2005) (recreation enhancement measures outside project boundary that did not provide access to project lands or waters, where adequate access already provided at project); *PacifiCorp*, 104 FERC ¶ 62,059 at P 28 (2003) (provisions providing for recreation enhancements outside project boundary, and for sale of non-project lands); and *USGen New England*, 99 FERC ¶ 62,025 at 64,060-61 (2002) (partially rejecting proposal for enhancement fund, to extent fund would cover activities outside project boundary, with no nexus to project, or, in case of mitigation for tax revenue impacts, beyond Commission's jurisdiction).").

[64] *Licensing Settlements* at P 12.

[65] *See, e.g.*, *City of Seattle, Wash.*, 75 FERC ¶ 61,319, at 62,014 n.6 (1996); *Licensing Settlements* at P 14. For example, parties have recently entered into settlements with off-license provisions regarding: (1) fish mortality compensation and mitigation (*Consumers Energy Co. and DTE Electric Co.*, 167 FERC ¶ 62,151, at n.4 (2019)); (2) annual compensation to support state agencies' monitoring of invasive species (*Alcoa Power Generating, Inc.*, 156 FERC ¶ 62,210, at P 133 (2016)); and (3) monitoring freshwater mussels and potentially funding later freshwater-mussel management by a state agency (*id.* at P 96)).

[66] *Licensing Settlements* at P 6.

uncertainty as to whether a settlement provision will be enforceable in state court is "not by itself sufficient cause" for the Commission "to include in the license a condition that [it] deem[s] inappropriate."[67] In fact, when rejecting proposed license conditions, FERC has in some instances directly reminded parties that they are "free to enter into any off-license agreement."[68]

IV. EXELON REPLY COMMENTS

A. Exelon's Licensing Proposal Serves the Public Interest Because the Proposed PM&E Measures Mitigate Identified Project Impacts.

The Licensing Proposal before the Commission is in the public interest because Exelon's proposed PM&E measures (1) have a clear nexus to identified Project impacts and (2) appropriately balance developmental and non-developmental considerations. Together, the proposed PM&E measures, which are fully supported by the evidence and analysis in the record, comprehensively mitigate Project impacts. The Commission should reject all stakeholder requests to expand the scope of the proposed PM&E measures, particularly requests to incorporate into the new license Exelon's "off-license" commitments. The "off-license" commitments do not have the required nexus to Project operations or Project impacts to warrant their inclusion as license articles subject to the Commission's jurisdiction.

1. The Licensing Proposal's PM&E Measures Have a Direct Nexus to Project Impacts and Comprehensively Mitigate Those Impacts.

As required by the ILP, Exelon undertook numerous studies to evaluate the Project's impacts on environmental resources. These studies contributed to the development of FERC Staff's FEIS, which analyzed and assessed in detail the full range of the impacts attributed to the

[67] *Pub. Util. Dist. No. 1 of Snohomish Cty., Wash.*, 137 FERC ¶ 61,221, at P 20 (2011).
[68] *See, e.g.*, *Duke Energy Carolinas, LLC*, 138 FERC ¶ 62,093, at PP 94–97 (2012) (excluding, among other things, funding commitments to government entities intended to support brook trout and sicklefin redhorse, as well as a riparian habitat enhancement fund, for lack of a connection to the project's purposes and effects, but noting in each case that off-license settlement was available).

Project. As discussed below, for every impact identified in the FEIS, Exelon is proposing mitigation to address the impact.

a. Instream Flows Downstream of the Conowingo Dam

As articulated and fully analyzed in the FEIS, the "flow regime downstream of Conowingo dam has the potential to affect a wide range of resources."[69] Exelon conducted various studies to identify potential impacts of the Project's flow regime on a variety of environmental resources. These studies were designed specifically to gauge the impacts of Project operations on aquatic communities,[70] migratory fish reproduction,[71] stranding,[72] littoral habitat,[73] tributary access,[74] and emergent aquatic vegetation (EAV) and submerged aquatic vegetation (SAV) communities.[75] In the FEIS, FERC Staff determined that Exelon's current flow regime is adequate for protecting aquatic resources downstream from the Project, although the FEIS noted that some adjustments to these flows—such as eliminating short periods (*i.e.*, six-hour intervals) of zero minimum flow[76] in December through February and increasing the minimum flow in the first half of June—could provide additional protection for downstream aquatic habitat.[77]

The Joint Offer of Settlement provides this additional protection[78] and significantly increases minimum flow releases at the Project beyond those recommended by FERC Staff. These

[69] FEIS at 148–61.
[70] Characterization of Downstream Aquatic Communities, RSP 3.18; Freshwater Mussel Characterization Study below Conowingo Dam, RSP 3.19.
[71] Impact of Plant Operation on Migratory Fish Reproduction, RSP 3.21.
[72] Downstream Flow Ramping and Stranding Study, RSP 3.8.
[73] Water Level Management Study, RSP 3.12.
[74] Study to Assess Tributary Access in Conowingo Pond, RSP 3.13.
[75] Downstream EAV/SAV Study, RSP 3.17.
[76] Although no operational releases are made from Conowingo during these periods, leakage flow from the Dam provides approximately 800 cubic feet per second (cfs) to the river reach.
[77] FEIS at 412.
[78] As explained below, *see infra* Part IV-D-6, the initial three-year transition period is necessary for Exelon to coordinate with PJM Interconnection LLC to ensure the flow regime proposed for the remainder of the license term can be implemented consistent with PJM dispatch protocols, without jeopardizing reliability or adversely impacting the markets administered by PJM.

increased flows will provide additional aquatic habitat downstream from the Project; and limitations on ramping will reduce the potential for fish stranding, improve conditions for fish migrating upstream, and reduce impacts to spawning.

TNC has objected to this flow regime. Exelon explains below, in detail, why the Commission should reject TNC's objections.[79]

b. Effects on Water Quality

Based on the determination that the Project "may affect water quality" within the Susquehanna River, the FEIS carefully examined the Susquehanna River's water quality, as well as the water-quality conditions at the Project.[80] Following that comprehensive review, the FEIS determined that "continued operation of the … Conowingo Project[] would have minimal effects on water quality in the lower Susquehanna River" and that "there appears to be no need for further measures to protect or enhance water temperature and [dissolved oxygen (DO)] at the project."[81]

While the FEIS properly concludes that water-quality impacts will be minimal, from time to time the Conowingo Pond has been shown to exhibit dissolved-oxygen stratification (*i.e.*, higher DO levels in near-surface waters and lower DO levels at depth), resulting in the potential for entrainment of waters with lower DO levels through the low-level intakes at the Project.[82] Exelon previously installed aerating turbine runners at the Project, which significantly improved DO levels in the tailrace.[83] As part of the Licensing Proposal, Exelon has committed to continue operating the aerating turbine runners during the term of the new license. Additionally, because fish kills can indicate DO deficiency, Exelon has agreed as part of the Joint Offer of Settlement to develop

[79] *See infra* Part IV-D.
[80] FEIS at 96–101, 107–12, 136.
[81] *Id.* at 107, 136, xxxviii.
[82] Seasonal and Diurnal Water Quality in Conowingo Pond and Below Conowingo Dam, RSP 3.1.
[83] Application for New License for Major Water Power Project-Existing Dam, Volume 1, page E-86, Docket No. P-405 (filed Aug. 31, 2012).

and implement a plan to monitor for, and inform MDE about, large-scale fish kills that may occur in the Conowingo Pond or the tailrace.[84]

c. Effective Fish Passage

In the FEIS, FERC Staff determined that "improving the fish lifts at the Conowingo Project and implementing American eel passage measures … would enhance upstream fish migration and maintain required downstream survival of diadromous fish species in the lower Susquehanna River."[85] The Licensing Proposal before the Commission provides for substantial investments in new fish-lift facilities, as well as the trap-and-transport of American shad, river herring, and American eel. The Modified Prescription also provides for efficiency testing throughout the license term and includes adaptive-management provisions that require Exelon to make additional investments in fish passage as necessary. These comprehensive measures, supplemented by the Joint Offer of Settlement's fish-passage provisions, will provide significant benefits to migratory and resident fish as barriers to upstream passage will be reduced significantly for all species.[86] Further, because aquatic invasive species (AIS) passing the Project have the potential to suppress native species, alter the food web, and reduce biodiversity, Exelon has agreed to remove AIS collected in the Project's fish lifts.[87]

d. Protection of Sensitive Plants and Animals

In the FEIS, FERC Staff determined that raptors—including state sensitive species such as Bald Eagles and osprey—and waterfowl are present on Project lands and waters, and that these species could be affected by Project operations.[88] The Licensing Proposal addresses these

[84] Offer, Attachment A, Proposed License Articles, Dissolved Oxygen.
[85] FEIS at xxxix.
[86] Offer at 17.
[87] Offer, Attachment A, Proposed License Articles, Invasive Species Mitigation.
[88] FEIS at xxxix.

potential impacts comprehensively through the proposed Bald Eagle Management Plan, which has been designed to ensure Bald Eagle nesting, roosting, and foraging areas are protected within the Project boundaries. Exelon has also proposed osprey management policies intended to minimize effects on osprey nesting within the Project's boundaries.

FERC also determined that a waterfowl-nesting protection plan would be valuable in identifying areas where waterfowl nesting habitat is affected by inundation or dewatering due to Project operation.[89] According to the FEIS, such a plan "would benefit nesting waterfowl by allowing Exelon to determine if Conowingo is affecting waterfowl nesting habitat, identifying which species of nesting waterfowl the project is affecting, and establishing appropriate protection or mitigation measures."[90] To address this, Exelon has agreed to develop and implement a waterfowl-nesting protection plan.[91]

FERC Staff also recommended that Exelon develop a bog-turtle management plan that includes restrictions on mowing wetlands, invasive and woody plant control, and limits on public access to wetlands documented to support bog turtles.[92] In the Proposed License Articles, Exelon has agreed to develop and implement a bog-turtle management plan.[93]

Exelon has previously undertaken research to better understand and protect the map turtle population in the Project area. Those efforts indicated the need for further research, particularly with respect to nesting sites and basking platforms.[94] Under the Proposed License Articles, Exelon will develop and implement a Map Turtle Plan, which would include (i) monitoring the map turtle

[89] *Id.* at 249.
[90] *Id.*
[91] Offer, Attachment A, Proposed License Articles, Waterfowl Nesting Protection Plan.
[92] FEIS at 413.
[93] Offer, Attachment A, Proposed License Articles, Turtle Management Plans.
[94] Application for New License for Major Water Power Project-Existing Dam, E-256, Docket No. P-405 (filed Aug. 31, 2012).

population in the Project area; (ii) studying the need for and potential location of artificial basking platforms; and (iii) nest management and protection measures.[95]

In addition to bog turtles, the FEIS notes that five other threatened or endangered species are known to exist in the general vicinity of the Conowingo Project, the York Haven Project, or the Muddy Run Project.[96] With respect to these species, the FEIS determined that the Project is unlikely to have an adverse effect, or would have no effect. In any event, to provide additional protection and assist MDE and MDNR in assessing the existence of sturgeon populations in the lower Susquehanna River, Exelon has agreed to provide annual reports to those agencies regarding sturgeon observed at the Project.[97]

e. Enhancements to Recreational Opportunities

The FEIS provides that continued operation of the Project would "enhance the recreational facilities and benefit recreationists in the region."[98] The Licensing Proposal before the Commission includes a proposed Recreation Management Plan designed to ensure that visitation, facilities, and reservoir surface are monitored and maintained periodically, so that Project recreation facilities and reservoir surface continue to meet use and demand at the Project.[99]

The FEIS also recognized that the presence of debris in the Conowingo Pond can present safety and aesthetic hazards.[100] Given the size of the River's watershed, the amount of debris arriving at the Project from upstream sources can be significant.[101] Under the settlement, Exelon recommits its trash and debris-removal efforts; the Proposed License Articles provide that Exelon will remove debris blocking drinking water intakes and recreational facilities within the Project

[95] Offer, Attachment A, Proposed License Articles, Turtle Management Plans.
[96] FEIS at xl.
[97] Offer, Attachment A, Proposed License Articles, Sturgeon Protection.
[98] FEIS at xli.
[99] Application, *supra* note 19, at E-28 and Vol. 3.
[100] FEIS at 293.
[101] *Id.*

boundary as soon as safely possible.[102] Exelon also will sponsor at least two annual community-based cleanup events at or near the Project.[103] Both these activities will further enhance recreation and public safety.

f. Shoreline Management

Exelon has proposed implementing a Shoreline Management Plan (SMP)[104] to minimize the introduction of sediment into the Susquehanna River from Project operations. The FEIS determined that the SMP "includes adequate measures to address erosion control issues in the reservoir."[105] The SMP provides a framework for managing Project lands and river shoreline areas, consistent with broader local, regional, state, and federal regulations, initiatives, and planning guidelines.[106] In addition, the SMP provides for the protection of aquatic and terrestrial resources and habitat on Project lands by requiring all activities undertaken by Exelon or its permittees to incorporate Best Management Practices (BMPs) to minimize or eliminate sediment and nutrient delivery to Project waters. In the FEIS, FERC Staff recommended that the Commission accept the SMP, and also added a provision that Exelon update the SMP every ten years after consulting with interested parties. The Commission concluded that "[c]onsultation with the appropriate agencies and other stakeholders as part of periodic review would ensure that multiple interests and needs are addressed."[107] Accordingly, under the Joint Offer of Settlement, Exelon will consult with MDE regarding, and in some cases seek MDE's approval for, changes that could affect shoreline conditions, including non-Project use of Project lands, modifications to

[102] Offer, Attachment A, Proposed License Articles, Trash and Debris.
[103] *Id.*
[104] Application for New License for Major Water Power Project-Existing Dam, Volume 3, Docket No. P-405 (filed Aug. 31, 2012).
[105] FEIS at 75.
[106] Application for New License for Major Water Power Project-Existing Dam, Volume 3, page i, Docket No. P-405 (filed Aug. 30, 2012); *see also* FEIS at 297.
[107] FEIS at 300.

shoreline vegetation, and changes in use of Project lands that may affect sensitive aquatic resources.[108]

2. The Licensing Proposal Comprehensively Mitigates Project Impacts.

As described above, the Licensing Proposal proffers license conditions that are tailored specifically to identified Project impacts. The proposed PM&E measures will appropriately mitigate Project impacts, and protect and enhance environmental resources affected by Project operations. The voluminous record in this proceeding, which includes the FEIS and the studies conducted specifically in connection with the relicensing process, fully supports the conclusion that Exelon's proposed PM&E measures are comprehensive, appropriate, and effective. While certain stakeholders argue that additional measures should be included in the new license, these additional measures lack a sufficient nexus to Project operations or have been rejected in the FEIS as either ineffective or inappropriate for Exelon to undertake as the Project licensee. The Commission, therefore, should include in the new license only those conditions proposed in the Licensing Proposal.

B. The Off-License Provisions of the Settlement Agreement Reflect Exelon's Commitment to State and Regional Initiatives.

In addition to the comprehensive commitments in the Licensing Proposal before the Commission, the Joint Offer of Settlement provides significant off-license funding and other commitments to support SAV restoration, aquaculture, clam and oyster restoration, shoreline creation, forest buffers, and other measures that will enhance water quality in the Susquehanna River and the Chesapeake Bay. These commitments do not relate to the Project's responsibilities

[108] Offer, Attachment A, Proposed License Articles, Shoreline Management Plan. During the NEPA process, DOI recommended similar conditions, *i.e.*, that Exelon be required to prepare and implement shoreline management plans that address, *inter alia*, use of Project lands, shoreline vegetation management, and sensitive natural-resources overlays. FEIS at 298.

under the FPA; rather, they reflect Exelon's commitment to the region. The off-license funding commitments and other provisions of the Settlement Agreement do not propose to address Project impacts, but rather resolve disputes with MDE and are submitted to the Commission solely on an informational basis.

As an example, after extensively analyzing environmental impacts,[109] FERC Staff found "no basis to require mitigation for project effects on the freshwater mussels because proposed project operation would not result in large operational changes that would negatively affect current freshwater mussel populations and distribution."[110] Exelon has nonetheless agreed to provide significant funding to the State of Maryland to promote mussel restoration.[111] While not driven by Project impacts, this commitment recognizes the important role the eastern elliptio mussel plays in the regional ecosystem and demonstrates Exelon's broader interests in the region's environmental health.

