ENVIRONMENTAL PROTECTION
DIVISION OF LAND RESOURCE PROTECTION
Notice of Action on Petition for Rulemaking
Coastal Zone Management Rules, N.J.A.C. 7:7-9.2, 9.6 and 12.5
Request to amend the Submerged vegetation habitat, Shellfish habitat and Recreational docks and piers rules to allow construction of structures that do not extend to a depth of four feet mean low water in certain circumstances

Petitioners: Craig and Tracy Cinelli.

Take notice that the Department of Environmental Protection (Department) has determined to deny the August 11, 2021 petition for rulemaking received from Craig and Tracy Cinelli ("Petitioners") to allow construction of shorter docks and piers to moor nonmotorized boats in shallow waters within shellfish and submerged habitat areas. The petition, described below, was filed on August 11, 2021, with Notice of Receipt published in the September 21, 2021 issue of the New Jersey Register (see 53 N.J.R. 1638(a)). A Notice of Action referring the petition for further deliberation was published in the November 15 issue of the New Jersey Register (see 53 N.J.R. 1933(a)).

Petitioners' Request

Petitioners request that the Department amend the Coastal Zone Management Rules, N.J.A.C. 7:7, to allow the construction of shorter and smaller recreational docks and piers in shellfish and submerged habitat areas than are currently allowed under the applicable rules provided that the structures will not be used for the mooring of powerboats. Specifically, petitioners

request that the Department amend N.J.A.C. 7:7-9.2, Shellfish habitat, N.J.A.C. 7:7-9.6, Submerged vegetation habitat, and N.J.A.C. 7:7-12.5, Recreational docks and piers.

Petitioners state that the recreational docks and piers rule, N.J.A.C. 7:7-12.5, provides that construction of recreational docks and piers is conditionally acceptable, but imposes conditions on where and how those structures may be built, including limitations when such structures are proposed in areas considered to be shellfish habitat or submerged vegetation habitat areas. The submerged vegetation habitat rule, N.J.A.C. 7:7-9.6, restricts construction to a single recreational dock or pier allowed solely if a minimum water depth of four feet at mean low water is present in the area where boats will be moored. No allowance is made for a structure where no boat mooring is proposed. Petitioners state that "This requirement, while well intended (it is designed to avoid potential adverse impacts to marine resources associated with powerboats), precludes the construction of smaller, shorter docks that afford property owners water access for activities such as fishing, swimming, crabbing and the use of non-motorized small craft." Petitioners indicate that the rationale for the rule, at N.J.A.C. 7:7-9.6(e), explains that excluding boating activities where the water depth is less than four feet will ensure that impacts from boating are not likely to be destructive of plants or their habitat.

Petitioners assert that the Shellfish habitat rule, N.J.A.C. 7:7-9.2, allows a single recreational dock or pier associated with a single-family dwelling, but requires that the structure be designed and constructed in a manner that reduces adverse impacts to the marine ecosystem

to the extent practicable. Petitioners indicate that the rule does not explicitly require docks extend to a location where a minimum water depth of four feet mean low water is present where boats are to be moored, but does include a cross-reference to the Submerged vegetation habitat rule in that regard at N.J.A.C. 7:7-9.2(d)3ii(2). Petitioners quote a portion of the rationale to the rule at N.J.A.C. 7:7-9.2(m), which indicates that there is an inherent conflict between the protection of shellfish habitat and water quality and boating related activities, such as mooring and dredging. Petitioners indicate that neither the language of the rule nor the rationale make allowance for structures where no boat mooring is proposed.

Petitioners assert that the three rule sections have been collectively interpreted and applied by the Department as meaning that recreational docks in shellfish habitat and submerged vegetation habitat area must in all cases extend to a depth of four feet at mean low water, even if an applicant has no interest in mooring powerboats. Petitioners assert that in many cases property owners are interested in constructing much shorter docks to be used for launching small boats, fishing, crabbing, swimming and simply enjoying access to the water. In some other cases, shallow water depth precludes the construction of a dock. In support of that assertion, petitioners submitted a bathymetric survey of water depths adjacent to their property indicating that there is no point between the waterward edge of their property and the channel where a depth of four feet at mean low water is present.

