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October 3, 2008

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	: River Run (formerly known as Wareham Road Mixed Use Development)
PROJECT MUNICIPALITY	: Plymouth
PROJECT WATERSHED	: Buzzards Bay
EOEA NUMBER	: 13580
PROJECT PROPONENT	: ADM Agawam Development LLC
DATE NOTICED IN MONITOR	: August 27, 2008

As Secretary of Energy and Environmental Affairs, I hereby determine that the Final Environmental Impact Report (FEIR) submitted on this project **adequately and properly complies** with the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62I) and with its implementing regulations (301 CMR 11.00).

The River Run project described in the FEIR is situated on a 1,333-acre parcel in South Plymouth and consists of a mixed-use village community that will incorporate principles of smart growth, open space preservation, traditional village design, and pedestrian orientation. I wish to commend the proponent for its efforts to balance responsible development with habitat conservation interests, and on its noteworthy commitment to preserve approximately 1,600 acres of land on and off-site. Although the project is not subject to the MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol, the project incorporates commitments to green building, low impact development (LID), and other sustainable design principles. I note the proponent has recently begun exploring possibilities for the incorporation of several renewable energy technologies, including wind, solar and ground source heat loop (geothermal) systems which could serve to further mitigate the project's GHG emissions. As conceived by the proponent, the project provides a unique opportunity to pursue the development of renewable energy generation

as an integral part of a major development. I applaud the proponent's leadership in pursuing that opportunity and implementing these promising ideas.

As outlined in further detail below, I note that certain important details of the project's proposed mitigation with respect to water supply, wastewater and rare species impacts remain to be resolved. As demonstrated by the proponent's commitment to conservation and sustainability noted above, I am confident that the outstanding issues noted by commenters and discussed herein will be adequately addressed by the proponent during the permitting process. The project may proceed to state permitting.

Project Description

The proposed project involves development of 1,175 residential units, 60,000 square feet (sf) of commercial space, and a community recreational facility (up to 75,000 sf). The proposed project will involve alteration of approximately 381 acres of the 1,333-acre project site (including approximately 81 acres of new impervious area). The remaining areas of the project site (952 acres) will remain as protected habitat and open space (which will include trails and continuing cranberry operations). The proposed development approach includes the use of innovative zoning tools and conservation restrictions to concentrate development in certain areas and permanently protect significant acreage of land on and off-site.

The project site is located in an area well known for its ecological significance due to the presence of the Agawam River, globally-significant pine barrens, and at least 40 state-listed rare species. A significant portion of the project site is located within priority and estimated habitat for rare species. The project's mitigation plan includes permanent protection of more than 750 acres of state-listed species habitat on and off-site.

The project proposes to utilize the Town of Plymouth's Transfer of Development Rights (TDR) bylaw and its Traditional Rural Village Development (TRVD) overlay district bylaw to create a more compact development than would otherwise be allowed under conventional subdivision zoning. The TDR process will result in the permanent protection of open space ("sending parcels") while allowing an increased density of development in other areas ("receiving parcels"). As discussed in the FEIR, the proponent intends to create a walkable community with a mix of housing types and workplaces, which integrates the natural environment as part of the proposed project while minimizing the development envelope. Overall, the proposed project will result in conservation of approximately 1,600 acres of land, which will include Conservation Restrictions on more than 1,200 acres of land.

The project includes construction of a privately-owned public water supply system with two wells and associated infrastructure, including an elevated storage tank with a capacity of 500,000 gallons per day (gpd). The capacity of the proposed Wareham Road well is 100,000 gpd and the Agawam Road well is being designed for a maximum daily capacity of 630,000 gpd. The proponent intends to use the Wareham Road well to serve the initial phase of the project. Once the Agawam Road well comes online, the Wareham Road well will be no longer be used as a potable water supply. The project site overlies the Plymouth Carver sole source aquifer. The

proposed water withdrawal sources are located in the Buzzards Bay watershed, within the Agawam River sub-basin.