Other proposed measures similarly go beyond mitigating the Project's impacts, including providing funding intended to support: (1) projects to make the Susquehanna River and the Chesapeake Bay more resilient to severe weather events; (2) water-quality projects benefiting the region, including forest buffers and agricultural projects; (3) research with respect to eels; and (4) feasibility studies related to disposal and reuse of dredge material.[112] Exelon views these as important measures recognizing that "ultimate resolution" of certain environmental issues raised in this proceeding, such as "the issue of environmental health of the Bay," will "require more than

[109] FEIS at 126–29.
[110] *Id.* at H-32.
[111] Agreement § 2.2.
[112] *Id.* §§ 2.3, 2.4.

singular actions at the Project, and instead would require a basin-wide approach involving many governmental jurisdictions and other entities."[113]

These off-license funding commitments and other provisions of the Settlement Agreement exceed the Project's obligations under the FPA and therefore should not be included in the FERC license. No additional mitigation beyond that in the Licensing Proposal is required under the FPA.

C. Riverkeepers' Challenges to MDE's Waiver Lack Merit.

If the Commission approves the Joint Offer of Settlement and incorporates the Licensing Proposal into the new license, the Joint Offer provides that MDE "immediately and automatically" "waives any and all rights it had or has to issue a water quality certification."[114] Riverkeepers, however, claim that this waiver is invalid and that "no matter what FERC decides to do with the Proposed Settlement, any license it grants to Exelon must include the conditions in MDE's § 401 Certification."[115] Riverkeepers' argument lacks merit.

1. Nothing in Federal Law Limits MDE's Ability to Waive via Agreement.

Prior to Exelon and MDE's settlement and submission of the Proposed License Articles to FERC, Exelon filed a Petition for a Declaratory Order (Petition)[116] asking the Commission to find that MDE had waived its right to issue a Section 401 certification because the 2018 Certification did not satisfy MDE's obligation to act within a year.[117] That Petition remains pending, but the Parties' settlement provides that if the Commission approves the Joint Offer of Settlement in full, the Petition—and other litigation between the Parties in both federal and state court—will be withdrawn, and MDE will waive any and all rights it has to issue a water-quality certification.

[113] FEIS at 81.
[114] Offer at 4.
[115] Riverkeepers Comments at 16.
[116] Petition for Declaratory Order of Exelon Generation Company, LLC, Docket No. P-405-121 (filed Feb. 28, 2019).
[117] 33 U.S.C. § 1341(a)(1); *see infra* at 37–44.

Through that voluntary and unequivocal waiver by MDE, the State withdraws the 2018 Certification before it is incorporated by the Commission into the Project's license, without any replacement certification issued by MDE.

Contrary to Riverkeepers' argument, the Commission need not decide whether MDE already waived, as Exelon contended in its Petition. Under federal law, States have an unfettered right to waive the certification authority Section 401 confers. That conclusion flows from Section 401's text—which nowhere limits States' waiver authority—and its purpose: On the one hand, Section 401 protects state power (by providing States an opportunity to certify), and on the other, it safeguards the interest in a speedy decision shared by applicants and the Commission (by requiring States to act within a year). Where, as here, States and applicants agree to waive certification, their agreement does not implicate any interest Section 401 protects, and the only potential limits come from state law, which is beyond the Commission's purview. Indeed, Riverkeepers' position would only harm States by forcing them to litigate and lose challenges to legally questionable certifications instead of entering settlements that—like the Joint Offer of Settlement—protect the State's legitimate environmental concerns while providing for a Section 401 waiver.

First, Riverkeepers argue that the "only way" a State can waive is by "fail[ing] or refus[ing] to act" within a year, and that here, MDE "acted by reaching a final decision and issuing the Certification."[118] Both text and precedent, however, are to the contrary. Presumptively, a "party may waive any provision, either of a contract or of a statute, intended for his benefit."[119] Hence, "absent some affirmative indication of Congress' intent to preclude waiver, [courts] presume[] that

[118] Riverkeepers Comments at 14–15.
[119] *United States v. Mezzanatto*, 513 U.S. 196, 201 (1995) (quoting *Shutte v. Thompson*, 82 U.S. (15 Wall.) 151, 159 (1873)).

statutory provisions are subject to waiver by voluntary agreement of the parties."[120] Here, nothing in Section 401 limits States' ability to waive. Section 401 specifies that States may waive by "fail[ing] or refus[ing] to act on a request for certification, within a reasonable period of time (which shall not exceed one year)"—but it does not say that States may waive *only* via inaction.[121] Section 401 warns that "[n]o license or permit shall be granted until the certification required by this section has been obtained or has been waived"—but it does not limit the manner in which a State may waive.[122] And Section 401 underscores that "[n]o license or permit shall be granted if certification has been denied by the State," again without restricting States' waiver authority.[123]

For that reason, the governing regulations and caselaw have long rejected Riverkeepers' position. For 50 years, Environmental Protection Agency (EPA) regulations have provided that Section 401's "certification requirement … shall be waived upon … [w]ritten notification from the State or interstate agency concerned that it expressly waives its authority."[124] This regulation, like Section 401 itself, imposes no limits on when or how States may effect a waiver, aside from requiring that it be written. In the intervening decades, courts have repeatedly recognized that "a state may make an affirmative decision to waive § 401 certification,"[125] because Section 401 "provides … for express waivers by a state," as well as "waivers by silence."[126] The Commission has recognized the same thing.[127] Indeed, EPA's recent proposed regulations "reaffirm[] the

[120] *Id.* (citing *Evans v. Jeff D.*, 475 U.S. 717, 730–32 (1986)); *accord Price v. U.S. Dep't of Justice Attorney Off.*, 865 F.3d 676, 679 (D.C. Cir. 2017) (same presumption); *Sec'y, U.S. Dep't of Labor v. Preston*, 873 F.3d 877, 886–87 (11th Cir. 2017) (same).
[121] 33 U.S.C. § 1341(a)(1).
[122] *Id.*
[123] *Id.*
[124] 40 C.F.R. 121.16; *see Reorganization and Republication*, 36 Fed. Reg. 22,369 (Nov. 25, 1971).
[125] *Envtl. Def. Fund, Inc. v. Alexander*, 501 F. Supp. 742, 771 (N.D. Miss. 1980).
[126] *City of Olmsted Falls, Ohio v. EPA*, 435 F.3d 632, 636 (6th Cir. 2006); *accord City of Olmstead Falls v. EPA*, 266 F. Supp. 2d 718, 726–27 (N.D. Ohio 2003); *City of Shoreacres v. Texas Comm'n of Envtl. Quality*, 166 S.W.3d 825, 833, 836–37 (Tex. App. 2005).
[127] *See, e.g.*, *Fraser Papers, Inc.*, 78 FERC ¶ 62,083, 64175 (1997); *N. States Power Co. of Wis.*, 78 FERC ¶ 62,086, 64,226–27 (1997); *City of New Martinsville, W. Va.*, 53 FERC ¶ 61,166, 61,615–16 (1990).

ability of a state to expressly or affirmatively waive the requirement to obtain a section 401 certification," noting that this provision reflects existing law.[128]

The statute, regulations, and caselaw speak with one voice because nothing in Section 401's purpose requires limiting States' ability to waive. On the one hand, by requiring applicants to seek a state certification, Section 401 "gives a primary role to states 'to block ... local water projects' by imposing and enforcing water quality standards that are more stringent than applicable federal standards,"[129] by giving "a veto power to states with water quality related concerns about licensing activities of the various federal agencies."[130] On the other hand, by requiring States to act "within a reasonable period of time (which shall not exceed one year)," Section 401 protects the interest—shared by applicants and the Commission—in "preventing delay" that would "usurp[] the Commission's 'control over whether and when a federal [authorization] will issue.'"[131] Neither purpose supports limiting a State's ability to agree with applicants to waive certification. The State has had its opportunity to veto, and has chosen not to exercise it. "A state need not avail itself of this protection."[132] Meanwhile, allowing the State to effect an express waiver furthers the interest in avoiding delay, by permitting the federal license to issue

[128] *Updating Regulations on Water Quality Certification*, 84 Fed. Reg. 44,080, 44,112 (Aug. 22, 2019); *see id.* at 44,121.
[129] *City of Tacoma, Wash. v. FERC*, 460 F.3d 53, 67 (D.C. Cir. 2006) (quoting *Keating v. FERC*, 927 F.2d 616, 622 (D.C. Cir. 1991)).
[130] *Keating*, 927 F.2d at 622 (quoting 2 William H. Rodgers, Jr., *Environmental Law: Air and Water* § 4.2, at 26 (1986)); *accord United States v. Marathon Dev. Corp.*, 867 F.2d 96, 99–100 (1st Cir. 1989); *Envtl. Def. Fund*, 501 F. Supp. at 771 ("The purpose of the certification mechanism ... is to assure that Federal licensing or permitting agencies cannot override State water quality requirements." (quoting S. Rep. No. 414, 92d Cong., 2d Sess. (1971), *reprinted in* 1972 U.S.C.C.A.N. 3668, 3735)).
[131] *Nat'l Fuel Gas Supply Corp. Empire Pipeline, Inc.*, 167 FERC ¶ 61,007, P 12 (2019) (quoting *Hoopa Valley Tribe v. FERC*, 913 F.3d 1099, 1104 (D.C. Cir. 2019)); *accord Alcoa Power Generating Inc. v. FERC*, 643 F.3d 963, 972–73 (D.C. Cir. 2011).
[132] *Alexander*, 501 F. Supp. at 771.

immediately. Indeed, it "would be illogical" if States could waive through delay but not via an affirmative agreement, supported by valuable consideration.[133]

Nor does it matter that Riverkeepers believe that MDE has already "acted" by issuing its 2018 Certification.[134] Exelon, of course, has contested the sufficiency of the State's "action," which is one of the grounds on which its Petition claims MDE has waived.[135] But for present purposes, the key point is that neither Section 401's text nor EPA's implementing regulations imposes any limits on *when* States may "expressly waive[] [their] authority" or would permit a distinction between affirmative waivers issued *before* a putative certification document and those issued *after*.[136] Likewise, the baseline presumption that "statutory provisions are subject to waiver by voluntary agreement of the parties"[137] applies with equal force regardless of whether MDE has issued a document that it claims (but Exelon contests) constitutes a valid certification. Nor does Section 401's purpose support any such limit: While Section 401 gives States some power to "block" or "veto" projects, States may choose not to exercise that power—and they may do so at any time, without undermining any interest Section 401 protects.[138] To the contrary, Riverkeepers' position would only undercut Section 401's State-protective purposes: It would force States to litigate legally questionable certifications, like MDE's 2018 Certification, to the death, in lieu of reaching a negotiated agreement that protects state environmental goals without the legal risk.[139]

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[133] *Id.* By contrast, *National Fuel* held that States and applicants could not extend Section 401's one-year deadline by agreement because permitting such waivers would "usurp[]" the Commission's own authority to ensure that federal licenses issue in a timely fashion. 167 FERC ¶ 61,007, P 12. MDE's waiver in the Joint Offer of Settlement does not similarly trample on the Commission's authority.

[134] Riverkeepers Comments at 15.

[135] *See infra* Part IV-C-2-b.

[136] *See* 40 C.F.R. 121.16.

[137] *Mezzanatto*, 513 U.S. at 201.

[138] *See supra* at 30–32.

[139] Indeed, the Commission has recognized that state review proceedings concerning a Section 401 Certification may still be ongoing at the time the certification is submitted to FERC, and that the Commission may even issue a new license despite that fact. The Commission has explained that it remains free to modify a license to take into account any changes in a Section 401 certification that result from ongoing state review proceedings. *See PacifiCorp*, 170 FERC ¶ 61,026, P 6 & n.13 (2020) (collecting authority for that proposition). Here, state administrative proceedings,

Second, Riverkeepers posit that "MDE's purported waiver … could be considered a withdrawal of the existing Certification"—but that such a withdrawal would be unlawful because the CWA "does not authorize states to withdraw water quality certifications."[140] To contend that MDE may not withdraw the 2018 Certification as a result of and in connection with ongoing state review proceedings, particularly before the Commission has even acted on it, is simply to contend that MDE cannot waive. As set forth above, MDE clearly has that legal ability and right. MDE is waiving its authority to make a Section 401 certification, which Section 401 nowhere limits MDE from doing.

Riverkeepers also assert that the Joint Offer of Settlement is invalid because it does not comply with the requirements for a withdrawal under "Maryland's regulations."[141] Riverkeepers are wrong about Maryland law. But here, that is beside the point. Riverkeepers are not the first to argue that state law "do[es] not allow the State to issue a waiver with respect to a Section 401 application."[142] Such arguments, however, "turn[] on questions of state law."[143] Courts have therefore recognized that federal permitting agencies may rely on express waivers by state agencies, unless and until they are invalidated as a matter of state law.[144] As the Sixth Circuit explained, if a federal permitting agency

> cannot rely on the state agency to properly follow its own laws and regulations with respect to issuing waivers, the Section 401 waiver procedure would, in effect,

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state court litigation, federal court litigation, and the Petition all were filed and continued after MDE issued the April 2018 Certification, and the Commission has not yet issued the Project's new license. Through its conditional settlement of all these litigation matters, on terms that are more beneficial to the State than may have resulted from the resolution of these matters, MDE has declared its intention to waive its Section 401 Certification rights. Just as the Commission has the ability to take into account subsequent changes to a Section 401 Certification that result from ongoing state review proceedings, the Commission can and indeed must take into account MDE's exercise of its right to waive under Section 401 as part of the resolution of state review proceedings and other litigation. The Commission certainly has no authority to reject MDE's decision to waive, and, as explained *infra*, MDE clearly has the legal authority to waive.

[140] Riverkeepers Comments at 15 (emphases removed).

[141] *Id.*

[142] *City of Olmstead*, 266 F. Supp. 2d at 726.

[143] *City of Tacoma*, 460 F.3d at 67.

[144] *City of Olmstead*, 266 F. Supp. 2d at 726; *City of Olmstead*, 435 F.3d at 636.

> require [the federal agency] to engage in an analysis of each state's rules and regulations on the issuing of Section 401 waivers, come to an independent assessment as to whether the state agency followed those rules on issuing Section 401 waivers, and, if [the federal agency] determined that they did not follow them, fail to grant a permit despite an explicit waiver by the state.[145]

That approach, "in addition to being cumbersome and duplicative of effort, would undermine the role that state environmental agencies play."[146] The forum for Riverkeepers' arguments is in whatever avenues Maryland provides. The Commission should decline the invitation to review MDE's compliance with state law, as it has often done under Section 401.[147]

Much the same is true of Riverkeepers' argument that, even if waivers are permitted, they "must satisfy the same notice-and-comment rulemaking requirements as the issuance of the Certification itself."[148] The only requirement that *Section 401* imposes is that States must "establish procedures for public notice in the case of all applications for certification by it and, to the extent it deems appropriate, procedures for public hearings."[149] And undisputedly, MDE provided notice of Exelon's "application," as well as a public hearing on it. Nothing in Section 401 required separate notice of MDE's intent to waive, any more than it required MDE to put out its 2018 Certification for public notice before submitting it to the Commission. Meanwhile, as to Riverkeepers' argument that "MDE has not taken … the[] steps," or made the "finding[s],"

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[145] *City of Olmstead*, 435 F.3d at 636.
[146] *Id.*
[147] *See Flambeau Hydro, LLC*, 113 FERC ¶ 61291, P 8 (2005) ("As we have explained previously, issues concerning the validity of state actions under section 401 are for state courts to decide, and federal courts and agencies are without authority to review these matters.… [A] question such as that raised by Flambeau—whether a state agency has complied with its own regulations, rather than federal law—is one to be determined in the first instance by the state."); *FPL Energy Maine Hydro LLC*, 111 FERC ¶ 61104, P 8 (2005) ("Issues concerning the validity of state actions under section 401 are for state courts to decide, and federal courts and agencies are without authority to review these matters").
[148] Riverkeepers Comments at 16.
[149] 33 U.S.C. § 1341(a)(1).

required under state law,[150] the answer again is that state-law issues are not for the Commission to decide.[151]

Third, Riverkeepers contend that even if MDE's waiver is valid, the 2018 Certification's conditions still "must become conditions on the Dam's license" because—supposedly—the 2018 Certification "currently exists," and Section 401 "provides that '[a]ny' certification provided under § 401 'shall become a condition on any Federal license or permit subject to the provisions of this section.'"[152] But both Riverkeepers' premise and its conclusion are wrong. If the Commission accepts the Joint Offer of Settlement, then the 2018 Certification no longer exists—and nothing in the Commission's power can resurrect it, without the Commission making a state-law determination that MDE acted improperly (which, as set forth above, the Commission lacks authority to do). As for Section 401, Riverkeepers omit the critical passage: State conditions "shall become a condition on any Federal license or permit *subject to the provisions of this section*."[153] Those provisions include Section 401's provisions permitting waiver.