For the reasons summarized above, the petitioners request that the rules be modified to allow the construction of structures that do not extend to a depth of four feet mean low water, provided that they will not be used for the mooring of powerboats. In the alternative, petitioners request that the Department clarify that the rules, as currently written, allow the construction of docks that do not reach four feet of depth at mean low water provided they are not used for the mooring of powerboats. Petitioners submit that such an amendment would not in any way undermine the Department's goal of minimizing adverse impacts to marine resources that might result from the operation of powerboats in shallow water.

Statutory Authority

Petitioners assert, and the Department agrees, that it holds statutory authority under the Coastal Area Facility Review Act, N.J.S.A. 13:19-1 ("CAFRA") and the Waterfront Development Act, N.J.S.A. 12:5-3, and regulatory authority under the Coastal Zone Management Rules to amend its regulations.

Relevant Federal or State Statutes and Rules

Petitioners allege the proposed amendments would reduce adverse impacts to shellfish and submerged vegetation habitat. Thus, Petitioners claim the impact would be beneficial to the environment, thus complying with CAFRA and the Federal Coastal Zone Management Act and related laws.

Department's Response

Petitioners own property on West Point Island in Lavallette Borough, fronting on Barnegat Bay. They do not have a dock and therefore have no direct "over-water access," although they state they do enjoy their own small beach area. In 2011, Petitioners submitted a Coastal Permit application seeking to construct a four foot by 114-foot dock with a six foot by 20-foot terminus, boat lift, personal watercraft lift and mooring piles. Petitioners say that on November 17, 2011 the Department denied that application, as the dock, which was designed to reach a depth of four feet at mean low tide, would have been located too close to the nearest maintained navigational channel and would have violated the Recreational Docks and Pier rule that precludes docks from interference with navigation, N.J.A.C. 7:7-12.5(b)(9). Petitioners recently conducted a bathymetric survey of water depths outshore of their property and say the current water depth does not reach four feet at mean low tide between the edge of their property and the channel. Petitioners have young children, and say that, at this point, they only have an interest in construction of a dock of sufficient length to allow fishing, swimming, crabbing, "overwater access" and the use of small craft.

The Department's longstanding regulations protect the special areas known as submerged aquatic vegetation (SAV) and shellfish habitat with limited exceptions. Special areas are areas that are so naturally valuable, important for human use, hazardous, sensitive to impact, or particular in their planning requirements, as to merit focused attention and special management rules. N.J.A.C. 7:7-9.1. Special area environmental resource rules supersede the rules governing other areas or uses. N.J.A.C. 7:7-9.1(b). With reference to the special areas at issue in this petition, the Department recognizes and classifies documented shellfish habitat and submerged aquatic vegetation habitat as naturally valuable special areas. The Department

protects submerged vegetation and shellfish habitats as special areas because they are vital environmentally sensitive habitats for fisheries and waterfowl, and they support both commercial and recreational shellfishermen. N.J.A.C. 7:7-9.6(e); N.J.A.C. 7:7-9.2(m).

Shellfish habitat plays an important role in the ecology of estuaries and shellfish serve as important forage food source for a variety of finfish species, crabs, and migratory waterfowl besides serving as a harvestable resource. N.J.A.C. 7:7-9.2(m). Shellfish themselves are filter feeders and therefore also help to maintain or improve water quality. Ibid. Boating related activities can adversely affect shellfish habitat and the harvestability of shellfish. Ibid. Mooring facilities, with or without motors, can be sources of pollution with a potential for improper introduction of waste and pollutants. Shellfish that occur in or near docks are unsafe for human consumption due to the potential health threats associated with pollution generated by the leaching of chemicals and heavy metals from waterfront construction materials, boat related pollutants, and human waste disposed close to docks. Ibid. Bivalve shellfish readily bioaccumulate and concentrate toxic substances and pathogenic microorganisms within their tissue, which poses a human health risk when contaminated shellfish are consumed. Ibid. The pollutants and chemicals discussed in the shellfish habitat rule's rationale are an issue with non-motorized, as well as motorized, vessels. For example, bottom paints and cleaning supplies are used for non-motorized vessels.

Shellfishing is also a longstanding water- dependent use that provides jobs to numerous people along the shore. In 2008, the non-recreational commercial dockside landings for estuarine shellfish in New Jersey were valued at $6.63 million (US Department of Agriculture).

Shellfish are typically worth about six times the dockside value to the State's economy through processing, distribution, and retail.