The project includes construction of an on-site Wastewater Treatment Facility (WWTF), located in the northwest portion of the site, which will be designed to handle a maximum daily flow of 395,000 gpd. The wastewater treatment process will consist of a membrane biological reactor (MBR) followed by denitrification filters. The proposed effluent standard is five milligrams per liter (5 mg/l). The WWTF will discharge to groundwater through open sand beds. Effluent discharge will occur within the Agawam River basin. The initial project phase (65 single-family homes and 35 multi-family units) will be served by individual Title 5 on-site sewage disposal systems with enhanced nitrogen reducing technology. These initial flows will be connected to the WWTF once it is operational.

The proposed project includes construction of approximately 17 miles of water mains and 15 miles of sewer mains. The mains will be located primarily within the layout of proposed new roadways and footpaths, with the exception of approximately 1,550 feet of water mains and 4,260 feet of sewer mains, that will require additional land alteration and two wetland crossings.

Traffic impacts for the full project build-out are estimated at 9,344 vehicle trips on an average weekday. The project includes construction of a new roadway to connect Bourne Road and Wareham Road, and 2,866 new parking spaces.

MEPA Jurisdiction and Permit Requirements

The project is undergoing MEPA review and requires a mandatory EIR pursuant to: Section 11.03(1)(a)(1) of the MEPA regulations because it involves alteration of 50 or more acres of land; Section 11.03 (1)(a)(2) because it involves creation of 10 acres or more of impervious area; Section 11.03(4)(a)(3) because it involves construction of new water mains ten miles or more in length; Section 11.03(5)(a)(3) because it involves construction of new sewer mains ten or more miles in length, Section 11.03(6) because it will result in 3,000 or more new vehicle trips per day, and Section 11.03(6)(a)(7) because it will result in construction of 1,000 or more new parking spaces. The project is also undergoing MEPA review pursuant to: Section 11.03(2)(b) because it will involve a "take" of an endangered or threatened species or species of special concern; Section 11.3(3)(b)(1)(f) because it will result in alteration of one-half acre or more of wetland resources; Section 11.03(4)(b)(1) because it involves withdrawal of 100,000 gallons or more per day (gpd) from a water source that requires new construction for the withdrawal; Section 11.03(5)(b)(1) because it involves construction of a new wastewater treatment facility with a capacity of 100,000 or more gpd; Section 11.03(10)(b)(2) because of potential destruction of an archaeological site listed in the Inventory of Historic and Archaeological Assets of the Commonwealth; and Section 11.03(1)(b)(4) because of the potential conversion of land containing prime or state-important soils to non-agricultural use.

The project requires a 401 Water Quality Certification, a Groundwater Discharge permit, a Water Management Act Permit, New Source Approval and other water supply approvals from the Massachusetts Department of Environmental Protection (MassDEP). The project requires a Conservation and Management Permit from Division of Fisheries and Wildlife, Natural Heritage

and Endangered Species Program (NHESP). The project also requires an Order of Conditions from the Plymouth Conservation Commission (and on appeal only, a Superseding Order from MassDEP). The project will also require a National Pollutant Discharge Elimination System (NPDES) Construction Activities Permit from the US Environmental Protection Agency (EPA). The project is subject to review by the Massachusetts Historical Commission and requires State Archaeologist's Permits. The project may require a federal consistency review by the Massachusetts Office of Coastal Zone Management (CZM).

The project has received preliminary notice of a Massachusetts Opportunity Relocation and Expansion (MORE) grant for transportation improvements from the Executive Office of Housing and Economic Development (EOHED). Therefore, MEPA jurisdiction is broad and extends to all aspects of the project with the potential to cause Damage to the Environment as defined in the MEPA regulations.

REVIEW OF THE FEIR

The Final EIR (FEIR) is generally responsive to the Scope. However, additional information and analysis will be required during permitting as outlined below and as required by state agencies.

Cumulative Impact Analysis

The FEIR considers the cumulative impacts of the project with regard to location of the water supply system and the wastewater treatment facility. As noted in the FEIR, the proposed Wastewater Treatment Facility (WWTF) and associated disposal field are located within the upper portion of the Agawam River watershed, upgradient of the proposed water supply well locations. The well locations were selected so that their capture zones will not overlap the projected recharge area associated with the WWTF disposal field. According to the FEIR, the effluent discharge will not fall within the Zone II wellhead protection area of proposed or existing public water supply wells.