2. In Any Event, If the Commission Were Forced to Determine Whether MDE Had Already Waived, the Commission Would Have to Find Waiver Here.

If, contrary to the arguments above, the Commission were forced to determine whether MDE had already waived by the time it issued the 2018 Certification, the Commission should approve the Joint Offer of Settlement by finding that MDE had *already* waived by failing to act within one year of Exelon's request. Exelon's Petition for Declaratory Order explains why that is

[150] Riverkeepers Comments at 16.
[151] The Commission need not determine now how it would respond if a successful challenge to MDE's waiver were brought in a state-law forum. No attempt has been made to enjoin MDE's actions or to stay issuance of the license. The Parties' settlement also provides that if, through a challenge to MDE's voluntary waiver, the Certification were to be imposed on the Project in whole or in part, Exelon reserves its rights to reassert its previous challenges to the Certification. Agreement §§ 3.2(a)(4), (5). Moreover, if MDE's voluntary waiver were set aside as a matter of state law, the Commission still would need to determine whether MDE had *involuntarily* waived as a matter of the *federal* law requirements of Section 401.
[152] Riverkeepers Comments at 16 (quoting 33 U.S.C. § 1341(a)(1)) (emphases removed).
[153] 33 U.S.C. § 1341(d) (emphasis added).

so; here, Exelon only summarizes those reasons and explains why Riverkeepers' contrary arguments lack merit.[154]

a. MDE Waived Under *Hoopa Valley*.

Hoopa Valley presented the question "whether a state waives its Section 401 authority when, pursuant to an agreement between the state and applicant, an applicant repeatedly withdraws-and-resubmits its request for water quality certification over a period of time greater than one year."[155] The D.C. Circuit answered yes. It found that "[d]etermining the effectiveness of such a withdrawal-and-resubmission scheme [wa]s an undemanding inquiry because Section 401's text is clear."[156] "While the statute does not define 'failure to act' or 'refusal to act,'" the D.C. Circuit had no doubt that "the states' efforts … constitute such failure and refusal within the plain meaning of these phrases."[157] That was so, the court explained, because the States' "deliberate and contractual idleness defie[d] th[e] requirement" that States must act "within a reasonable period of time, not to exceed one year."[158] And by using the withdraw-and-resubmit maneuver to "shelv[e] water quality certifications, the states usurp[ed] FERC's control over whether and when a federal license will issue"[159] and contradicted Congress's intent in enacting Section 401's time limit—"'to prevent a State from … delaying … federal licensing.'"[160]

Under *Hoopa Valley*, this is a straightforward case. Exelon submitted its Section 401 application to MDE on January 30, 2014, after completing every study the Commission had

[154] Exelon hereby incorporates by reference the arguments made in its Petition and its Answer to MDE's Protest. *See* Motion for Leave to Answer and Answer of Exelon Generation Company, LLC, Docket No. P-405-121 (filed Apr. 12, 2019) [hereinafter "Answer"].
[155] *Hoopa Valley Tribe v. FERC*, 913 F.3d 1099, 1103 (D.C. Cir. 2019), *cert. denied sub nom. Cal. Trout v. Hoopa Valley Tribe*, --- S. Ct. ---- (2019), 2019 WL 6689876 (Mem.).
[156] *Id.*
[157] *Id.* at 1104.
[158] *Id.*
[159] *Id.*
[160] *Id.* at 1105 (quoting *Alcoa Power Generating, Inc.*, 643 F.3d 963, 972–73 (D.C. Cir. 2011), and citing *Millennium Pipeline Co. v. Seggos*, 860 F.3d 696, 701–02 (D.C. Cir. 2017)).

required as part of its ILP.[161] Nonetheless, in November 2014, MDE demanded that Exelon fund and conduct a three-year sediment study the Commission had rejected as unnecessary, threatening to deny Exelon's application if it did not.[162] And via this threat, MDE procured an agreement for Exelon to withdraw and resubmit its application until the study was complete.[163] Pursuant to that agreement, Exelon withdrew its application and resubmitted it in 2015, 2016, and 2017, and MDE declined even to put out Exelon's application for *comment* during the 2015 and 2016 submissions.[164] Here, as in *Hoopa Valley*, MDE therefore waived by engaging in a "coordinated … scheme"[165] to defer decision beyond a year.

Like other litigants, Riverkeepers depict *Hoopa Valley* as limited to its facts. But the Commission has already rejected such arguments, correctly understanding *Hoopa Valley* and Section 401 as "establish[ing] a bright-line rule."[166] In short, "the statute means what the statute says. A state must act on a request within one year from receipt."[167] *Hoopa Valley* and Section 401 thus "lead[] to the conclusions that section 401's one-year time limit is unqualified and that the statute does not allow exceptions."[168] There "is no provision in section 401 to stop the clock under any circumstance."[169] Indeed, the Commission has already rejected every distinction that Riverkeepers have made (or might make) in its attempt to ward off *Hoopa Valley*. Tellingly, Riverkeepers simply ignore the Commission's many decisions rejecting identical arguments.

Agreement. Repeatedly the Commission has rejected attempts—just like Riverkeepers'—to distinguish *Hoopa Valley* as limited to formal agreements, explaining that "a formal agreement"

[161] Petition at 4, 7.
[162] Petition at 8.
[163] Petition at 7–10; Answer at 7–9.
[164] Petition at 9–10; Answer at 7.
[165] *Hoopa Valley*, 913 F.3d at 1105.
[166] *Placer Cty. Water Agency*, 169 FERC ¶ 61,046, P 20 (2019).
[167] *Constitution Pipeline Company, LLC*, 169 FERC ¶ 61,199, P 21 (2019).
[168] *Id.*
[169] *Id.*

is "not necessary" to trigger waiver; rather, "exchanges between the entities c[an] amount to an ongoing agreement."[170] Here, the record readily shows the type of "functional agreement" that the Commission has deemed sufficient—namely, for a three-year delay pegged to the sediment study.[171] Among other things: In December 2014, Exelon told the Commission, without contradiction from MDE, that the "plan agreed upon by Exelon and MDE" contemplated that the Sediment Study would "be completed in 2016 or 2017," and that "*[a]s discussed with MDE*, Exelon intends to continue to withdraw and refile [its] application every year until the study is complete."[172] Then, as the coordinated withdrawals and resubmissions were occurring, MDE issued no public notices on Exelon's 2015 and 2016 reapplications—consistent with the agreement that MDE would take no action on those applications, but inconsistent with Section 401's requirement of "public notice [for] all applications for certification."[173] And in 2017, when MDE was finally willing to proceed, MDE issued a notice acknowledging that when "Exelon withdrew its application in December 2014," Exelon "agreed" with MDE to proceed with a multi-year study, and that "[w]hile the … study was ongoing, Exelon agreed to withdraw and resubmit … until the results … [we]re available."[174] This is exactly the coordinated circumvention of the one-year

[170] *McMahan Hydroelectric, LLC*, 168 FERC ¶ 61,185, P 37 (2019); *see Placer Cty. Water Agency*, 169 FERC ¶ 61,046 at PP 17, 24 (2019) (finding waiver even though "the record does not include a formal, written agreement"; a "functional agreement" sufficed); *Constitution Pipeline Company, LLC*, 168 FERC ¶ 61,129, PP 33–34 (2019) ("The absence of a formal agreement between the state and the applicant does not distinguish *Hoopa Valley*.… Nothing in *Hoopa Valley* suggests that the specific form of the agreement—whether the understanding was formal or informal, written or oral, communicated on paper or electronically—was material to the court's decision"); *Placer Cty. Water Agency*, 167 FERC ¶ 61,056, P 12 (2019) ("While the California Board and Placer County may not have had a formal agreement regarding withdrawing and refiling the certification application, the record shows that both entities worked to ensure that this would take place each year.").
[171] *Placer Cty. Water Agency*, 169 FERC ¶ 61,046, P 24 (2019).
[172] Answer at 3, 8.
[173] *Id.* at 3; *see* 33 U.S.C. § 1341(a)(1).
[174] *Id.* at 3–4, 9.

deadline that Section 401 forecloses,[175] which Exelon's Petition catalogs in painstaking detail and Exelon hereby incorporates by reference.[176]

Incomplete application. Riverkeepers also claim that MDE did not waive because Exelon's application supposedly was "incomplete when it was submitted, and remained so until Exelon finally provided the Sediment Study in 2017."[177] But for more than 30 years, the Commission has rejected such arguments. It adopted regulations that tie Section 401's one-year deadline to "the date the certifying agency received a written request for certification."[178] And it has dismissed the idea that Section 401's clock should run from when an application is "complete" under state law, emphasizing that this approach would "put the Commission in the frequently difficult posture of trying to ascertain and construe the procedural requirements of numerous and divergent state statutes and state agency regulations."[179] The Courts of Appeals have agreed, refusing to allow "states [to] blur [a] bright-line rule into a subjective standard."[180] And just recently, the Commission in *McMahan Hydroelectric* rejected an identical attempt to avoid *Hoopa Valley*—explaining that neither "North Carolina DEQ's request for additional information" nor "McMahan's Hydro's submittal of [this] information" could "delay the one-year clock."[181] Emphasizing that it had "deliberately extracted itself from deciding whether a certification

[175] *Hoopa Valley*, 913 F.3d at 1103.
[176] *See* Answer at 7–9.
[177] Riverkeepers Comments at 19.
[178] 18 C.F.R. § 4.34(b)(5)(iii).
[179] *Regulations Governing Submittal of Proposed Hydropower License Conditions and Other Matters*, Order No. 533, 56 Fed. Reg. 23,108, 23,127 (May 20, 1991); *see Hydroelectric Licensing Under the Federal Power Act*, 104 FERC ¶ 61,109, 2003 WL 21690792, at *50 (July 14, 2003).
[180] *N.Y. State Dep't of Envtl. Conservation v. FERC*, 884 F.3d 450, 456 (2d Cir. 2018).
[181] *McMahan Hydroelectric, LLC*, 168 FERC ¶ 61,185, P 38 (2019).

application is complete under state rules,"[182] the Commission declined to reverse course in light of *Hoopa Valley*. That holding disposes of Riverkeepers' argument.[183]

Application differences. Next, Riverkeepers claim that *Hoopa Valley* is inapplicable because "Exelon's [a]pplications [w]ere [s]ubstantially [d]ifferent."[184] This argument relies on the caveat in *Hoopa Valley* that the court there did not find it necessary to "determine how different a request must be to constitute a 'new request' such that it restarts the one-year clock."[185] Since *Hoopa Valley*, however, the Commission has repeatedly rejected arguments that alleged application differences were sufficient to evade *Hoopa Valley*. Instead, the Commission has reaffirmed that, absent "unusual circumstances," an application is "new" only if it reflects "major physical modifications to a project."[186] By contrast, "an applicant's submittal of information requested by the state certifying agency during the state's review of the certification request does not render the certification application a 'new' application" or trigger a new one-year period.[187]

Under the Commission's precedent, this case is straightforward. There has been no major physical modification to the Conowingo Project. The only differences that Riverkeepers identify is that the 2015 application "announced … the sediment study"; the 2016 application appended a new "fish passage" agreement; and the 2017 application included a "supplemental filing regarding

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[182] *Id.*

[183] If it mattered, moreover, there is nothing to the argument that Exelon's application was incomplete. Riverkeepers say that the 2014, 2015, and 2016 applications were incomplete only because they did not include the Sediment Study's results. But Riverkeepers do not identify anything—in any statute, regulation, or binding directive—requiring, with any specificity, Exelon's application to *provide* information like what the Sediment Study ultimately disclosed. And that, in short, is the problem with withdraw-and-resubmit. States fail to identify with specificity what information a "completed" application requires but then, after applications are submitted, threaten to deny certification unless applicants conduct years-long studies and withdraw-and-resubmit while they do. That approach cannot be squared with the one-year deadline Congress imposed in Section 401.

[184] *See* Riverkeepers Comments at 20.

[185] 913 F.3d at 1104.

[186] *Constitution Pipeline Co., LLC*, 169 FERC ¶ 61,199, P 25 n.73 (2019); *see McMahan Hydroelectric, LLC*, 168 FERC ¶ 61,185, P 38 & n.45 (2019).

[187] *Constitution Pipeline Co., LLC*, 169 FERC ¶ 61,199, P 25 (2019).

eel passage" and "increase[d] … minimum flows."[188] None of these tweaks constituted a "major physical modification[]." Here, as in *Constitution Pipeline*, Exelon's "submittal of information requested by [MDE] during the state's review of the certification request does not render the certification application a 'new' application."[189] Indeed, at risk of gilding the lily, if even *one* of the resubmitted applications was not "wholly new,"[190] as judged by the prior request, then MDE has waived. That is because Section 401 provides that, if a State "fails or refuses to act on a request for certification," then the State has "waived with respect to such Federal application."[191]

Intent. Last, Riverkeepers insist that there was no waiver because it believes that, supposedly unlike the States in *Hoopa Valley*, MDE had benign motives and was "not trying to circumvent congressional intent."[192] But again, the Commission has squarely rejected that argument, explaining that a "state's reason for delay" is "immaterial."[193] And correctly so. *Hoopa Valley* found waiver not because it deemed the States bad actors, but because when Section 401 requires action within a year, it means what it says.

b. <u>MDE Waived Because Its 2018 Certification Is Not "Act[ion]" Under Section 401.</u>

Exelon's Petition also explained that, even if Exelon's most recent 2017 filing were its only application, Maryland still waived. Section 401 requires States to "act[]" within one year.[194] Here, MDE issued a *document* within one year of Exelon's 2017 filing, but it failed to "act" in a manner sufficient to satisfy the federal-law requirements of Section 401. On April 27, 2018, MDE issued a document entitled "Clean Water Act Section 401 Certification for the Conowingo Hydroelectric

[188] Riverkeepers Comments at 20.
[189] 169 FERC ¶ 61,199, P 25 (2019).
[190] *Hoopa Valley*, 913 F.3d at 1104.
[191] 33 U.S.C. § 1341(a)(1).
[192] Riverkeepers Comments at 21.
[193] *Placer Cty. Water Agency*, 169 FERC ¶ 61046, P 20 (2019).
[194] 33 U.S.C. § 1341(a)(1).

Project."[195] But despite its caption, this document is a mere placeholder. It remains subject to *de novo* review and revision by MDE itself during a contested-case process that has not yet occurred. Only after that process could MDE itself—not some reviewing agency or court—issue the actual decision on Exelon's Section 401 application. Because Maryland has structured its process this way, its initial "certification" is not "action" within the meaning of Section 401.[196]

Under *Alcoa Power Generating Inc. v. FERC*,[197] that has to be the rule. *Alcoa* holds that "act[ion]" under Section 401 requires at least that the State provide something that reasonably "would allow the Commission to proceed with licensing."[198] Otherwise, the result is exactly the delay that Congress enacted Section 401's clock to avoid.[199] But licensing cannot reasonably be based on a placeholder "certification" that is still subject to *de novo* review within the state certifying agency.[200] When the State's process remains so incomplete, the Commission cannot reasonably make the decisions necessary to issue a license. Nor can the applicant reasonably decide whether to *accept* such a license.[201] This type of placeholder therefore is not "action" under Section 401.

