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Martha's Vineyard Commission Planning and Economic Development Committee Meeting Notes of December 8, 2010

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7 Held in the West Tisbury Town Hall, West Tisbury, 12:00 pm

8 Commissioners Present: Kathy Newman (Chairman), Lenny Jason, and Camille Rose

9 MVC Staff Present: Christine Flynn, Mark London, and Bill Wilcox

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11 The meeting was called to order at 12:15 pm

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13 Kathy Newman stated that several PED members were not able to attend today's meeting
14 therefore the agenda item to discuss the Year-End Status Report and Work Program for Next Year
15 would be postponed to the next PED meeting.

16 **1. MVC DRI Policies – Water Quality**

17 Bill Wilcox, Water Resources Planner, handed out an evaluation of the MVC's Water Quality
18 Policy and its consistency with the Island Plan. Mr. Wilcox stated that the Water Quality Policy
19 was adopted in 2007 and is generally consistent with the Island Plan. However, there are some
20 potential conflicts in particular with agriculture and affordable/community housing.

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22 The MVC's Water Quality Policy does not address agriculture as a land use. Mr. Wilcox outlined
23 some examples of where the Water Quality Policy would need to be revised to better address the
24 nitrogen loading impacts of agriculture. The following are discussion highlights:

- 25 • Agriculture practices involve an intensive use of nitrogen. For example up to 150
26 pounds of nitrogen per acre per year is used to produce sweet corn, the equivalent
27 of the amount produced by ten homes.
- 28 • We assume that 20-30% of nitrogen fertilizer doesn't get taken up by the crops.
29 There are practices that reduce the amount of nitrogen lost from agriculture, such
30 as by sidedressing corn throughout the season does not have as much impact as
31 putting on only one or two applications.
- 32 • Quantifying the direct nitrogen impacts of the use of fertilizer in agriculture is
33 difficult. Testing may show impacts over time in a pond but it can be difficult to
34 identify the source, which can involve testing by placing a well point at exactly the
35 right location and depth to intercept any contamination. Placing a number of wells
36 and taking water samples is a good start but the testing results cannot determine
37 whether the source of nitrates is agriculture or a sewer treatment plant.
- 38 • It was noted that animals are a relatively small source of nitrogen in comparison to
39 crops, provided they are stocked at the right rates per acre and that if their manure
40 is collected, it is properly covered or enclosed.

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- Wells driven at Herring Creek Farm showed some elevated nitrogen levels but the wells couldn't clearly show that they were from agricultural operations and not from wastewater from adjoining lots. The owner claimed that nitrogen was applied directly to the foliage and so was almost completely uptaken; but it appears that this is not correct.
 - A location about 200' downstream of the Morning Glory Farm field on Mill Brook was sampled and no increase in nitrogen was found. It might take a few more years before it shows.
 - It was asked what percentage of nitrates leaches out into the watersheds and shouldn't nitrogen from agriculture uses be less because the nitrogen is absorbed within the topsoil and crop and is not leaching out into the watershed and ground water? The Otis Test Center estimated that 25% of nitrogen from wastewater is denitrified while 75% leaches out into the watershed.

55 It was asked what mitigation options, if any, are there for farmers. The following are some
56 options that may or may not be appropriate:

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- If the groundwater from beneath a farm flows through a wetland, at least 50% of the nitrogen is removed.
 - Groundwater would have to move through the wetland where it's estimated that nitrogen reduction can be between 25% - 75%; 50% reduction is the average estimate. Fresh groundwater water rises along the salt water interface so the amount of nitrogen removal may vary depending on where the ground water flows through the wetland.
 - A riparian buffer would also be helpful.
 - Another natural antidote would be the use carbon in the form of charcoal in a trench deep enough to intercept the groundwater but installation of a Nitrex type treatment would involve extensive excavation along the shore and would require a consultant and permitting.
 - The application of fertilizers could be done in smaller doses and more frequently such as from two applications to six applications within a growing season.
 - Manure from animals should be contained or covered in order to reduce nitrogen and better utilize the manure on fields. It was noted that when it rains, manure filters out of manure pits that are not covered and the manure is then wasted.
 - Other mitigation options could involve establishing a mitigation fund to pay for aquaculture operations that remove nitrogen by growing and harvesting oysters in the ponds.
 - The Chesapeake watershed has a serious nitrogen and phosphorous problem due primarily to large farms including pig farms and direct discharge of wastewater treatment plants to streams flowing into the Bay. The phosphorous is absorbed by the soils until absorption sites were saturated and then it moves. The runoff from animal manure went directly into the Bay and surrounding watersheds.
 - To mitigate these impacts, farmers were required to rotate fields and manure pits had to be covered. Other recommendations included following appropriate stocking rates which recommends the number of animal units per acre depending