The FEIR includes supporting calculations for a watershed mass balance analysis, which evaluates project impacts to streamflow in the Agawam River. The FEIR concludes that impacts are negligible based on the results of the analysis, which predicts a change in streamflow of less than one percent for the 99 percent duration flow.

The FEIR identifies the White Island Bogs area as an area of the site where potential conflicts between residential uses and cranberry operations could occur. The proponent has agreed to change its farming practices on these bogs. The proponent has committed to phase out the use of nitrogen and phosphorus fertilizers and explore opportunities to convert bogs into environmentally-beneficial wetlands and ponds. The proponent will incorporate buffer zones between cranberry bogs and residential areas, develop educational material for residents and provide abutter notifications relating to agricultural operations. The proponent will promote

Integrated Pest Management as required by the TRVD Special Permit issued by the Plymouth Planning Board.

Wetlands

According to the FEIR, wetland resource impacts have not changed since the filing of the DEIR. Three resource areas associated with the Agawam River corridor, referred to in the FEIR as Areas 1, 2 and 3, will be impacted by the project. Wetlands impacts will result from installation of utility poles in riverfront area and an additional 65-foot width of cleared area for the utility right-of-way. Approximately 2,600 sf of riverfront area will be permanently altered as a result of a change in vegetative cover from forested upland to lower growing scrub-shrub upland. The project may involve some mature tree pruning for installation of overhead utility lines. Area 1 will also be impacted due to installation of piping for the proposed Wastewater Treatment Facility (WWTF). Directional drilling is proposed to minimize impacts. Impacts are estimated in the FEIR at 2,500 sf on each side of the river (within the 100-200 foot zone). Upon completion of the work, disturbed areas will be restored to their original grade and revegetated with low growing native vegetation.

Installation of electricity poles in Area 2 and maintenance of a 30-foot wide utility corridor right-of-way will result in approximately 12,000 sf of riverfront area impact, including a change in vegetative cover from forested upland to lower growing scrub-shrub upland. The proposed wetlands crossing in Area 2 for the water supply pipe will impact 2,000 sf of Land Under Water and 40 linear feet of Bank. The FEIR proposes this crossing (a 60-foot span) at a narrow section of the river to minimize impacts. As discussed in the rare species section below, the proponent will be required to include an evaluation of a directional drilling alternative as part of its permit application to NHESP. According to the FEIR, impacted areas will be restored to their original grade and stabilized to provide protection against erosion, and existing habitat will be restored using appropriate plantings and bioengineering techniques.

Area 3 includes Bordering Vegetated Wetlands (BVW), which will be impacted by the proposed water supply line installation. The wetlands crossing will alter 500 sf of resource area along an existing cart path. The FEIR indicates that these impacts will be temporary and water main installation will be conducted using the cut and cover method. An overhead utility line will be installed in this area also, which will not require any clearing of vegetation within wetlands resource areas. The proponent will install appropriate measures such as clay dams to prevent any diversion of surface or ground water along the installed trenching and pipes, and the cart path will be restored to its previous condition upon completion of the work.

In its discussion of alternatives to avoid and minimize wetland impacts, the FEIR notes that the majority of the project has been located outside of wetland resource areas. The proponent evaluated alternatives associated with the WWTF and water supply wells in the DEIR and selected locations based on extensive investigation of the project site. The FEIR indicates that it is not feasible to locate infrastructure necessary without crossing wetland resources. The proponent will select crossing areas with the minimum width possible and install water supply and WWTF pipes along existing cart paths to minimize disturbance. According to the FEIR, the proponent anticipates that the wetlands crossings will qualify under the Limited Project

provisions of the Wetlands Protection Act. The total riverfront area on the project site is estimated at 118 acres. Riverfront area impacts associated with the project are estimated at a total of 38,000 sf.

The FEIR concludes that no permanent impairments to wetland resource areas will result from the project and therefore does not propose mitigation. I note that the proponent will need to obtain a Final Order of Conditions from either the Town of Plymouth or, on appeal, MassDEP, and that additional measures to avoid, minimize or mitigate impacts to wetland resources could be required. The proponent has already committed to restoration of all areas of temporary wetlands disturbance. The proponent has also committed to development of an Invasive Species Management Plan and implementation of erosion and sedimentation controls. According to the FEIR, the proponent has identified vernal pool habitat within eleven of the wetlands areas on the project site, and has voluntarily submitted documentation to NHESP to have the vernal pools certified.