Riverkeepers offer no genuine response. Instead, Riverkeepers attack a strawman, claiming that Exelon's position cannot be right because it would imply that no certification subject to an administrative or judicial appeal process can ever constitute "act[ion]."[202] This argument fails because MDE's process is not just any administrative appeals process—indeed, in substance,

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[195] *See supra* note 33.
[196] To be clear, this argument does not raise issues of state law. Exelon accepts, for purposes of argument here, that Maryland law permitted MDE to proceed in this manner. Exelon's argument is that, taking these state-law features of MDE's process as a given, MDE has not "act[ed]" within the meaning of federal law.
[197] 643 F.3d 963 (D.C. Cir. 2011).
[198] *Id.* at 972.
[199] *Id.*
[200] Petition at 28–29.
[201] Petition at 28–29; Answer at 28–29.
[202] Riverkeepers Comments at 22.

it is not an appeals process at all. In MDE's contested-case process, MDE itself—not some appellate administrative or judicial decisionmaker—claims *carte blanche* to adjust the certification's conditions up or down and to reach its ultimate decision on whether to issue a certification and what the conditions will be. That is not an appeals process, and a document that remains subject to such *de novo* revision is not "action" under Section 401.[203]

D. The Proposed Flow Regime Enhances Aquatic Habitat and Fish Passage.

1. The Proposed Flow Regime Appropriately Mitigates Project Impacts.

The FEIS analyzed at length the impacts of Project operations on aquatic habitat, fish migration, and fish stranding.[204] As a result of this comprehensive analysis, FERC Staff recommended increases to existing minimum flows to mitigate Project impacts. The FERC Staff alternative, however, did not recommend limitations on maximum generation flows or limitations on up-ramping or down-ramping, finding those measures were not required to mitigate impacts.

In contrast to FERC Staff's alternative, the TNC flow proposal would impose significant increases in minimum flows beyond those recommended in the FEIS; limitations on the magnitude of daily peaking flows; and limitations on the rates of down-ramping and up-ramping. TNC asserts that, among other things, the TNC flow regime is necessary to enhance habitat availability and reduce fish stranding downstream from Conowingo Dam.

While Exelon and MDE have not adopted the TNC proposal outright, the flow regime in the Joint Offer of Settlement does two things. *First*, it adopts the *elements* of the TNC proposal by increasing minimum flows, limiting the rate of ramping, and restricting Exelon's maximum

[203] Petition at 24–26; Answer at 26–28.

[204] *See* FEIS at 152–55. FERC Staff, in conducting a persistent-habitat analysis of existing conditions, considered natural flow variability by conducting persistent-habitat analysis to the 90% exceedance flow naturally occurring when a given species/life stage would be present in the river and the lower of the 10% exceedance flow or the plant design flow of 86,000 cfs. In conducting this analysis, FERC Staff found that the difference in persistent habitat between existing conditions and the TNC proposal was similar and that the ranges in persistent habitat overlapped for some life stages between the two flow scenarios. *Id.* at 154.

generation flows. The table below (Table 1) illustrates this, showing the overlapping elements of the TNC proposal and the Joint Offer of Settlement. *Second*, the flow regime in the Joint Offer of Settlement provides the same types of resource benefits as the TNC proposal, by enhancing the growth of submerged aquatic vegetation (SAV), reducing fish stranding, increasing aquatic habitat, protecting at-risk species, and facilitating fish passage. Thus, while the Joint Offer of Settlement does not mirror the TNC proposal in all ways, it adopts the same framework and provides many of the same ecological benefits. As important, the Joint Offer of Settlement more appropriately balances developmental and non-developmental considerations than does the TNC proposal.

TABLE 1

Period	TNC Proposal				Joint Offer of Settlement				FEIS Recommended Flow	
	Min Flow	Max Gen	Minimum Down-ramping	Maximum Up-ramping	Min Flow[3]	Max Gen	Minimum Down-ramping	Maximum Up-ramping	Min Flow[3]	Max Gen
Jan 1-31	11,000	86,000	20,000	40,000	4,000	86,000	12,000[4]	None	3,500	86,000
Feb 1-29	12,500	86,000	20,000	40,000	4,000	86,000	12,000[4]	None	3,500	86,000
Mar 1-15	30,000/	65,000	20,000	40,000	13,100	86,000	12,000[4]	40,000	3,500	86,000
Mar 16-31	24,000[1]				18,200	86,000				
Apr 1-30	35,000/ 29,000[1]	65,000	20,000	40,000	18,200	86,000	12,000[4]	40,000	10,000	86,000
May 1-31	25,500/ 17,500[1]	65,000	20,000	40,000	18,200	75,000	12,000[4]	40,000	7,500	86,000
Jun 1-15	14,000/	65,000	20,000	40,000	10,000	75,000	12,000[4]	40,000	7,500	86,000
Jun 16-30	10,000[1]				7,500	75,000			5,000	86,000
Jul 1-31	8,500/ 5,500[1]	65,000	10,000/20,000[2]	40,000	5,500	79,000	12,000[4]	40,000	5,000	86,000
Aug 1-31	6,000/ 4,500[1]	65,000	10,000/20,000[2]	40,000	4,000	79,000	12,000[4]	40,000	5,000	86,000
Sep 1-14	5,500/	65,000	10,000/20,000[2]	40,000	4,000	79,000	12,000[4]	40,000	5,000	86,000
Sep 15-30	3,500[1]								3.500	86,000
Oct 1-31	6,000	86,000	20,000	40,000	4,000	86,000	12,000[4]	40,000	3,500	86,000
Nov 1-30	11,000	86,000	20,000	40,000	4,000	86,000	12,000[4]	None	3,500	86,000
Dec 1-31	11,000	86,000	20,000	40,000	4,000	86,000	12,000[4]	None	3,500	86,000

[1] Higher value if natural flow is greater than the median flow, otherwise the lower value
[2] Lower value if Conowingo discharge less than 30,000; higher value if discharge less than 86,000
[3] Lesser of this value or natural inflow
[4] If Conowingo Discharge is less than 30,000 cfs

The Joint Offer of Settlement also provides a level of mitigation and enhancement that surpasses what was recommended in the FEIS and therefore significantly exceeds what is required under the FPA. For example, with the exception of the period between August 1 and September 14, all the required minimum flows in the Joint Offer of Settlement are higher than those previously

recommended by FERC Staff. For these reasons, and for the resource benefits described below, the flow regime proposed in the Joint Offer of Settlement should be adopted by the Commission and included in the new license.

2. The Proposed Minimum Flows Enhance Aquatic Habitat.

During the ILP, Exelon conducted study 3.16, *Instream Flow Habitat Below Conowingo Dam*,[205] to assess the effects of Project operations on habitat for fish and invertebrates. The study evaluated the Project's impact on different life stages of American shad, striped bass, shortnose sturgeon, smallmouth bass, several taxa of aquatic insects (mayflies, stoneflies, caddisflies), and freshwater mussels.[206] As the FEIS explained, "the study used the River2D model to simulate hydraulic conditions in a study reach extending from Conowingo Dam to the downstream end of Spencer Island (where tidal effects begin)."[207]

Using the results of this study, FERC Staff determined that certain flows may improve habitat for some species and life stages, while those same flows would reduce habitat for other species and life stages.[208] Selection of a flow regime requires balancing among the several target species and life stages to determine which life stage is most important for each time interval, as well as considering the effects of a flow regime on project power production and economics.

Using the relicensing study and the analysis by FERC Staff in the FEIS, Exelon focused its instream-flow evaluation on the spring migration and spawning period for American shad, river herring, and hickory shad. Each of these species uses the river downstream from Conowingo Dam for spawning,[209] and juveniles of these species (as well as gizzard shad) likely provide a seasonal

[205] *See id.* at 148 (citation omitted).
[206] *Id.*
[207] *Id.*
[208] *Id.* at 152.
[209] *Id.* at 149–50 (citation omitted).

source of forage for migratory striped bass. Enhancing flows during the spring has the potential to provide increases in the production of these anadromous species without constraining Project operation in other seasons, including the summer and winter seasons when there are peaks in the demand for power for cooling and heating.

Given these considerations, the enhanced flow measures in the Joint Offer of Settlement provide for increased flows during key periods, which balances developmental and non-developmental considerations. Under the Joint Offer of Settlement, Exelon's minimum flow releases would range from 4,000 cubic feet per second (cfs) in August to February, up to 18,200 cfs in late March, April, and May beginning in Year 4 of the new license.

Applying the analytical framework in the FEIS to these minimum flow measures demonstrates that the proposed flows are as protective as either the FEIS flow recommendations or the TNC proposal. To analyze flows, the FEIS utilized habitat models, developed by Exelon as part of the licensing study process, to evaluate the relationship between aquatic habitat (as measured by weighted usable area (WUA)) and flow when evaluating Exelon's original license proposal, as well as the proposal put forward by TNC.[210] Exelon duplicated FERC Staff's analysis; the results comparing the TNC and FEIS-recommended flows, and the flows proposed under the Joint Offer of Settlement, are set forth below in Table 2.

[210] *Id.* at 155–61.

TABLE 2

Month	Flow Range (cfs)					
	70% MWUA (All Species)	70% MWUA (Key Species)	Median Unregulated Flow	TNC	Joint OOS	FEIS Recommended Flow
Jan 1- 31	2,000 to 86,000	21,450 to 86,000	27,732	11,000 to 86,000	4,000 to 86,000	3,500 to 86,000
Feb 1-29	2,000 to 86,000	21,450 to 86,000	32,617	12,500 to 86,000	4,000 to 86,000	3,500 to 86,000
Mar 1-15	2,000 to 86,000	21,450 to 86,000	61,744	30,000/24,000 to 65,000	13,100 to 86,000	3,500 to 86,000
Mar 16-31	2,000 to 86,000	21,450 to 86,000			18,200 to 86,000	3,500 to 86,000
Apr 1-30	2,000 to 86,000	13,861 to 86,000	63,752	35,000/29,000 to 65,000	18,200 to 86,000	10,000 to 86,000
May 1-31	2,000 to 86,000	7,744[1] to 86,000	38,768	25,000/17,500 to 65,000	18,200 to 75,000	7,500 to 86,000
Jun 1-15	2,000 to 86,000	7,744[1] to 86,000	20,661	14,000/10,000 to 65,000	10,000 to 75,000	7,500 to 86,000
Jun 16-30	2,000 to 86,000	7,744[1] to 86,000			7,500 to 75,000	5,000 to 86,000
Jul 1- 31	2,000 to 86,000	2,000 to 86,000	13,045	8,500/5,500 to 65,000	5,500 to 79,000	5,000 to 86,000
Aug 1-31	2,000 to 86,000	2,000 to 86,000	9,201	6,000/4,500 to 65,000	4,000 to 79,000	5,000 to 86,000
Sep 1-14	2,000 to 86,000	2,000 to 86,000	7,995	5,500/3,500 to 65,000	4,000 to 79,000	5,000 to 86,000
Sep 15-30	2,000 to 86,000	2,000 to 86,000			4,000 to 79,000	3,500 to 86,000
Oct 1- 31	2,000 to 86,000	2,000 to 86,000	9,845	6,000 to 86,000	4,000 to 86,000	3,500 to 86,000
Nov 1-30	2,000 to 86,000	2,000 to 86,000	22,927	11,000 to 86,000	4,000 to 86,000	3,500 to 86,000
Dec 1-31	2,000 to 86,000	7,961 to 86,000	30,672	11,000 to 86,000	4,000 to 86,000	3,500 to 86,000

[1] Table 3-22 of the FEIS shows this value as 13,861; however, the FEIS appears to have omitted American Shad Fry when compiling these values.

When analyzing the relationship between habitat and flows, and focusing on a performance metric of 70% of maximum WUA, the flow-regime measures in the Joint Offer of Settlement meet this metric for all key species, except for the period December to March and the second half of June, which falls outside of the key spring period.[211] As noted in the FEIS, the period December

[211] However, in each of these cases, the Joint Offer of Settlement flows are higher than those recommended by FERC Staff.

to March impacts only adult striped bass, which the FEIS concludes is unlikely to be in the Susquehanna River during this period because of their preference for warmer temperatures found along the coastal areas of Virginia and North Carolina.[212] As to the second half of June, the Joint Offer of Settlement flow proposal of 7,500 cfs is just short of achieving 70% of maximum WUA.

Given the benefits of the flow regime for aquatic habitat downstream from Conowingo Dam, and the fact that Exelon has committed significant enhancements to flow in excess of what the FEIS determined was necessary to mitigate Project impacts to aquatic habitat, the Commission should reject TNC's flow proposal and adopt the flow regime set forth in the Joint Offer of Settlement.

3. The Joint Offer of Settlement Enhances SAV.

As described in the FEIS,[213] SAV downstream from Conowingo Dam is limited to areas that have finer-grained substrate or are protected from high water velocities associated with high river flows. Specifically, "[t]he highest concentrations of SAV are in the lower part of the river closer to the mouth of the river, where river levels are influenced by tidal flow from the Chesapeake Bay and velocities tend to be lower."[214] Portions of the river closest to the Conowingo Dam have a steeper gradient, a substrate of primarily bedrock and boulder, and consequently little SAV.

Accordingly, "SAV distribution downstream of the dam is more influenced by existing substrate conditions and natural high flow events, which have the potential to scour and redistribute finer-grained substrate, than by normal day-to-day project operation."[215] While normal peaking operations may result in discharges as high as 86,000 cfs (although USGS flow records indicate normal peaking operations seldom exceed a maximum discharge of 80,000 cfs and are often less

[212] FEIS at 156.
[213] *Id.* at 148.
[214] *Id.*
[215] *Id.*

than 70,000 cfs during the summer months), those typical peaking flows have less effect on scouring and substrate redistribution than typical annual high-flow events.[216] For example, monthly 10% exceedance flows are greater than 80,000 cfs in six months of the year (December through May), while maximum recorded flows representing natural high-flow events exceed 200,000 cfs in all months of the year, reaching the range of 400,000 to 600,000 cfs in many months.[217] These natural high-flow events are magnitudes greater than normal Project discharges. As a result, they have a greater effect on scour and substrate redistribution, and therefore affect the distribution of substrate suitable for SAV growth.

Given the limiting geomorphic and natural high-flow conditions, which are not determined by Project operations, the Joint Offer of Settlement provides off-license funding for SAV restoration projects. These restoration projects can be designed for implementation where they are sustainable and provide lasting benefits to the Chesapeake Bay.

4. The Proposed Flow Regime Will Address Fish Migration and Stranding.

Exelon's relicensing studies found little evidence of a relationship between operational flow releases and the ability of upstream migrating fish to find and enter the East and West Fish Lifts. Nevertheless, a reduction in the frequency and magnitude of flow fluctuations, as proposed in the Joint Offer of Settlement, could improve fish-passage efficiency. As the FEIS explained, "the results of radio telemetry studies conducted in 2010 and 2012 indicate that many American shad that migrate upstream to the tailrace area subsequently returned downriver within a few hours or days."[218] While this type of movement has been observed on other rivers unaffected by fluctuating flow releases from hydroelectric projects, it is possible that some of these migratory

[216] *Id.*
[217] *See id.* at 90 (Table 3-6).
[218] *Id.* at 150 (citation omitted).

fish would remain in the tailrace area for a longer time if the magnitude of operational flow changes were reduced during the migration season.[219] As a consequence, it may be easier for migratory fish to find and enter one of the fish lifts.

Similarly, while the stranding studies show that few fish are killed by stranding under existing operations,[220] increased flows and reduced fluctuations could reduce fish stranding. For this reason too, the flow measures in the Joint Offer of Settlement will provide additional benefits to aquatic species.

5. The Commission Should Incorporate the Exelon-MDE Flow Proposal.

The Joint Offer of Settlement, which adopts the same elements as the TNC flow proposal, (i) is based on studies in the record that were completed as part of the relicensing study process; (ii) considers the analysis in the FEIS; (iii) takes into account the geomorphology of the lower Susquehanna River; and (iv) takes into account the natural high flows that the lower Susquehanna River experiences regardless of Project operations. Moreover, the flow regime proposed by MDE and Exelon more than mitigates Project impacts, and no federal or state resource agency filed comments opposing the proposal. Therefore, the Commission should incorporate the flow proposal, without modification, into the new license.

6. Exelon Commits to Update the Commission Regarding PJM Consultations and Will Coordinate Implementation of the License with Resource Agencies.

Under the Joint Offer of Settlement, Exelon will operate the Project under the flow regime proposed by FERC Staff in the FEIS for the first three years of the new license. After the initial three years, Exelon will operate the Project under an enhanced flow regime that provides for increased minimum flows, restrictions on ramping, and limitations on maximum flows. The initial

[219] *Id.*
[220] *Id.*

three-year transition period is necessary for Exelon to coordinate with PJM Interconnection LLC (PJM) to ensure that the flow regime proposed for the remainder of the license term can be implemented in a manner consistent with PJM dispatch protocols, and without jeopardizing reliability or adversely impacting the markets administered by PJM.