Submerged aquatic vegetation (SAV) is the term used to describe rooted, vascular plants that grow underwater except for periods of brief exposure at low tides. (Thayer and Fonseca, 1984, page2). SAV, sometimes referred to generally as "seagrasses" is most prevalent in the shallow portions of the Navesink, Shrewsbury, Manasquan, and Metedeconk Rivers, and in the Barnegat, Manahawkin, and Little Egg Harbor Bays. Development in SAV areas is expressly prohibited, except in limited instances.

SAV in shallow waters provides numerous important functions, including acting as suspended sediment traps, important winter forage for migratory waterfowl, and nursery areas for juvenile fin fish, bay scallops and blue crabs. Additionally, submerged vegetation nourishes fishery resources through primary biological productivity (synthesis of basic organic material) through detrital food webs in a similar manner to salt marsh emergent Spartina cord grasses. In addition, seagrasses absorb wave energy and root networks help stabilize silty bay bottoms. N.J.A.C. 7:7-9.6(e).

More recently, it has also been determined that SAV helps to address CO2 emissions. SAV stores "blue carbon," the designation first used in 2009 by Nelleman to characterize the proportion of biological carbon captured by marine living organisms that is sequestered by coastal ecosystems, specifically SAV habitat such as seagrass beds. Nelleman, "Blue Carbon": The role of healthy oceans in binding carbon. Center for Coastal and Ocean Mapping; McLeod, A blueprint for blue carbon: toward improved understanding of the role of vegetated coastal habitats in sequestering CO2, Frontier of Ecol. Environ 9(10): 552-560, 2011, SAB Report page

7). Short-term carbon sequestration (decennial time scales) occurs in seagrass aboveground biomass; and long-term sequestration (potentially millennial time scales) occurs in belowground biomass and sediments (Duarte et al, 2010, Seagrass community metabolism: Assessing the carbon sink capacity of seagrass meadows. Global Biogeochemical Cycles 24:GB4032, SAB Report page 7). Indeed, seagrass meadows can sequester carbon at a rate 35 times faster than a tropical rainforest. (McLeod 2011, SAB Report page 7). Altogether, because of the blue carbon storage capacities of seagrass beds, they are now considered an important mitigative component of increased CO2 concentrations that drives climate change (Zakyas-Santiago et al, 2020, Metabolic profiling reveals biochemical pathways responsible for eelgrass response to elevated CO2 and temperature. Nature Scientific Reports, SAB Report page 7).

In July 2021, the Department's Science Advisory Board ("SAB") submitted a report entitled Submerged Aquatic Vegetation and Habitat: Survey and Mapping Methodologies Review that focused on best practices for mapping SAV and that reiterated the important value of this resource. Its authors included members of the SAB's Ecological Processes Standing Committee Dr. Elizabeth Ravit, Rutgers; Dr. Meiyin Wu, Montclair State; and Dr. Elizabeth Watson, Drexel.

The SAB explained that SAV populations grow primarily below the water surface in shallow marine and estuarine environments. SAB Report, Page 3. SAV habitats are designated as Essential fish Habitats by the National Marine Fisheries Service (NMFS) (Orth, Batiuk, Bergstrom, Moore, A perspective on two decades of policies and regulations influencing the protection and restoration of submerged aquatic vegetation in Chesapeake Bay," USA Bulletin of Marine Science, 71(3); 1391-1403, 2002), SAB Report page 3. These submerged

communities, the SAB noted, contribute to one of the most productive ecosystems in the world (Havel , ASMFC Habitat Committee, 2018. Submerged Aquatic Vegetation Policy, ASMFC Habitat Management Series No. 15, Arlington, Va., SAB Report page 3), supporting biogeochemical cycling, physical stabilization of sediments, and life cycle habitat needs of multiple aquatic species (Green & Short 2007 World Atlas of Seagrasses. UNEP World Conservation Monitoring Centre, Cambridge, UK, SAB Report page 3; and SAV is used by aquatic communities as refuge, attachment, spawning, food, and prey capture for various parts of their life cycles (Havel 2018, SAB Report page 8). SAV provides a nutrient source, nursery area, and critical habitat for commercially and recreationally important fish, benthic, and marine mammal populations, including threatened and endangered species. (de Boer 2007, Seagrass-sediment interactions, positive feedbacks and critical thresholds for occurrence, a review, Hydrobiologia 591:5-24, SAB Report page 3).