Water Supply

The scope for the FEIR required that the proponent investigate the feasibility of maintaining two distinct water supply wells to provide system redundancy and to balance the withdrawal from the aquifer based on environmental conditions, as recommended by MassDEP in its comment letter. The scope required additional information and analysis on impacts associated with a design capacity of greater than 70 gallons per minute (gpm) for both wells, and an evaluation of seasonal impacts to stream flow.

The FEIR proposes use of the Wareham Road well for the initial phase of development. This well will be located on the east side of the Agawam River and designed for up to 69 gpm to provide a capacity of 100,000 gallons per day (gpd). The FEIR proposes that the Wareham Road well will be taken out of operation as a potable water supply once the Agawam well, to be located on the west side of the river, is in operation. According to the FEIR, the water supply system will serve the project only. Connections to residential users outside the project are not proposed in the FEIR.

The Agawam well, as proposed in the FEIR, will be capable of producing 660 gallons per minute or up to one million gpd. In lieu of a detailed analysis of impacts associated with a design capacity of more than 70 gpm for the Wareham Road well, the FEIR lists several disadvantages associated with continued operation of a well on the east side of the Agawam River. Among the disadvantages cited, the FEIR indicates that a withdrawal rate of 630,000 gpd from the Wareham Road well would induce infiltration from the river. MassDEP's recommendation regarding evaluation of the Wareham Road well was for the purpose of establishing a short term and readily available alternative supply for system redundancy, not as a long-term solution in the event of a failure of the Agawam well. It is not clear from the FEIR whether induced infiltration from the river would occur under a long-term sustained average day demand of 300,000 gpd or a short-term 630,000 gpd maximum demand.

Since the filing of the DEIR, the capacity of the proposed elevated water storage tank has been reduced from 1.1 million gpd to 500,000 gpd. As noted in MassDEP's comment letter, this

would not be sufficient to meet the requirement for two days of storage capacity. MassDEP approval of a redundant water supply source of sufficient capacity will be required for the project. The FEIR indicates that a second well will be located within 200 feet of the proposed Agawam well. A specific location for this well is not identified in the FEIR. As noted by MassDEP in its comment letter, if the Agawam well becomes contaminated, the proposed replacement well would have the contaminated Agawam well within its Zone I. The proponent may not therefore be able to obtain approval for the replacement well as proposed. Should a change to the water supply system as proposed in the FEIR be required pursuant to conditions imposed by MassDEP, the proponent should consult with the MEPA Office to determine if a Notice of Project Change (NPC) pursuant to 301 CMR 11.10 will be required.

With regard to the Agawam well, MassDEP has reviewed the pumping test report and is considering issuing its approval for a maximum daily rate (annual average) of 543 gpm pending resolution of the ownership or control of the full Zone I and completion of MEPA review. As part of the permit application process, the proponent should provide the following to MassDEP:

A more detailed analysis of withdrawal impacts associated with use of the Wareham Road well as a short-term alternate redundant water supply source (the proponent should consult with MasDEP regarding specific data required to complete the analysis);

- Site plan identifying potential locations for a replacement well on the west site of the Agawam River;
- A more detailed evaluation of options for system redundancy and a timeline for siting and testing of a redundant source;
- Specific measures to achieve the residential water use standard of 65 gallons per capita per day;
- Additional data as required by MassDEP for the well associated with the wastewater treatment facility, to be considered during the water management permitting process.

Fisheries

The FEIR notes that the proponent consulted with the Division of Marine Fisheries (DMF) as required by the Certificate on the DEIR to discuss its comments regarding maintenance of adequate streamflow in the Agawam River during periods of diadromous fish migration. The FEIR indicates that flow in the fish ladder at the outlet of the Agawam Reservoir provides safe passage for a variety of fish species, and that flow is maintained by daily coordination between the proponent and the Wareham Herring Warden during the late March through mid-June period, and as required during other time periods. As further detailed in its comment letter, DMF has placed a ban on the harvest of river herring due to regional declines in population levels. In consideration of this action, appropriate time of year limits should be required to protect herring and eels. All in-water turbidity producing activities should be prohibited from March 15 to October 1. The proponent should evaluate water use and diversions associated with cranberry bog operations as recommended by DMF and implement measures as necessary to ensure there is adequate water in streams for fish passage during the Spring, Summer and Fall.