In its comments, PFBC requests assurances that Exelon's coordination and consultation with PJM will result in the timely implementation of the enhanced flow regime at the start of the fourth year of the new license. Exelon has been in consultation with PJM about the proposed change in flows and is confident that it can implement the flow regime proposed in the Joint Offer of Settlement. To keep PFBC and other stakeholders apprised of its discussions with PJM, Exelon commits to file an informational report with the Commission during the first three years of the new license to detail its progress transitioning to the enhanced flow regime.

Additionally, in response to requests from PFBC, PADEP, and DOI for greater coordination on the implementation of American eel measures, freshwater mussels, and invasive-species measures, Exelon commits to keep state and federal resource agencies informed as these measures are planned and executed. Exelon recognizes the expertise of the resource agencies and will consult with them throughout the license term to ensure that investments in these resource measures are optimized. Exelon intends to coordinate through emails, calls, and meetings, as well as through forums such as SRAFRC and the Eel Passage Advisory Group. Exelon does not believe the Proposed License Articles need to be revised to reflect this commitment; rather, Exelon views coordination with resource agencies as a Best Management Practice that the company currently employs and will continue to employ throughout the term of the new license.

E. The Challenges to the Joint Offer of Settlement Based on "Scour" and Downstream Water Quality Lack Merit.

1. The Joint Offer of Settlement Satisfies the FPA as to "Scour."

CBF and other Commenters oppose the Joint Offer of Settlement on the ground that it does not adequately mitigate water-quality impacts in the Chesapeake Bay caused by large storms that "scour" the bottom of the Conowingo Reservoir. For reasons explained below, that argument lacks merit, as the Commenters ignore the source of the pollutants, which are all from upstream, and grossly exaggerate the actual impact of "scour" on downstream water quality.[221]

The Commenters' "scour" theory posits that intense storms dislodge sediment and associated nutrients (such as nitrogen and phosphorus) from the bottom of the Conowingo Reservoir (which is not as deep as it once was), and when the nutrients are deposited dozens of miles downstream in the central Chesapeake Bay they stimulate the growth of algae, which eventually decays, creating "dead zones" with low dissolved-oxygen levels that can harm fish and shellfish. And the Commenters surmise that these "scour"-inducing storm events will become larger and more frequent due to climate change.[222]

But to begin, any sediment or nutrients that might be "scoured" from the Conowingo Reservoir bottom do not originate from the Project, which does not generate those pollutants. Rather, their sources are located well upstream from the Project in Pennsylvania and New York,[223] where nitrogen and phosphorus enter the Susquehanna River mostly through agricultural or urban

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[221] *See infra* Part IV-E-3.

[222] *See* CBF Comments at 4–5, 19; Riverkeepers Comments at 4, 6–7, 24–25; *see also* TNC Comments at 35 (referring to changing hydrologic conditions). Riverkeepers also mention regional temperature increases, but do not explain their connection to Project impacts. Riverkeepers Comments at 6.

[223] *See* Chesapeake Bay Program Chesapeake Assessment Scenario Tool (CAST), *available at* https://cast.chesapeakebay.net/PublicReports# (Public Reports, Report Type = Loads Report, Geographic Scale = State Basin-Area in CBWS only, Scenarios = 2018 Progress, Aggregations = All Sources—All Agencies) (showing that for all 2018 Susquehanna River loads, Pennsylvania and New York, respectively, were responsible for 86% and 13% of the nitrogen (Bay edge-of-tide) and 83% and 15% of the phosphorus loads).

runoff. Indeed, CBF's own figures suggest that the two leading contributors to nitrogen pollution in the Bay are agricultural runoff (45%) and urban stormwater runoff (17%), both of which are generated by multiple sources throughout the watershed.[224]

At the outset, there is an issue whether scour is properly considered a Project impact, because, as FERC Staff recognized, the pollution "is a watershed issue," with all the material impounded by the Dam introduced by polluters upstream from the Project, and with the Project itself powerless to control that pollution.[225] But as also explained below, the record shows that the Project is not responsible for any net harm to the Bay resulting from its impoundment of this pollution caused by others; rather, the Project mitigates the effects of that pollution by first trapping it and withholding it from the Bay, during which time the pollution becomes less bioreactive, less plentiful (for example, due to release into the atmosphere), and therefore less harmful.[226]

And to the extent climate change worsens the "watershed issue" that FERC Staff identified, the Project—as a source of renewable electricity "that does not contribute to atmospheric pollution"[227]—mitigates rather than exacerbates the drivers of climate change. Because the Project's operation "displaces generation from non-renewable sources" and avoids "power plant emissions," it "creat[es] environmental benefits"[228] for the region and for the planet.[229]

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[224] *See* Chesapeake Bay Foundation, *What Is Killing the Bay?*, *available at* https://www.cbf.org/how-we-save-the-bay/chesapeake-clean-water-blueprint/what-is-killing-the-bay.html (last accessed Jan. 29, 2020). Note that CBF's assessment of "what is killing the Bay" does not so much as mention the Conowingo Project.

[225] FEIS at 138.

[226] *See infra* Part IV-E-3.

[227] FEIS at xlii, 389.

[228] *Id.* at 5.

[229] To the extent there are any other climate-change-related issues implicated here "over the course of the decades-long license" Exelon has requested, there are few "resources … available for the evaluation of future climate change effects as they specifically relate to the projects," as the FEIS explained. FEIS Appendix H at H-45. While the Commission must complete some "reasonable forecasting" of an action's future impact, *see Dominion Transmission, Inc.*, 156 FERC ¶ 61,140, P 43 (2016) (quoting *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1078 (9th Cir. 2011)), it has done so here with respect to scour impacts. The Commission is not required to go further and "engage in speculative analysis or to do the impractical, if not enough information is available to permit meaningful consideration" of the issue. *Id.* (internal quotation marks omitted).

Moreover, the Commenters' scour-based objections have already been addressed: FERC Staff's FEIS "devote[d] considerable discussion to water quality" and specifically responded to concerns "that increased nutrient loading resulting from scour events behind Conowingo dam results in serious impairments for dissolved oxygen."[230] The FEIS paid close attention to the scour mechanism that concerns the Commenters, and it agreed with the insights of the scientists from the U.S. Army Corps of Engineers and MDE who jointly drafted the Lower Susquehanna River Watershed Assessment (LSRWA).[231] Using three model packages,[232] the LSRWA examined the "potential water quality effects on the upper Chesapeake Bay of a scouring event"[233] and determined that the effects on water-quality parameters were "small," especially when compared to the cost of suggested management options.[234] As the FEIS explained, this analysis specifically addressed comments about "sediment mobilization during high-flow events."[235]

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[230] FEIS Appendix H at H-17, H-18.

[231] U.S. Army Corps of Engineers & Maryland Dep't of the Envmt., *Lower Susquehanna River Watershed Assessment, Maryland and Pennsylvania: Phase I* at 143 (Oct. 2014 Draft) [Draft LSRWA]. This study is part of the record in this proceeding. *See* U.S. Environmental Protection Agency, *Supplemental Information to the EPA 12/29/2014 Comment Letter for the Draft Environmental Impact Statement for the York Haven, Muddy Run, Conowingo Projects* (Dec. 29, 2014), Docket No. P-405-106, Accession No. 20141231-0015; *see also* FERC, Office of Energy Projects, *Response to Clean Chesapeake Coalition's Request to Not Include the Draft Lower Susquehanna River Watershed Assessment in the Administrative Record* (Jan. 23, 2015), Docket No. P-405-106 (noting that the LSRWA study was "properly filed" and "became part of the record"). The final LSRWA report issued after the completion of the FEIS is attached to these Reply Comments as Exhibit 1 [hereinafter "Final LSRWA"].

[232] *See* Draft LSRWA Chapter 3 at 32–44 (discussing the HEC-RAS model of reservoir sediment dynamics, the AdH model of hydrodynamics and sediment transport, and the CBEMP model of water quality and habitat quality in Chesapeake Bay); Final LSRWA Chapter 3 at 31–44.

[233] FEIS at 138.

[234] *Id.* at 138–39; *see also* Draft LSRWA Chapter 4 at 88–89; Final LSRWA Chapter 4 at 93–95.

[235] *See* FEIS Attachment H at H-11 to H-14. To the extent Riverkeepers criticize the LSRWA's modeling exercise in Exhibit M to their Comments, the same concerns were presented to the LSRWA modeling team at the time of that study. *See* Final LSRWA Attachment I-7: Stakeholder Review Comments and Responses at I-7-150 (May 2015), *available at* https://dnr.maryland.gov/waters/bay/Documents/LSRWA/Reports/AppI7.pdf. The LSRWA modeling team explained that the type of modeling options that Riverkeepers now seem to endorse would at best "be highly subjective based on the uncertainty of the input data" or be "a very first cut estimate" of storm impacts. *Id*. at I-7-152. Even if the modeling effort could overcome the "lack of available data" and somehow manage to properly calibrate model simulations, "the simulations would still have high uncertainty and … would not provide additional management insight." *Id.* at I-7-150. Thus, the LSRWA team concluded there was no need to "further clarify" a possible worst-case scenario and that the alternative modeling results would fail to "aid in decision-making" in any meaningful way. *Id.*

The FEIS also specifically addressed the argument advanced now by CCC and Riverkeepers that dredging would be an appropriate response to the possibility that nutrients and sediment "accumulated behind Conowingo dam … could be scoured during high water and transported into the Chesapeake Bay."[236] The FEIS concluded that dredging "Conowingo Pond would not be a cost effective alternative for mitigating sediment and nutrient transport to the Bay."[237] FERC Staff credited the LSRWA's conclusions that dredging would produce benefits that "are minimal and short-lived," would involve "costs [that are] very high," and thus "would be cost prohibitive and ineffective."[238] The FEIS found "no justification … for requiring Exelon to implement measures such as dredging to help control sediment and nutrient loading," given that the Bay's problems are "watershed-wide issue[s]" that "would occur in the long term whether or not Conowingo dam was in place."[239] Hence, the FEIS recommended an action alternative that was less environmentally beneficial than the actions that Exelon has now committed to take under the Joint Offer of Settlement.[240] The Commission should follow the FEIS and conclude that the new license should not be conditioned on further mitigation of scour-related impacts.

2. The Joint Offer of Settlement Cannot Violate the CWA.

CBF incorrectly suggests that the Joint Offer of Settlement violates the CWA because it does not assure compliance with the water-quality standards enumerated in Section 401. But this argument misreads Section 401. The CWA, as well as the state water-quality standards that it

[236] FEIS Attachment H at H-31; *see* CCC Comments at 13–15 (discussing scour and calling for dredging); *see also* Riverkeepers Comments at 24 & nn.100–01 (similar).

[237] FEIS Attachment H at H-31; FEIS at 139.

[238] *See* FEIS at 80, 139. In terms of management strategies, the Draft LSRWA estimated that dredging could cost as much as "$267 million annually just to keep up with the annual sediment load." *Id.* at 80; Draft LSRWA Chapter 8 at 158; Final LSRWA Chapter 8 at 163.

[239] FEIS at 139. The FEIS also concluded that "changes in Conowingo Project structures and operation are not viable solutions to the sediment transport issue." *Id.* at 80.

[240] *See supra* Parts IV-A, IV-B.

incorporates by reference, are irrelevant here because, under the Joint Offer of Settlement, MDE waives its right under Section 401 to impose conditions on the Project's license.[241] Congress designed Section 401 to give States the opportunity to weigh in on federally licensed or permitted projects where a comprehensive federal regulatory regime, like the FPA, would otherwise preempt any state role.[242] Congress did not require States to avail themselves of this opportunity, much less provide that if States choose to waive, the Commission or other federal agencies must exercise the States' authority in their stead.

Here, Maryland had a full opportunity under Section 401 to impose certain conditions on the Project's new license. But instead, Maryland decided—in light of the legal vulnerabilities in its 2018 Certification, and the significant benefits the Joint Offer of Settlement brings—that it could best achieve its environmental objectives by waiving its right to issue a certification, as Congress authorized when it wrote waiver language into Section 401.[243] In other cases where States have waived (either affirmatively or through inaction), the Commission has not regarded itself as bound to enforce the CWA provisions enumerated in Section 401, much less any state water-quality standard that might be encompassed by one of those provisions.[244] There is no basis for a different result here. All that remains is for the Commission to exercise its plenary authority under the FPA. Hence, the Comments from CBF and others that invoke Section 401 and Maryland's water-quality standards are irrelevant at this stage of the proceeding.

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[241] *See supra* Part IV-C (analyzing MDE's waiver).

[242] *See First Iowa Hydro-Elec. Co-op. v. FPC*, 328 U.S. 152, 163–82 (1946); *see also PUD No. 1 of Jefferson Cty. v. Wash. Dep't of Ecology*, 511 U.S. 700, 722 (1994) (noting State's inability to impose conditions on a federal hydroelectric license absent Section 401); *Sayles Hydro Assocs. v. Maughan*, 985 F.2d 451, 456 (9th Cir. 1993) (holding that the FPA "occupied the field, preventing state regulation").

[243] 33 U.S.C. § 1341(a)(1).

[244] *See, e.g.*, *McMahan Hydroelectric, LLC*, 168 FERC ¶ 61,185 (2019); *Central Vermont Pub. Serv. Corp.*, 111 FERC ¶ 62,313, at PP 1, 20–21, 30, 68 (2005) (office director order), *modifying license on other grounds*, 113 FERC ¶ 61,167 (2005).

In any event, even if the Commission wished to examine the substantive requirements of Section 401 or Maryland's water-quality laws, it would find nothing problematic. The "scour" issue turns out to be quite narrow and, upon close examination, far less significant than the Commenters' rhetoric would suggest.

To be clear, the only seriously contested issue is the impact of two nutrients—nitrogen and phosphorus—on the intermittently low dissolved-oxygen levels in two of the nine segments of the Chesapeake Bay, more than 50 miles downstream from the Project. MDE's 2018 Certification never claimed that *sediment* discharges from the Project violated the CWA or state water-quality standards in the River, the Bay, or anywhere else. And as for the separate issue of nutrients—specifically, nitrogen and phosphorus—MDE never claimed that their discharge from the Project violated any water-quality standard in the Susquehanna River (as opposed to standards governing the Bay).

As for the impact of nutrients on dissolved-oxygen levels in parts of the central Bay, the first and critical point is that the Project is not the source of those nutrients. As explained above, those pollutants are introduced into the water by sources far upstream from the Project, largely from agricultural operations, sewage treatment plants, and urban runoff. As the Federal District Court in the District of Columbia put it, "[t]he Conowingo Project adds no phosphorus or nitrogen to the Susquehanna River; it only passes the water along."[245]

The Commenters also fail to grapple with the fact that neither the CWA nor any other source of law places responsibility on a hydroelectric project's operator for pollution added to the water by others.[246] As EPA explained when proposing its new rule implementing CWA Section

[245] *Exelon Generation Co., LLC v. Grumbles*, 380 F. Supp. 3d 1, 3 (D.D.C. 2019).

[246] CBF also takes issue with MDE's agreement, as part of the Joint Offer of Settlement, not to seek to impose additional nutrient- or sediment-related measures or funding requirements for "nutrients or sediment originating from sources outside the Project," as part of any National Pollutant Discharge Elimination System (NPDES) permit or state

401, "certification conditions that purport to require project proponents to address pollutants that are not discharged from the construction or operation of a federally licensed or permitted project" are "inconsistent with the authority provided by Congress."[247] The CWA cannot be twisted "to yield facility improvements or payments from project proponents that are unrelated to [the project's] water quality impacts."[248]

EPA's position is consistent with rulings from state and federal courts—and commentary from academics and experts—agreeing that Section 401 does not permit a State to condition a federal license or otherwise regulate a hydroelectric project unless those regulations are crafted to address changes in water quality *directly caused* by the project's operation.[249] For that reason, the

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discharge permit for the Project. *See* CBF Comments at 10–11 (citing Agreement § 3.6(a)). CBF argues that the Commission cannot approve the Offer without demanding an express definition of the phrase "originating from sources outside the Project" that "exclude[s] material trapped behind the Dam," because that material would not be there but for the Dam, making Exelon responsible for the material's water-quality impacts. *Id.* at 11. CBF further claims that the CWA circumscribes MDE's ability to waive its NPDES permitting responsibility because "it is highly probable" that the Project will discharge pollutants over the license term. *Id.* at 12. But as explained in detail in this section, Exelon cannot be made responsible for the water-quality impacts of nutrients and sediment behind the Dam, because the Project does not generate those nutrients or sediment. *See supra* at 54–55.