Of special relevance to this petition, the SAB report explained that generally marine sea grass beds are limited to shallow coastal areas (Kemp et al. 2004) typically in low energy areas (de Boer 2007, SAB Report, page 6). Seagrass depth distribution is directly linked to irradiance, meaning shining brightly (Lee, Park and Kim, Effects of irradiance, temperature and nutrients on growth dynamics of seagrass; A review Journal of Experimental Marine Biology and Ecology 350:144-175, 2007, SAB Report page 7). Seagrass is generally reported to occur at the maximum Mid-Atlantic depth of .5 to one meter (Koch and Orth 2007, SAB Report page 6). This one meter or 39 inches typical depth of SAV supports and confirms the Department's longstanding requirement that four feet of depth at mean low tide must be present in any

location where a boat would be moored to protect this special area resource. Thus, the four-foot requirement at mean low tide reflects the relevant, current, science. N.J.A.C. 7:7-9.1(b).

Various sources discuss the human disturbances causing adverse impacts to the distribution, species composition and productivity of these submersed macrophyte communities, which include dredging, filling, land reclamation, and dock and infrastructure construction. (Short, et al, 2007, SAB Report page 3; Global Seagrass Distribution and Diversity: A Bioregional Model, Journal of Experimental Marine Biology and Ecology 350:3-20; and Spaulding et al, The Distribution and Status of Seagrasses, In World Atlas of Seagrasses, UNEP World Conservation Monitoring Centre, Cambridge, UK, 2007, SAB Report page 3. Indeed, SAV loss in most Atlantic coastal states is due to degraded water quality (Havel 2018, SAB Report page 4). Estimated seagrass coverage in Barnegat Bay fell from a range of 8799 hectares (ha) in the 1980's to 6083 ha. in the 1990s (Lathrop et al, 2001 Use of GIS mapping and modeling approaches to examine the spatial distribution of seagrasses in Barnegat Bay. New Jersey Estuaries 24(6A): 904-916, SAB Report page 4).

Critically, protection and conservation of SAV habitat is more assured and cost effective than restoration or mitigation after SAV loss (Havel 2018, SAB Report page 7). Havel explains that mitigation is more assured and cost effective than potential restoration because water quality standards must be met before restoration can be attempted; additionally, restoration failures have been documented due to predators, human impacts and planted shoots that uproot easily (Ibid).

Petitioners seek a rule amendment to install a dock within shallow waters of less than four feet at mean low tide in both SAV and shellfish habitats to allow fishing, swimming,

crabbing, and the use of "small craft." As indicated in the studies above, submerged vegetation and shellfish habitat special areas provide critical environmental functions. Because of their critical functions and values, recreational docks are only allowed in these special areas in very specific instances designed to limit adverse impacts to the resources while allowing activities in a manner that will minimize any impacts. The mooring of boats in SAV and shellfish habitats where the depth is less than four feet can have significant impacts. While the range of impacts is greater with motorized craft, these impacts are present whether the craft is powered by a motor or not. Moreover, allowing docks in these special areas with a condition that only non-motorized craft be moored to the structure would be difficult to enforce, and could result in widespread damage to these valuable special areas, which once lost, are difficult to reestablish. For these reasons, the petitioners' request is denied.

While the Department understands the desirability of over-water access, the Department notes that a property owner seeking only the use of non-motorized vessels has other options besides disturbance of these special areas to enjoy use of their water access. For example, Petitioners do not have a dock but state they do enjoy their own small beach area. Petitioners could push off from the rip-rap shoreline or the beach area with non-motorized small boats such as rowboats, canoes, and kayaks to enjoy the bay or to go fishing or crabbing without over-water access. Petitioners could also install an on-land boatlift for kayaks or canoes, obviating the need for a Waterfront Development permit. Swimming is also possible at the Petitioner's property, as the depth by the site's shoreline riprap is between 1-2 feet of water depth.

Accordingly, given the importance and sensitivity of submerged vegetation and shellfish habitats that reduce erosive wave energy, serve as important nutrients for recreational and commercial fisheries, sequester carbon and filter degraded waters versus the Petitioners' actual access to the tidal waters, the Department hereby denies the petition for rulemaking.

A copy of this notice has been mailed to the petitioner as required by N.J.A.C. 1:30-4.2.