Wastewater and Water Quality

The project site is within watersheds that drain to the Wareham River Estuary and to Buttermilk Bay, which are being assessed for water quality conditions under the Massachusetts Estuary Project (MEP). The purpose of the MEP is to develop Technical Reports that establish critical nitrogen loading thresholds (which will be used to develop Total Maximum Daily Loads (TMDLs)) and to assist communities in developing Comprehensive Water Resource Management Plans. The proposed project will discharge wastewater to the Wareham River estuary, which is on the Massachusetts Year 2006 Integrated List of Waters (known as the "303d" list) for nutrient impairment. A draft technical report is expected in early 2009. Preliminary results from the MEP study for this system indicate nitrogen impairment.

The Scope for the FEIR required that the proponent evaluate alternatives to minimize discharge of nitrogen. The Scope required that the FEIR include a nitrogen-neutral alternative and a nitrogen offset strategy.

As described in the FEIR, the proponent has committed to several measures to minimize nitrogen discharge, and has proposed a net-negative nitrogen discharge which will be achieved by offsets that the proponent believes will remove more nitrogen than the proposed project will generate. The FEIR indicates that the Title 5 systems proposed for the initial phase of 65 single-family and 35-multi family units will be temporary. These units and future development will be connected to the proposed Wastewater Treatment Facility (WWTF), to provide a higher level of nitrogen removal. The FEIR proposes an effluent standard of 5 milligrams per liter (5mg/l) for the WWTF. The maximum daily design flow proposed for the WWTF has been increased from 344,000 gpd to 395,000 gpd. Average flows are expected to be approximately 263,500 gpd. The proponent has committed to reserve 52,000 gpd of capacity at the WWTF to accept sewer flow from existing off-site septic systems in the Agawam River basin, to offset nitrogen discharge associated with the project. The FEIR includes a commitment to cease phosphorous and nitrogen fertilizer application on approximately 69 acres of cranberry bog to reduce nutrient load (after connection of the 500th residential unit to the WWTF). The proponent proposes to implement restrictive covenants with homeowners to prohibit nitrogen-based fertilizer use for lawn maintenance.

The proponent has committed to fund over $500,000 in grants for septic system improvements and sewer connections in the Agawam River sub-basin. The proponent will set up a Makepeace Conservation Trust and will contribute $525 to the Trust each time a new residential unit within the project is connected to the WWTF. Grants from the fund of up to $5,000 per home will be made available to pay for septic system upgrades of existing properties outside of the project.

The FEIR includes the results of the proponent's nutrient loading analysis. The FEIR compares nutrient loads associated with an as-of-right development scenario and the project as proposed, and concludes that the project would result in less than half the load of an as-of-right development. The FEIR estimates the nitrogen load from existing conditions at 2,525 pounds per year (lbs/yr); the as-of-right development nitrogen load is estimated at 13,299 lbs/yr, and the proposed project's total nitrogen load is estimated at 5,819 lbs/yr. The FEIR includes an analysis

of nitrogen attenuation in the watershed and indicates that nitrogen load is reduced by approximately 50% due to natural processes within wetlands and surface water bodies. The FEIR includes a summary (Table 5.6) of the nitrogen loading rates for nitrogen impairment zones in the lower reaches of the Agawam River and Red Brook basins. Based on the analysis, the FEIR estimates a nitrogen load in the lower watershed, after attenuation, or 1,882 lbs/yr. Of this, 1,100 lbs/yr is attributed to the project and 782 lbs/yr to existing conditions. The FEIR concludes that the excess capacity to be provided at the WWTF will enable the project's nitrogen load to be offset entirely by treating approximately 35,000 gpd of wastewater from existing off-site residential systems that currently discharge to septic systems.

As noted in its comment letter, MassDEP has evaluated nitrogen loading from the project using the methodology developed under the MEP, which differs slightly from that presented in the FEIR. However, MassDEP and the proponent have come to general agreement on the pre- and post-development calculations and MassDEP will work with the proponent during the permitting process to finalize calculations and necessary mitigation measures. MassDEP's nitrogen calculations have accounted for natural attenuation, which in combination with redistribution of wastewater due to flow patterns through groundwater and ponds will mitigate some of the load to the Wareham River system. However, because some of the wastewater flows out of the watershed, it impacts other systems, which are undergoing MEP evaluations and also likely be assessed as nitrogen-impaired.