In any event, the chief flaw in CBF's argument is that NPDES permitting is required only "for the discharge of any pollutant." 33 U.S.C. § 1342(a). The term "discharge of a pollutant" is defined in the CWA to mean "any *addition* of any pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12) (emphasis added). The Supreme Court held in *South Florida Water Management District v. Miccosukee Tribe of Indians* that no "addition" of a pollutant occurs when, as here, the relevant pollutants are contained in water that is itself transferred between "two parts of the same water body" via the project in question. 541 U.S. 95, 109 (2004); *accord L.A. Cty. Flood Control Dist. v. Nat. Res. Def. Council*, 568 U.S. 78, 83 (2013). In this case, because the Project does not work an "addition" of pollutants as that term is construed in *Miccosukee*, it has not engaged in the "discharge of a pollutant" and thus cannot be subjected to NPDES permitting for the transfer of nutrients and sediment that originated upstream and were previously "trapped behind the Dam." For this reason, the Agreement merely restates what the law already provides: MDE has no authority to require Exelon to remediate pollutants added to the River not by the Project, but by "sources outside" of it.

[247] *Updating Regulations on Water Quality Certification*, Proposed Rule, 84 Fed. Reg. 44,080, 44,105 (Aug. 22, 2019).

[248] *Id.*; *see id.* at 44,094 (noting that Congress did not authorize States to impose "payments to state agencies for improvements or enhancements that are unrelated to the proposed [project]"); *see also* Comments of Exelon Generation Co., LLC, Docket No. EPA-HQ-OW-2019-0405 (Oct. 21, 2019); Comments of Exelon Generation Co., LLC, Docket No. EPA-HQ-OW-2018-0855 (May 24, 2019).

[249] *See, e.g.*, Debra L. Donahue, *The Untapped Power of Clean Water Act Section 401*, 23 Ecology L.Q. 201, 213, 253–57 & nn.296–308 (1996) (citing cases and documenting appropriate Section 401 conditions for hydroelectric facilities, including conditions designed to implement anti-degradation regulations, streamflow and fish-protection requirements, and conditions designed to mitigate a project's impacts on erosion, vegetation, and grading); *cf. Am. Iron & Steel Institute v. EPA*, 526 F.2d 1027, 1056 (3d Cir. 1975) (holding that EPA could not impose effluent limitations without adjusting them for pollution already in the water, because otherwise the party subject to the limitations "would be forced to clean up water that had already been polluted by other companies").

guiding principle for courts tasked with determining the propriety of Section 401 certification conditions has been whether the condition was designed to directly address the effects of the licensee's activity.[250] When a certification condition or other state regulation does not relate directly to a licensee's activity, courts have not hesitated to invalidate the condition.[251]

FERC, too, has confirmed that conditions not related directly to the licensee's "activity" are improper under Section 401. Indeed, FERC has often noted that conditions "unrelated" to a project's activities are not proper Section 401 limitations.[252] So even if Section 401 and Maryland's state water-quality laws applied here—which they do not—the Joint Offer of Settlement would still be appropriate.

3. The Commenters' Descriptions of the Dam's Downstream Water-Quality Impacts Are Rife with Errors.

a. The Commenters' Descriptions Do Not Comport with Scientific Findings on Conowingo and the Chesapeake Bay.

CBF, Riverkeepers, TNC, and CCC all claim that "scour" makes the Conowingo Project a grave threat to the health of the Chesapeake Bay. But those claims are rife with scientific errors.

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[250] *See, e.g.*, *Delaware Riverkeeper Network v. Secretary of the Penn. Dep't of Envtl. Prot.*, 833 F.3d 360, 386 (3d Cir. 2016); *In re 401 Water Quality Certification*, 822 N.W.2d 676, 678, 689 (Minn. Ct. App. 2012); *Port of Oswego Auth. v. Grannis*, 897 N.Y.S.2d 736, 738 (N.Y. App. Div. 3d Dep't 2010); *O'Hagan v. State*, No. 28897–4–II, 2003 WL 22962168, at *2 (Wash Ct. App. Dec. 16, 2003); *Family Dev., Ltd. v. Steuben Cty. Waste Watchers, Inc.*, 749 N.E.2d 1243, 1246, 1260 (Ind. Ct. App. 2001); *Interstate Properties v. Schregardus*, No. 99AP-249, 1999 WL 1267309, at *2 (Ohio Ct. App. Dec. 30, 1999); *Friends of the Earth v. U.S. Navy*, 841 F.2d 927, 929 (9th Cir. 1988).

[251] *See, e.g.*, *Port of Seattle v. Pollution Control Hearings Bd.*, 90 P.3d 659, 681 (Wash. 2004) (overturning a streamflow condition that would have "required that the Port do more than offset the impact of the [project being licensed]"); *see also* 17 A.L.R. FED. 2D 309 § 23 (2007) (discussing *Port of Seattle* and noting that conditions are impermissible when they more than "offset[] the expected impact of the project"); *id.* §§ 19, 21, 26 (cataloging inappropriate conditions).

[252] *See, e.g.*, *Portland Gen. Elec. Co.*, 133 FERC 62,281, P 57 (2010); *Pub. Utility Dist. No. 1 of Snohomish Cty., Wash.*, 136 FERC 62,188, P 92 (2011); *Pub. Utility Dist. No. 1 of Douglas Cty., Wash.*, 141 FERC 62,104, P 53 (2012); *see also Mitchell Cty. Conservation Bd.*, 77 FERC 62202, 64458 n.4 (1996) (refusing to require a hydropower licensee to spend project revenues on improvements at county parks that were "unrelated to the project" being licensed).

The evidence shows that the Conowingo Project's benefits to the Bay have exceeded any harms and that the specific concerns raised by the Commenters are inaccurate or exaggerated.

The Commenters overstate the amount of nutrients entering the Bay due to scour in the Conowingo Reservoir, as compared to other sources. And they also elide key distinctions—not only between sediment and nutrients, but also between dissolved nutrients and particulate nutrients, and between particulate nutrients that are "bioavailable" and those that are biologically "inert."

Here are the facts:

First, the Conowingo Dam has historically had a positive impact on the Chesapeake Bay's water quality because it blocks pollutants that otherwise would reach the Bay. Over its 90-year history, the Dam has trapped hundreds of millions of tons of sediment and nutrients, preventing them from entering the Bay and providing long-term benefits to the Bay's water quality.[253]

Just this November, the peer-reviewed journal of the Coastal and Estuarine Research Federation, *Estuaries and Coasts*, published a paper by a team of five scientists from the University of Maryland Center for Environmental Science (UMCES) that made this exact point.[254] After reviewing the extensive literature on Conowingo and the Bay (much of which was also reviewed in preparing the FEIS) and synthesizing field observations, model results, and long-term

[253] "Since construction of Conowingo Dam in 1929 through 2012, approximately 470 million tons of sediment was transported down the Susquehanna River into the reservoir system, approximately 280 million tons were trapped, and approximately 190 million tons were transported to Chesapeake Bay." Michael J. Langland, *Sediment Transport and Capacity Change in Three Reservoirs, Lower Susquehanna River Basin, Pennsylvania and Maryland, 1900–2012* at 1, U.S. Geological Survey Open-File Report 2014–1235 (2015) [hereinafter "Langland 2015"], *available at* http://dx.doi.org/10.3133/ofr20141235, *attached as* Ex. 2.

[254] *See* Cindy M. Palinkas, Jeremy M. Testa, Jeffrey C. Cornwell, Ming Li & Lawrence P. Sanford, *Influences of a River Dam on Delivery and Fate of Sediments and Particulate Nutrients to the Adjacent Estuary: Case Study of Conowingo Dam and Chesapeake Bay*, 42 ESTUARIES AND COASTS 2072, 2074–75, 2091 (2019) [hereinafter "UMCES Study"], *attached as* Ex. 3. The paper's authors were supported by grants from Maryland Sea Grant (from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce); the Grayce B. Kerr Fund; and Exelon through MDNR. *See id.* at 2091.

monitoring data,[255] the UMCES scientists found that, for 90 years, the Reservoir and Dam have trapped Susquehanna River basin sediment and associated particulate nitrogen and phosphorus before they could reach the Bay.[256] Indeed, they wrote, "[s]edimentation rates in the upper Bay [the portion closest to the mouth of the Susquehanna River] … decreased after 1930 due to" factors including "construction of the Conowingo Dam."[257] The UMCES scientists thus referred to Conowingo's long history as "a nutrient and sediment sink" and "an unintended watershed BMP [best management practice]."[258]

More recently, due to infilling of sediment originating upstream, the Dam has less trapping capacity, though it still offers continued benefits for downstream water quality, as explained below. From the 1980s through 2013, annual median total nitrogen and total phosphorus exiting from Conowingo was less than or roughly equal to the amounts flowing downriver toward Conowingo from Pennsylvania.[259] This has remained true even in more recent years, as the reservoirs on the Lower Susquehanna River were recognized to be in a state of "dynamic equilibrium."[260] That term refers to the stage when a reservoir's sediment outflows over a long period (such as a decade or more) are roughly equal to sediment inflows.[261]

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[255] *See id.* at 2076, 2091–95.

[256] *See id.* at 2074.

[257] *Id.* at 2075.

[258] *Id.* at 2091.

[259] *See* Qian Zhang, Robert M. Hirsch & William P. Ball, *Long-Term Changes in Sediment and Nutrient Delivery from Conowingo Dam to Chesapeake Bay: Effects of Reservoir Sedimentation*, 50 Envtl. Sci. & Tech. 1877, 1881 & fig. 3 (2016), *attached as* Ex. 4.

[260] *See* Lew Linker, Gopal Bhatt & the CBP [Chesapeake Bay Program] Modeling Team, *Results of Latest Phase 6 Conowingo Analysis* 6 (Sept. 13, 2017) [hereinafter "Linker et al."] ("Conowingo is nearing dynamic equilibrium, which has reduced its ability to trap sediment and nutrients."), *attached as* Ex. 19; *id.* at 15 (showing dynamic-equilibrium transport factors just below 1.00, meaning that input barely exceeds output).

[261] *See* Final LSRWA at ES-3.

Second, other than normal erosion and runoff from Project lands adjacent to the River, the Conowingo Project itself produces zero sediment, zero nitrogen, and zero phosphorus.[262] Roughly the same amount of each of those pollutants would flow into the Susquehanna River with or without the Dam. The reason large amounts of nutrients and sediment are entering the Chesapeake Bay from the lower Susquehanna River is because they are being loaded into the River upstream in Pennsylvania and (to a lesser extent) New York. The more nutrients loaded into the River in the upstream States, the more will eventually enter the Bay.[263]

Third, the argument from CBF and other Commenters that the Conowingo Project harms the Bay by altering the timing of the nutrients' delivery to the Bay[264]—the only manner in which the Project could have an effect—lacks support in sound science because it ignores some significant distinctions. One key distinction differentiates particulate nutrients from dissolved nutrients. Particulate nutrients are the focus of the "scour" theory. But the bulk of nutrients that pass the Dam, including the vast majority of the nitrogen and much of the phosphorus, are dissolved in the river water.[265] These dissolved nutrients freely flow with the water, through the Dam's turbines or over its crest gates (when they are open).[266] The Conowingo Dam slows the

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[262] FEIS at 74, 77; *see also* Lee Currey, *Conowingo Dam Infill: How Much, Who, How, and By When*, *in* Chesapeake Bay 2017 Midpoint Assessment—Policy Issues for Partnership Decisions 346 (Dec. 4–5, 2017), *available at* https://www.chesapeakebay.net/channel_files/25782/wqgit_dec_4-5_2017_mpa_policy_decisions_briefing_presentation_story_board-12.3.17_jsadd.pdf, *attached as* Ex. 5.

[263] Addressing Conowingo, Dr. William Ball, director of the Chesapeake Research Consortium, has stated that "[t]he most effective approach has always been to better manage upstream sources." David McFadden, *Experts Warn of "Dead Zone" in Chesapeake Bay from Pollution*, Associated Press (July 6, 2019), *available at* https://apnews.com/fcc685b8e1f048eea5edd0e606493cf5, *attached as* Ex. 6.

[264] *See, e.g.*, CBF Comments at 4–5; Riverkeepers Comments at 6–7, 10, 24; TNC Comments at 33.

[265] *See* Qian Zhang & William P. Ball, *Data Associated with Decadal-Scale Export of Nitrogen, Phosphorus, and Sediment from the Susquehanna River Basin, USA: Analysis and Synthesis of Temporal and Spatial Patterns*, Version 1 (2016), Johns Hopkins University Data Archive [hereinafter "Zhang & Ball Data Archive"] (File A3), *available at* http://dx.doi.org/10.7281/T1QN64NW, *attached as* Ex. 7; Zhang, Hirsch & Ball, *supra* note 259, at 1877.

[266] Exelon appreciates that the Chesapeake Bay Program's Scientific and Technical Advisory Committee (STAC) raises no "specific concerns with the written [settlement] agreement," and Exelon supports STAC's recommendation that MDE consider using some funds from the settlement's non-license commitments to monitor and assess the flux and impact of dissolved phosphorus in the Susquehanna River and the upper Chesapeake Bay. *See* STAC Comments at 1–2.

River's flow, which in turn increases "denitrification," the escape of dissolved nitrogen into the air.[267] So the amount of dissolved nitrogen flowing away from the Dam and toward the Bay is usually *less* than the amount flowing toward the Dam from Pennsylvania.[268] Thus, the Dam's impact on the amount of dissolved nitrogen transported downstream is helpful, not harmful.

Fourth, this net decrease in dissolved nitrogen is important because of another key distinction that the Commenters ignore: the difference between "bioavailable" nutrients and "biologically inert" nutrients. Dissolved forms of nitrogen and phosphorus are the most immediately bioavailable forms for algal consumption, which is what ultimately contributes to decreased dissolved-oxygen levels in the central Bay.[269] So, generally, the Dam actually *reduces* the supply of the very nutrients that have the most significant harmful impacts on water quality in the Bay—the dissolved nutrients. This is why the LSRWA study conducted jointly by the Army Corps of Engineers and MDE found that the Bay's dissolved-oxygen level is "uniformly higher" with the Dam and Reservoir in place than it would be without them.[270]

Fifth, all of this remains true both before and after the Dam reaches "dynamic equilibrium," and both in normal years and in years with massive floods or storms, like Hurricane Ivan in 2004 or Tropical Storm Lee in 2011. Of course, in a year like 2004 or 2011, there is more runoff throughout the entire Susquehanna River basin, so more water and more dissolved nutrients enter the River and flow down to the Reservoir.[271] But it is still true, even in a storm-heavy year, that

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[267] *See* Qian Zhang, William P. Ball & Douglas L. Moyer, *Decadal-Scale Export of Nitrogen, Phosphorus, and Sediment from the Susquehanna River Basin, USA: Analysis and Synthesis of Temporal and Spatial Patterns*, 563–564 Sci. of the Total Environment 1016, 1027 (2016), *attached as* Ex. 8.

[268] *See* Zhang & Ball Data Archive, *supra* note 265, Ex. 7; Zhang, Hirsch & Ball, *supra* note 259, at 1877, 1881.

[269] *See* Currey, *supra* note 262, at 346; Qian Zhang, Damian C. Brady & William P. Ball, *Long-Term Seasonal Trends of Nitrogen, Phosphorus, and Suspended Load from the Non-Tidal Susquehanna River Basin to Chesapeake Bay*, 452–453 Science of the Total Environment 208, 217 (2013), *attached as* Ex. 9.

[270] Final LSRWA Appendix C at 53 & figure 6-42.

[271] *See* Zhang & Ball Data Archive (File A3) (SRB_load_estimates_output, MAR_DN_Annual_estimates.csv (Susquehanna River at Marietta) and CONE_DN_Annual_estimates.csv (Conestoga River), "load(true), kg/day") (showing that 2004 and 2011 had high amounts of dissolved nitrogen), *supra* note 265, Ex. 7.

the amount of dissolved nutrients leaving the Reservoir (and heading toward the Bay) is similar to or less than the amount entering the Reservoir (again due to denitrification).[272] So, year in and year out, the Dam is, at worst, neutral for dissolved phosphorus and is either neutral or positively helpful to the Bay for dissolved nitrogen. And, to reiterate, most of the nutrients passing through the Dam, including the vast majority of nitrogen, are dissolved.