85 on the type of agricultural activity particularly where grazing is the primary source
86 of feed, as well as using more organic fertilizers and reducing the use of
87 pesticides.
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89 It was asked what should be addressed in an Agricultural Policy. The following were some
90 recommendations:

- 91 • Any Agricultural Policy should include Best Management Practices (BMPs).
- 92 • A farm plan from the Natural Resource Conservation service may offer a way to
93 implement BMPs.
- 94 • There are many sources of nitrogen such not under Commission purview, such as
95 acid rain, wastewater treatment plants, and individual homes.
- 96 • Presently, nitrogen loading limits for each watershed are based on what the pond
97 can absorb and stay healthy. We subtract acid rain, and divide the remainder by
98 the acreage of the watershed. We could take the position that, since agriculture is
99 important to our community, we set a different nitrogen loading limit for
100 agriculture, similar to what is done for affordable housing. The policy provides for
101 affordable housing projects to go 25% over the nitrogen limit, effectively giving
102 these areas the unused allocation of parks and open space. Would having
103 different nitrogen-loading standards be justifiable?
- 104 • There was a question if the science to determine the water quality of the ponds is
105 sound. For example could the leachate go under the pond and directly out to the
106 ocean without affecting the pond? Mr. Wilcox disagreed with that point. The
107 freshwater is lighter than the saltwater and, in almost all circumstances, discharges
108 along the saltwater/freshwater boundary that is primarily at the pond shorelines.
109 For Edgartown Great Pond, they put in wells and found little indication of
110 freshwater under the saltwater going into the ocean. Mr. Wilcox concluded that
111 the science is very accurate.

112 Mr. Wilcox noted other conflicts with the Water Quality Policy and the Island Plan's Housing and
113 Livelihood & Commerce Sections. The following are discussion highlights:

- 114 • Several strategies from the Island Plan's Housing Section involve an increase
115 in density which would also mean an increase in nitrogen loading. To
116 minimize the nitrogen impacts while keeping affordable housing projects or
117 initiatives economically feasible would involve options such as cluster de-
118 nitrification systems, town sewerage, or other mitigation options. The same also
119 applies to commercial and mixed-use development. Designated areas that
120 allow increased density or new development will also have a nitrogen-loading
121 impact on the ponds and watersheds.
- 122 • A critical question is how to deal with a DRI application in a nitrogen-sensitive
123 area where the applicants cannot reduce nitrogen impacts on the subject
124 property and/or there is an expectation that the town may sewer the area in
125 the future, such as Tisbury's B-2 Business District, such as the Little House Cafe.
126 There are several possible solutions.

- 127 - The applicants could help denitrify a neighborhood within the same
128 nitrogen-sensitive watershed by contributing to the cost of connecting it
129 to a sewer.
- 130 - They could finance denitrification of another project – preferably a
131 public or affordable housing project – in the watershed, such as Doug
132 Hoehn’s offer to help with Tisbury’s Lamberts Cove Affordable Housing
133 Project to offset his proposed project (this offer fell through).
- 134 - They could establish an escrow account, placing monetary mitigation
135 into the account to allow denitrification elsewhere in the watershed or
136 for future town sewerage.
- 137 • It was noted that the MVC needs to be cautious in terms of some of the
138 demands from DRI applicants. The MVC DRI Policies need to be based on
139 science and facts.
 - 140 • Mr. Wilcox recommended that the Water Quality Policy although generally
141 consistent with the Island Plan, needs to be revised particularly concerning
142 agriculture, the issue of development in commercial or other areas likely to be
143 sewerage, and to incorporate the nitrogen loading limits set by the Mass
144 Estuaries Project (as the information becomes available).
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146 Members then asked Mr. Wilcox to outline some of the findings within the Wright Pierce
147 Wastewater Management Plan and the Mass Estuaries Project (MEP) as well as some background
148 on the methodologies used within these studies. The following are discussion highlights:

- 149 • The Mass Estuaries Project has completed a review of the Edgartown Great Pond
150 Sengekontcket and Farm Pond. It was noted the Mass Estuaries Project is a more
151 refined study that includes more data sets than currently provided by the Water
152 Resources Department within Cape Cod Commission and MVC.
- 153 • Mr. Wilcox noted that interim nitrogen loading limits have been established for
154 each of the ponds on the Island by the MVC. The MVC’s limits for Edgartown
155 Great Pond and Sengekontacket Pond are close to those found in the MEP.
- 156 • The Mass Estuaries Project was conducted by UMASS. Some of the studies’ results
157 on the Cape have sparked legal challenges that questioned the science and
158 methods of the Mass Estuaries Project.
- 159 • The results of the Mass Estuaries Project will be given to the Massachusetts
160 Department of Environmental Protection (Mass DEP). Mass DEP will require the
161 Cape towns to meet total maximum daily loads of nitrogen in conformance with
162 the federal Environmental Protection Agency’s (EPA) Clean Air and Clean Water
163 Act just like the EPA is doing for the Chesapeake Bay area.
- 164 • The MEP’s recommendations don’t necessarily translate into specific requirements
165 on a property by property basis. It is up to the towns to determine the best way to
166 meet the state’s requirement. The state’s mandate to reduce wastewater nitrogen
167 by, say 50% in a watershed, doesn’t necessarily mean each property owner has
168 to reduce their nitrogen by 50%.The target could be met by sewerage certain high-
169 density areas while leaving other areas untouched.