Sixth, as to particulate (non-dissolved) nutrients, the Comments again ignore the key distinction between bioavailable and biologically inert particulate nutrients. As explained above, it is the bioavailable nutrients that contribute significantly to the central Bay's algae blooms, which in turn suppress the dissolved-oxygen level there. Yet the particulate nutrients that rest on the bottom of the Conowingo Reservoir and get scoured only during large storm events are relatively inert.[273] Scour of this relatively inert particulate nitrogen has a negligible impact on the Bay's water quality because it is not readily bioavailable for algal consumption.[274] This is one of several reasons why the Commenters' narrative about the dangers of scour during large storm events at Conowingo is misguided.

Seventh, on the relatively rare days when the Dam's crest gates are open and flows are high enough to "scour" the Reservoir bottom, the team of UMCES scientists found that "the potential biogeochemical impacts of these elevated inputs are limited in time and space for several reasons."[275] The first reason is that an overwhelming majority of the pollutant loads during a major

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[272] *See id.* (showing similar or lesser amounts of dissolved nitrogen exiting Conowingo, compared to the amounts entering the lower Susquehanna from Marietta and Conestoga). This finding uses the same method used by Zhang, Hirsch & Ball, *supra* note 259, at 1879, to account for nutrient loading from the small land area between Marietta and Conowingo.

[273] *See* UMCES Study, *supra* note 254, at 2081 (explaining that G3 material is relatively inert, compared with G1 or G2); Linker et al., *supra* note 260, at 14 (showing that the transport of G3 material predominates over that of G1 and G2 material during high-flow, or scour, events).

[274] *See* Jeffrey Cornwell, J. Michael Owens, Hamlet Perez & Zoe Vulgaropulos, *The Impact of Conowingo Particulates on the Chesapeake Bay: Assessing the Biogeochemistry of Nitrogen and Phosphorus in Reservoirs and the Chesapeake Bay* 79 (2017 UMCES Contribution TS-703-17), *attached as* Ex. 10.

[275] UMCES Study, *supra* note 254, at 2090.

storm, even one like 2011's Tropical Storm Lee, comes directly from runoff and other sources, and has nothing to do with the scouring of the Reservoir bottom: "[A] substantial scour event (top 5 cm of the entire reservoir) would contribute 20% of P[hosphorus] loads in a [Tropical Storm] Lee-like storm and only 6% of N[itrogen] loads."[276] The second (and related) reason the impact on the Bay is limited is that "[t]he scoured particulate N and P loads that do enter the Chesapeake Bay are also highly refractory," meaning that the organic matter scoured from the Reservoir bottom is biologically inert, has very low reactivity, and thus takes months or years to decay.[277] The third reason is that the particulate nitrogen and phosphorus scoured from the Reservoir bottom sink quickly and thus usually do not travel far into the Bay: "[P]articulate forms of N and P that enter Chesapeake Bay are efficiently retained in the upper Bay, especially near the Susquehanna River mouth, due to high sinking rates or trapping within the [River mouth]."[278] Thus, most of the scoured particulate nutrients do not even reach the central Bay, which is where the low dissolved-oxygen levels are found. The fourth reason why scour has only a limited impact is that the low-salinity Bay water near the Susquehanna River mouth generally has low levels of nitrogen and phosphorus exchange from sediment to water.[279] In combination, these four reasons explain why "model simulations of scour events within Conowingo Reservoir have only shown marginal impacts on dissolved oxygen" in the Bay.[280]

Eighth, given this body of scientific findings, it's not surprising that the best available data show no historical correlation between the timing of "scour"-inducing storms at Conowingo and

[276] *Id.*

[277] *Id.*; *see also id.* at 2080–81, 2086–87.

[278] *Id.* at 2090; *see also id.* at 2076, 2091.

[279] *See id.* at 2090. "[T]he tidal fresh/oligohaline region where the majority of sediments deposit has typically low rates of sediment-water N and P fluxes, as a result of high rates of denitrification, effective phosphorus retention in iron-enriched oxidized sediments, and low reactivity of the organic matter." *Id.* at 2090.

[280] *Id.* (citation omitted).

depressed dissolved-oxygen levels in the central Bay.[281] This is consistent with studies of sediment cores from the Reservoir, which concluded that any extra input of phosphorus and nitrogen from scour events would have only "minimal" impacts on the Chesapeake Bay.[282]

Published computer-modeling studies have reached a similar conclusion. For example, a study in the *Journal of Environmental Quality* found that a Conowingo scour event would generate only "marginal impacts" in the Bay, which would be "small relative to the normal intra- and inter-annual variations in … DO [dissolved oxygen] observed in the bay."[283] Specifically, the study found that a scour event would likely produce an average decline in bottom-water dissolved-oxygen levels of about 0.1 grams per cubic meter; by contrast, within a typical year, that same number vacillates by about 8 to 12 grams per cubic meter in the central Bay, roughly 100 times as much as the impact of a scour event.[284] Hence, the projected impact from a scour event on dissolved-oxygen levels is so small it could hardly be observed in a typical data scatterplot.

Ninth and finally, by definition, any storm that is large enough to cause significant "scour," like Hurricane Ivan or Tropical Storm Lee, will remove a sizeable layer from the Reservoir bottom,

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[281] *See* Jeremy M. Testa, W. Michael Kemp & Walter R. Boynton, *Season-Specific Trends and Linkages of Nitrogen and Oxygen Cycles in Chesapeake Bay*, Limnology and Oceanography 1, 8 fig. 5 & box 5 (2018) (showing August–September bottom-layer dissolved oxygen for the central Bay, 1985–2013), *attached as* Ex. 11; Aaron J. Bever, Marjorie A.M. Friedrichs, Carl T. Friedrichs, Malcolm E. Scully & Lyon W.J. Lanerolle, *Combining Observations and Numerical Model Results to Improve Estimates of Hypoxic Volume within the Chesapeake Bay, USA*, 118 J. of Geophysical Research: Oceans 4924, 4941 & fig. 14 (2013) (showing data-interpolated hypoxic volumes and duration of hypoxia, 1984–2012), *attached as* Ex. 12; Langland 2015, *supra* note 253, at 11 & table 4 (showing scour events occurred in February 1984, March 1986, April 1993, January 1996, September 2004, June 2006, March 2011, and September 2011).

[282] *See* Cornwell et al., *supra* note 274, at 79.

[283] Carl F. Cerco & Mark R. Noel, *Impact of Reservoir Sediment Scour on Water Quality in a Downstream Estuary*, 45 Jo. Envtl. Quality 894, 904 (2016), *attached as* Ex. 13.

[284] *See id.*; *see also* Chesapeake Bay Program Data Hub, *available at* https://www.chesapeakebay.net/what/data (Chesapeake Bay Program Water Quality Database (1984–present), querying data for Water Quality Data, 1987–2020, Program: TWQM—Tidal Water Quality Monitoring Program, Project: MAIN—Tidal Mainstem Water Quality Monitoring Project, Geographical Attribute: Monitoring Station, Attribute: CB4.4—Northeast of Cove Point; Mid-Channel; Parameter: Dissolved Oxygen in mg/L; review data for Layer = B ('Bottom')) (showing dissolved-oxygen levels fluctuate at this location between 0 and 12 mg/L), *available at* http://data.chesapeakebay.net/api.CSV/WaterQuality/WaterQuality/1-1-1987/1-30-2020/6/7/Station/1169/31, *attached as* Ex. 14.

which in turn will, for a time, increase the Reservoir's capacity to trap sediment and nutrients flowing down from Pennsylvania.[285] So, at least in the short- to medium-term, a scour event has the offsetting benefit of restoring part of the Reservoir's storage or trapping capacity.[286]

Again, contrary to the picture the Commenters attempt to paint, the Dam's presence provides ongoing benefits to the Bay's health. As the computer modeling that the Army Corps of Engineers and MDE relied on in their LSRWA report confirmed, at all times except after very large storm events that do not occur in most years,[287] the Dam continues to provide water-quality benefits to the central Bay, including *increased* dissolved oxygen.[288]

Likewise, the UMCES team of scientists summarized their findings by calling the Bay "remarkably resilient to storms."[289] They concluded their November 2019 paper on an optimistic note, comparing the relatively small impact of the particulate material scoured from the Reservoir bottom with the larger, positive changes in the watershed: "[T]he scale of the potential impact of elevated particulate nutrient inputs on the mainstem Chesapeake Bay is likely small compared to ongoing reductions in dissolved nitrogen and phosphorus in many regions of the watershed."[290] Fortunately, as Professor Cindy Palinkas, the UMCES study's lead author, put it, the Chesapeake Bay "'can handle the occasional big input of sediment.'"[291] While major storm events can have a

[285] *See* Langland 2015, *supra* note 253, at 4; Michael J. Langland, *Bathymetry and Sediment-Storage Capacity Change in Three Reservoirs on the Lower Susquehanna River, 1996–2008*, USGS Scientific Investigations Report 2009-5110, at 19 (2009), *attached as* Ex. 15.

[286] *See* Langland 2015, *supra* note 253, at 4; Langland, *supra* note 285, at 19.

[287] *See* Langland 2015, *supra* note 253, at 11 table 5.

[288] *See* Final LSRWA Appendix C, figs. 6-42, 6-43.

[289] UMCES Study, *supra* note 254, at 2091.

[290] *Id.*

[291] University of Maryland Center for Environmental Science, *UMCES Scientists Complete Study on Conowingo Dam and Impact on Chesapeake Bay* 1 (Nov. 11, 2019) (media release) (quoting the study's lead author, Professor Cindy Palinkas), *attached as* Ex. 16.

short-term impact, in the long run the Bay and its biogeochemistry remain resilient, even as the Conowingo Reservoir's trapping capacity has decreased.[292]

b. The Main Source for CBF's Argument Is Unreliable.

Facing this mountain of scientific evidence, CBF's Comments rest mainly on one poorly sourced assertion: CBF claims that, due to "the effects of climate change, … by 2050 outputs of [nitrogen, phosphorus] and sediment from the Project will *exceed* inputs" by about 5%, 15%, and 9%, respectively, "meaning that the Dam itself will become a *source* of these pollutants … within the new license term."[293] That is, CBF asserts that a hydroelectric project that generates zero nutrients will, over the long term, export more nutrients than it imports.

But CBF's only support for this bizarre theory comes from a bar graph purportedly copied from a paper that, according to a parenthetical buried in a footnote in CBF's Comments, is "in preparation"[294]—a euphemism in the scientific community for "not ready to be submitted for peer review or publication." CBF did not attach the paper to its Comments or even supply a Web link. CBF cannot carry its burden to come forward with substantial evidence in opposition to the Joint Offer of Settlement based on a snippet from an unpublished and unavailable paper, particularly not one that contradicts reams of sound science analyzing the Bay.[295]

Although the scientific underpinnings of this lone bar graph are entirely murky, what we do know is that the conclusion CBF draws from it conflicts with the conclusion stated by Dr. Beth McGee, the senior scientist for CBF. Dr. McGee has conceded that Conowingo's diminished

[292] UMCES Study, *supra* note 254, at 2091.

[293] CBF Comments at 4–5 (emphasis in the original); *see id.* at 18; *see also id.* at 10, 16 & n.45.

[294] *Id.* at 5 n.15.

[295] Furthermore, in other presentations, three of the four co-authors of CBF's "in preparation" paper have stated that nutrient-load increases to the Bay under climate-change conditions will be "negligible." Gopal Bhatt, Lew Linker & Gary Shenk, *Initial Applications of the Draft Phase 6 Watershed Model—Climate Change* 26 (Aug. 2017), *attached as* Ex. 17.

"capacity to trap pollution in future years and during storms" is not the cause of the Bay's water-quality problems, but rather a "red herring."[296] In a written statement Dr. McGee explained: "[N]o matter what happens at the Conowingo we'll still have a major pollution problem in the mainstem of the Bay. Nitrogen is one of the main pollutants, and the Dam has never trapped that pollutant efficiently. Much of the nitrogen pollution comes from local sewage plants, farms, and other sources."[297]

There is no need for the Commission to referee this conflict between CBF's senior scientist and CBF's favorite unpublished bar graph. FERC Staff fully analyzed "scour" when they issued the FEIS, and volumes of scientific evidence support their conclusions. Nothing about the Project's effects on downstream water quality should prevent the Commission from adopting Exelon's Licensing Proposal.

F. The Commission Retains Authority to Reopen the License to Address Future Circumstances.

Both TNC and CCC claim that the Joint Offer of Settlement should be rejected, in part, because it limits MDE's ability to seek license reopeners to address future circumstances such as changes to water quality and the effects of climate change. While both TNC and CCC attempt to discount its significance, the Joint Offer of Settlement expressly provides that MDE can seek to reopen the license to require compliance with more stringent water-quality standards adopted pursuant to the CWA.[298] This right, as well as the limitations on MDE's ability to seek to reopen the license, represent part of the careful balance of interests reflected in the Joint Offer of Settlement.

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[296] Chesapeake Bay Foundation, Inc., Press Statement, *CBF: Conowingo Is a Red Herring; Local Pollution Comes from Local Sources*, Nov. 2, 2012, *attached as* Ex. 18.
[297] *Id.* (quoting Dr. Beth McGee, senior scientist with CBF).
[298] Agreement § 2.6 (Adaptive Management).

More fundamentally, there is no risk of genuine harm based on MDE's agreement to limit its ability to seek to reopen the license. In all major hydropower licenses, the Commission "reserve[s] the authority to deal with matters such as uncontemplated environmental impacts that occur during the term of a license through its retention of reserved authority to reopen a license."[299] This holds true even when there is a settlement agreement among participants that resolves certain issues in the proceeding for the full term of the new license.[300] Moreover, any party has the right to petition the Commission to invoke its reopener authority.[301]

G. A 50-Year License Is Warranted Under the Commission's License-Term Policy.

CCC argues in the alternative for a license term of 10 years, 35 years, or 40 years. The FPA, however, does not permit a 10-year term and mandates that terms be no less than 30 years and no more than 50 years.[302] Nor, on the facts here, is a 35- or 40-year term appropriate. FERC's policy states that licenses for terms of 50 years will be granted where (as here) there are substantial project-related investments, agreement among participants, and improved basin-wide licensing coordination.

The Commission's *Policy Statement on Establishing License Terms for Hydroelectric Projects*[303] dictates a 50-year license term here. The *Policy Statement*, which is consistent with FPA Section 36's directive for the Commission to consider "investments by the licensee to implement the new license" in determining the term of a new license for a project with an existing

[299] *Eagle Crest Energy Co.*, 168 FERC ¶ 61,186, at P 22 (2019); *see also Alaska Energy Authority*, 144 FERC ¶ 61,040, at P 19 (2013) ("the Commission's standard license reopener article would be a means for making changes to the license if any unanticipated adverse environmental effects occur during the course of the license").
[300] *City of Seattle, Wash.; U.S. Dep't of the Interior*, 71 FERC ¶ 61,159, at n.30 (1995) ("[W]hile the parties may stipulate that the Settlement Agreement satisfies their concerns regarding the project, and while the Commission is accepting the Agreement, the new license remains subject to articles reserving the Commission's authority, after notice and opportunity for hearing, to address resource issues if future circumstances warrant.").
[301] 18 C.F.R. Subpart B.
[302] 16 U.S.C. § 808(e).
[303] 161 FERC ¶ 61,078 (2017).

license,[304] provides that the Commission will consider a longer license term if specifically requested by the licensee "based on significant measures expected to be required under the new license."[305] The categories of qualifying measures include those "that enhance non-developmental project purposes (*i.e.*, environmental, project recreation, water supply)," including "fish passage facilities, fish hatcheries, [and] substantial recreation facilities."[306] Exelon meets this test based on its proposed investments in recreation facilities, fish-passage facilities, water-quality improvements, and measures for protected species, which could total about $600 million over the course of the new license.[307] Thus, a license term of 50 years is warranted under the *Policy Statement* to provide Exelon with the time necessary "to recoup costs," as well as to "lower administrative costs" and "reduce regulatory burden."[308]

The *Policy Statement* also provides that agreement among participants in a proceeding can justify a longer license term.[309] Here, both the DOI Settlement and the Joint Offer of Settlement support a 50-year license term. Taken together, the settlements and the comments filed in support of them are a "generally-supported comprehensive" settlement of the contested issues in this relicensing proceeding.