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- It was also noted that Title 5 and local Boards of Health have not addressed nitrogen loading to the ponds. Title 5 is not an effective measure to limit nitrogen loading in the coastal ponds.
 - MEP is supposed to recommend the most cost effective options to solve the nitrogen problem, thereby saving communities money. Nevertheless, the state’s mandate to clean the ponds could potentially be very costly to the towns as well as property owners. This leads to towns and individuals questioning the need for such measures as well as the MEP’s findings.
 - In response to these challenges, an independent consulting firm – the Woods Hole Group – was hired to review the Mass Estuaries Project. The findings from the consulting firm generally concluded that the numbers and the methodology from the Mass Estuaries Project were accurate.
 - One bone of contention with the Mass Estuaries Project is that the data has been kept proprietary and that has frustrated several groups both public and private entities.
 - Mr. Wilcox noted that the Wright Pierce Wastewater Management Plan outlined cost effective options for all of the Island towns but to implement the options comes with an approximate \$200 million dollar price tag.
 - Wastewater sewerage for some areas of towns will probably be the most cost effective option. This raises another major concern, namely how to deal with areas where wastewater regulations currently limit potential development, effectively acting like zoning. The towns and MVC should establish and adopt growth control measures before those areas are sewerage so that the sewer is growth neutral.
 - One problem that the Vineyard has is that, for much of the Island, density is too low to make sewerage viable. It is not clear how to deal with lower density areas which have nitrogen-loading problems.
 - Other communities like the Chesapeake Bay were mandated by the EPA to clean the Bay and surrounding watersheds. Like the Vineyard, the Cape, Nantucket, and Rhode Island are experiencing similar nitrogen loading issues within the coastal ponds.

202 Members asked how the MVC could play a lead role in working with the towns to meet the
203 anticipated nitrogen loading limits from the Mass Estuaries Project.

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- How will the towns be able to meet the nitrogen loading figures from the Mass Estuaries Project?
 - Should nitrogen reduction be part of the DRI Checklist? And if so, could this be seen as the MVC helping the towns fulfill a state requirement or will this be seen as the MVC overreaching and or holding up development projects.
 - It was noted that the nitrogen-loading problems in many pond watersheds stem from existing development and not all new development is reviewed by the MVC. How can education and outreach be done in an effective manner to inform decision makers such as the Boards of Health, Planning Boards, Wastewater Commissioners, ConComm, Boards of Selectmen, in addition to voters.

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- It was suggested that as a preventative measure the MVC's Water Quality Policy Nitrogen Loading Limits which have been close to the Mass Estuaries Project results thus far could be a model for the towns to begin establishing nitrogen loading regulations. We could meet with the towns to discuss the willingness of the towns to adopt the MVC's Water Quality Policy's Nitrogen Loading Limits on an interim basis. However, in that the MEP results are coming soon for many ponds, they might prefer to have these figures before adopting stronger policies.
 - Most ponds have watersheds that are located in more than one town, so towns should work together or even work regionally to address the nitrogen loading limits of the ponds.

225 It was noted that MVC Staff has been actively working with the towns of Edgartown and Oak
226 Bluffs regarding the Mass Estuaries Project for the Edgartown Great Pond, Sengekontacket Pond,
227 and Lagoon Pond. It was further noted that the Water Alliance has done a great amount of
228 education and outreach to the public regarding the Mass Estuaries Project and the Wright Peirce
229 Wastewater Management Plan. Mr. Wilcox noted that he has been working directly with
230 Edgartown representatives for more than two years regarding the Edgartown Great Pond. But
231 Mr. Wilcox indicated that the final results of the Mass Estuaries Project will require a substantial
232 amount of staff and resources to assist Towns with planning to meet the target nitrogen reduction.
233 This is well beyond work that is currently being done.

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235 The next PED meeting is Wednesday January 12th at 12:00 pm at the West Tisbury Town Hall.

236 The meeting adjourned at 1:37 pm

237 *Meeting summary prepared by Christine Flynn, with Mark London and Bill Wilcox.*