Finally, the *Policy Statement* emphasizes the adoption of license terms that will improve basin-wide license coordination.[310] The two hydroelectric projects immediately upstream from Conowingo, the Holtwood Hydroelectric Project and the Safe Harbor Hydroelectric Project, have licenses that expire in 2030. Assuming both projects receive new licenses for the default term of

[304] 16 U.S.C. § 823g(a) & (b)(1).
[305] *Policy Statement*, 161 FERC ¶ 61,078, at P 16; *see also Pacific Gas & Elec. Co.*, 167 FERC ¶ 61,047, at P 6 (2019).
[306] *Policy Statement*, 161 FERC ¶ 61,078, at P 16.
[307] *Cf. Pacific Gas & Elec. Co.*, 167 FERC ¶ 61,047, at PP 9–11 (finding that $54 million in investments was substantial).
[308] *Policy Statement*, 161 FERC ¶ 61,078, at P 17.
[309] *Id.* at P 15.
[310] *Id.*

40 years, their licenses would expire in 2070. If Conowingo receives a 50-year license term, its license also would expire in 2070. As a consequence, the Commission would—for the first time—be able to coordinate the relicensings of the three major conventional hydroelectric projects on the Susquehanna River. For all these reasons, a 50-year license is appropriate.

H. The Commission Should Not Require Exelon to Make Payments to Local Entities.

CCC objects to the Joint Offer of Settlement because it does not require payments to local governments.[311] Nothing in the FPA, however, requires licensees to provide monetary payments in connection with relicensings—much less make such payments to particular *levels* of governments. In the Joint Offer of Settlement, Exelon has made significant commitments to the region, both nonmonetary and monetary, that more than address the Project's impacts. To the extent Maryland counties believe that money provided under the Joint Offer of Settlement should be spent in particular ways, their concerns raise internal Maryland issues beyond the Commission's purview.

I. Exelon and MDE Support DOI's Modifications to the Invasive-Species Article.

The Joint Offer of Settlement includes a Proposed License Article requiring Exelon to undertake measures to prevent the passage of invasive species above Conowingo Dam via the East Fish Lift. After reviewing the proposed license, DOI notified Exelon and MDE that implementing the invasive-species mitigation measures might interfere with Exelon's obligation to achieve defined fish-passage efficiency targets under the Modified Prescription. Specifically, while the invasive-species mitigation measures in the Proposed License Article reflect current best practices, a future population explosion of invasive species could lead to repeated drawdowns of the East

[311] CCC Comments at 19–20.

Fish Lift trough. These repeated drawdowns would interfere with Exelon's ability to pass migratory fish as the Modified Prescription requires.

In response to these concerns, DOI, MDE, MDNR, and Exelon convened a meeting and participated in several follow-up conference calls. As a result of these discussions, the resource agencies and Exelon agreed to modifications to the Joint Offer of Settlement's proposed invasive-species license article. The revised proposed invasive-species license article is included as Attachment 1 to DOI's comments.

The revised license article clarifies that Exelon may, subject to certain conditions, suspend invasive-species mitigation measures if the measures materially interfere with Exelon's fish-passage obligations. Additionally, if it becomes necessary to suspend the invasive-species mitigation measures, Exelon is required to consult with the resource agencies to determine whether comparable alternative mitigation measures can be implemented. Exelon and the resource agencies believe the revised license article more appropriately addresses conflicting resource objectives that may occur in the future, and Exelon and MDE ask the Commission to incorporate the revised invasive-species mitigation license article into the new license.[312]

Exelon, however, does not support PADEP's request that Exelon develop a detailed plan to implement the proposed invasive-species license article.[313] The license article clearly articulates the actions Exelon must take to prevent the passage of invasive species above Conowingo Dam. Exelon also asks the Commission to reject the requests of PFBC and PADEP to modify the East Fish Lift.[314] Exelon can effectively implement the invasive-species mitigation measures supported by DOI, MDE, and MDNR without physical changes to the lift.

[312] MDE and Exelon agree that adoption of the revised invasive-species Proposed License Article will not affect the conditional withdrawals discussed in Section III-B-2 and set forth on pages 4–5 of the Joint Offer of Settlement.
[313] PADEP Comments at 3.
[314] PFBC Comments at 3; PADEP Comments at 3.

J. The Proposed License Article Addressing Trash and Debris Will Mitigate Aesthetic and Safety Impacts and Fully Comport with Commission Precedent.

Riverkeepers claim that the Joint Offer of Settlement is deficient because it does not adequately address trash and debris that collect behind the Dam. This claim is based solely on the presence of certain trash–and-debris-related measures in the conditionally waived Water Quality Certification and ignores the comprehensive trash and debris mitigation measures included in the FEIS and the Joint Offer of Settlement.

In the FEIS, FERC Staff recommended revising Conowingo's Recreational Management Plan to include a debris-management program.[315] The elements of this program—which will be refined further following consultation with stakeholders—include:

1. Debris-management goals;
2. A description of debris-management methods, including clamming in front of the dam and deploying a marine trash skimmer boat to remove floating debris that poses hazards to recreational boating;
3. Best Management Practices for storing the debris materials at Hopkins Cove and other Exelon-owned lands;
4. Timeframes for when debris will be collected and frequency of skimmer and clamming operations;
5. Specific size criteria for target floating debris;
6. Procedures for removal of stored debris;
7. The sponsorship of community-based cleanups in the Pond and downstream from the Dam as described in the FLA;
8. A public hotline for boaters to link directly to Exelon to report areas of hazardous floating debris; and
9. An annual report due every April 1 throughout the license term, summarizing the previous year's debris-removal efforts, hotline action items, and outcomes.

[315] FEIS at 426 & Appendix C, Proposed License Article 413, C-10 to C-11.

Along with the revised Recreational Management Plan, the Joint Offer of Settlement includes additional specific measures regarding trash-removal commitments, complaint-response requirements, cleanup sponsorship, and water-supply intake debris removal.[316] In no part of its Comments do Riverkeepers question the adequacy of these measures. Indeed, the Proposed License Articles covering trash and debris fully satisfy the Commission's policy regarding how trash and debris impacts should be addressed.[317] The FEIS further concludes that implementing the revised Recreational Management Plan will mitigate aesthetic and safety impacts,[318] and the SRBC has stated that it supports the trash and debris measures included in the Joint Offer of Settlement.[319] Approval of the Joint Offer of Settlement thus will enhance Exelon's efforts to address the trash and debris that accumulate behind the Conowingo Dam.

K. The Commission Should Not Place Conditions on Land that May Be Removed from the Project Boundary.

The National Park Service (NPS) suggests that, in the event any lands are removed from the Project boundary, the Commission should require Exelon to maintain their current recreational use as a condition of approving their removal.[320] The Commission should reject this recommendation. Under FERC's regulations, "the [project] boundary must enclose *only* those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources."[321] Land could

[316] Offer, Appendix A, Proposed Trash and Debris Article.
[317] *See, e.g.*, *FFP Missouri Hydroelectric, LLC*, 160 FERC ¶ 62,258 (2017) (requiring development of a detailed debris management plan); *Solia 5, LLC*, 160 FERC ¶ 62,062 (2017) (same).
[318] FEIS at 295–96, 384, 426.
[319] SRBC Comments at 2.
[320] DOI Comments at 2–3.
[321] 18 C.F.R. § 4.41(h)(2) (emphasis added). FERC's regulations also include specific guidance on impoundments and buffer zones around impoundments, *i.e.*, "[t]he boundary must be located no more than 200 feet (horizontal measurement) from the exterior margin of the reservoir, defined by the normal maximum surface elevation, except where deviations may be necessary … where additional lands are necessary for project purposes, such as public recreation, shoreline control, or protection of environmental resources." *Id.* § 4.41(h)(2)(i)(B).

ultimately be removed from the Project boundary only after the Commission and Exelon agree that the land serves no Project purpose. Hence, once land is removed from the Project boundary, the Commission's jurisdiction over it is extinguished—and Exelon can use, or dispose of, its land free of any regulatory constraints that may have existed under the license. Moreover, given the limits of the Commission's jurisdiction over land that is not within the Project boundary, any constraints imposed by the Commission on future use of the land would be unenforceable. Notwithstanding the limits of FERC's jurisdiction, Exelon is willing to consider the concerns expressed by NPS and is open to further discussions with NPS about any lands that may be removed from the Project boundary.

L. The Commission Should Reject Additional Information Requests and Requests for a Technical Conference, and Proceed to Issue a New License for the Project.

The relicensing process for the Conowingo Project is entering its eleventh year. Over the last decade, Exelon has conducted more than 30 relicensing studies, engaged in extensive stakeholder outreach, consulted with state and federal resource agencies, proposed significant PM&E measures in its license application, augmented its licensing proposal with two separate negotiated agreements with DOI and MDE, and implemented significant resource enhancements at Conowingo Dam as part of the Muddy Run license. During this period, FERC approved Exelon's study plan and prepared a comprehensive environmental impact assessment to identify and assess Project impacts. The FEIS also included FERC Staff-recommended measures to address and mitigate Project impacts. And at every stage of the relicensing process, interested parties have had an opportunity to present information to the Commission and offer comment on issues relevant to the relicensing of the Project.

The voluminous record in this proceeding—replete with data, information, and analyses addressing potential Project impacts and associated mitigation measures—is more than enough for

the Commission to make a reasoned licensing decision based on substantial evidence. Neither TNC nor CBF offers sufficient justification for a technical conference and, at this stage of the proceeding, there is no compelling reason that Exelon should be directed to respond to TNC's request for additional information.

As for the complaints regarding lack of participation in the MDE-Exelon settlement negotiations, such complaints ignore that the Commission's ILP provided ample opportunity for parties to actively participate in the relicensing process. Over the past 11 years, every stakeholder has had the chance to lay out its position before the Commission.

Exelon urges the Commission to issue a new license to Exelon for the Conowingo Project adopting Exelon's Licensing Proposal. Exelon is ready to move forward with license implementation and work immediately and collaboratively with resource agencies to protect and enhance the environmental, fisheries, and recreational resources in and around the Project. The only alternative is years' long delay that would contradict the Commission's policy favoring timely action on relicensings and delay the significant investments Exelon is prepared to make in the Project—all to the detriment of the resources that will benefit most under the new license.

V. REQUEST FOR RELIEF

For the foregoing reasons, Exelon respectfully requests that the Commission (1) approve the Joint Offer of Settlement; (2) reject all requests for additional information and further proceedings; and (3) issue a new 50-year license for the Conowingo Project incorporating the terms and conditions of Exelon's Licensing Proposal as defined above.

Respectfully submitted,

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January 31, 2020

EXHIBITS

Exelon has enclosed the following exhibits in support of its Reply Comments:

- **Exhibit 1** – U.S. Army Corps of Engineers & Maryland Dep't of the Envmt., *Lower Susquehanna River Watershed Assessment, Maryland and Pennsylvania* (May 2015 Final) ["Final LSRWA"].

- **Exhibit 2** – Michael J. Langland, *Sediment Transport and Capacity Change in Three Reservoirs, Lower Susquehanna River Basin, Pennsylvania and Maryland, 1900–2012*, U.S. Geological Survey Open-File Report 2014–1235 (2015) ["Langland 2015"].

- **Exhibit 3** – Cindy M. Palinkas, Jeremy M. Testa, Jeffrey C. Cornwell, Ming Li & Lawrence P. Sanford, *Influences of a River Dam on Delivery and Fate of Sediments and Particulate Nutrients to the Adjacent Estuary: Case Study of Conowingo Dam and Chesapeake Bay*, 42 Estuaries and Coasts 2072 (2019) ["UMCES Study"].

- **Exhibit 4** – Qian Zhang, Robert M. Hirsch & William P. Ball, *Long-Term Changes in Sediment and Nutrient Delivery from Conowingo Dam to Chesapeake Bay: Effects of Reservoir Sedimentation*, 50 Envtl. Sci. & Tech. 1877 (2016).

- **Exhibit 5** – Lee Currey, *Conowingo Dam Infill: How Much, Who, How, and By When*, *in* Chesapeake Bay 2017 Midpoint Assessment—Policy Issues for Partnership Decisions (Dec. 4–5, 2017).

- **Exhibit 6** – David McFadden, *Experts Warn of "Dead Zone" in Chesapeake Bay from Pollution*, Associated Press (July 6, 2019).

- **Exhibit 7** – Qian Zhang & William P. Ball, *Data Associated with Decadal-Scale Export of Nitrogen, Phosphorus, and Sediment from the Susquehanna River Basin, USA: Analysis and Synthesis of Temporal and Spatial Patterns*, Version 1, File A3 (2016), Johns Hopkins University Data Archive ["Zhang & Ball Data Archive"].

- **Exhibit 8** – Qian Zhang, William P. Ball & Douglas L. Moyer, *Decadal-Scale Export of Nitrogen, Phosphorus, and Sediment from the Susquehanna River Basin, USA: Analysis and Synthesis of Temporal and Spatial Patterns*, 563–564 Sci. of the Total Environment 1016 (2016).

- **Exhibit 9** – Qian Zhang, Damian C. Brady & William P. Ball, *Long-Term Seasonal Trends of Nitrogen, Phosphorus, and Suspended Load from the Non-Tidal Susquehanna River Basin to Chesapeake Bay*, 452–453 Sci. of the Total Environment 208 (2013).

- **Exhibit 10** – Jeffrey Cornwell, J. Michael Owens, Hamlet Perez & Zoe Vulgaropulos, *The Impact of Conowingo Particulates on the Chesapeake Bay: Assessing the Biogeochemistry of Nitrogen and Phosphorus in Reservoirs and the Chesapeake Bay* (2017 UMCES Contribution TS-703-17).

- **Exhibit 11** – Jeremy M. Testa, W. Michael Kemp & Walter R. Boynton, *Season-Specific Trends and Linkages of Nitrogen and Oxygen Cycles in Chesapeake Bay*, Limnology and Oceanography 1 (2018).

- **Exhibit 12** – Aaron J. Bever, Marjorie A.M. Friedrichs, Carl T. Friedrichs, Malcolm E. Scully & Lyon W.J. Lanerolle, *Combining Observations and Numerical Model Results to Improve Estimates of Hypoxic Volume within the Chesapeake Bay, USA*, 118 J. of Geophysical Research: Oceans 4924 (2013).

- **Exhibit 13** – Carl F. Cerco & Mark R. Noel, *Impact of Reservoir Sediment Scour on Water Quality in a Downstream Estuary*, 45 J. of Envtl. Quality 894 (2016).

- **Exhibit 14** – Chesapeake Bay Program Data Hub, *available at* https://www.chesapeakebay.net/what/data (Chesapeake Bay Program Water Quality Database (1984–present), querying data for Water Quality Data, 1987–2020, Program: TWQM—Tidal Water Quality Monitoring Program, Project: MAIN—Tidal Mainstem Water Quality Monitoring Project, Geographical Attribute: Monitoring Station, Attribute: CB4.4—Northeast of Cove Point; Mid-Channel; Parameter: Dissolved Oxygen in mg/L; review data for Layer = B ('Bottom')).

- **Exhibit 15** – Michael J. Langland, *Bathymetry and Sediment-Storage Capacity Change in Three Reservoirs on the Lower Susquehanna River, 1996–2008*, USGS Scientific Investigations Report 2009-5110 (2009).

- **Exhibit 16** – University of Maryland Center for Environmental Science, *UMCES Scientists Complete Study on Conowingo Dam and Impact on Chesapeake Bay* (Nov. 11, 2019) (media release).

- **Exhibit 17** – Gopal Bhatt, Lew Linker & Gary Shenk, *Initial Applications of the Draft Phase 6 Watershed Model—Climate Change* (Aug. 2017).

- **Exhibit 18** – Chesapeake Bay Foundation, Inc., Press Statement, *CBF: Conowingo Is a Red Herring; Local Pollution Comes from Local Sources*, Nov. 2, 2012.

- **Exhibit 19** – Lew Linker, Gopal Bhatt & the CBP [Chesapeake Bay Program] Modeling Team, *Results of Latest Phase 6 Conowingo Analysis* (Sept. 13, 2017).

CERTIFICATE OF SERVICE

I hereby certify that I have this 31st day of January, 2020, served the foregoing document upon each person designated on the official service list compiled by the Commission in Docket Nos. P-405-106 and P-405-121.

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