I appreciate the proponent's efforts to develop a net-negative nitrogen discharge from the project and a nitrogen offset strategy. However, I also note the comment letters received that question the effectiveness of the nitrogen offset strategy in the absence of clear commitments to fund the infrastructure necessary to connect off-site properties to the WWTF. Final details of the nitrogen offset mitigation plan must be worked out with MassDEP during the Groundwater Discharge permit process, which will allow for additional public review and comment. Some commenters also questioned the assumption that individual homeowners would abide by prohibitions on nitrogen fertilizer use. I note that MassDEP is evaluating appropriate nitrogen reduction credits for the proposed prohibition of nitrogen fertilizers and will address issues relating to enforcement of the prohibition during the permitting process.

Although several issues remain to be resolved, I am confident that adequate provisions for mitigating and offsetting the increased nitrogen load from the project will be incorporated in any groundwater discharge permit (GWDP) issued by MassDEP. Furthermore, MassDEP indicates in its comment letter that reissuance of an initial GWDP will be contingent upon a demonstration by the Permittee that adequate mitigation measures are being implemented and are effective. MassDEP will therefore have the ability to ensure that the project is not contributing to further impairment of the Wareham River Estuary or Buttermilk Bay.

The following issues must be addressed during permitting and the additional information required below should be provided by the proponent as part of its GWDP application.

- The proponent should work closely with the Towns of Plymouth and Wareham to coordinate with their wastewater planning efforts and to identify existing sources for which connections could yield the greatest environmental benefits to the impacted

estuaries. The proponent should consider the location of potential tie-ins of existing wastewater resources when designing the collection system for the project. The proponent should include updates on consultations and system design as part of its GWDP application to MassDEP;

- The GWDP application should include more details on strategies to maximize the participation of existing sources that have the most significant impact in the project area, and describe a proposed system to quantify and verify tie-ins of sources outside the project and related nutrient reductions;
- The GWDP application should include additional information on the cost of sewer infrastructure for the tie-ins and potential funding sources;
- The proponent should provide MassDEP with a revised timetable for cessation of nitrogen and phosphorous-based fertilizers on 69 acres of cranberry bogs that will reduce and eliminate these fertilizers at the earliest possible date. The GDWP application should document that nitrogen mitigation will occur prior to any surface water impacts from new sources;
- The GWDP should include additional information to describe how the prohibition of nitrogen fertilizers through restrictive covenants will be enforced and the consequences of violating the prohibition. The proponent should implement a similar restriction for lawn maintenance associated with non-residential components of the project;
- An evaluation of other potential offsets (I refer the proponent to MassDEP's comment letter which includes recommendations for additional offsets to consider); and
- The GWDP application should include a revised proposed Section 61 Findings that includes all mitigation commitments, including nitrogen mitigation and offsets.

Water Reuse

The proponent has committed to place an additional conduit under the Agawam River during the directional drilling process for the installation of the force main to the WWTF so that a return "purple pipe" for reuse water can be easily installed in the future. The proponent should consider use of treated wastewater for irrigation. As noted in MassDEP's comment letter, irrigation with treated wastewater may be viable because of regulatory revisions expected in the near future. I encourage the proponent to reconsider water reuse for toilet flushing in commercial facilities.

Rare Species

The proponent has committed to permanently protect and preserve rare moth pine barrens habitat at a ratio of two acres for every acre of moth habitat impact. In addition, the proponent will permanently protect an area equivalent to greater than 70 percent of the project site for Eastern Box Turtle habitat. A total of 1,600 acres will be preserved and protected as part of the habitat management plan and open space commitments. Since the filing of the DEIR, the Boy Scout mitigation parcel has been relocated to the southwest portion of the Boy Scout parcel to provide better quality moth habitat.

For the purposes of rare species mitigation planning, the FEIR includes undisturbed buffers and open space areas in the quantification of the development footprint, for a total of 469

acres of impacts to state-listed species habitat (direct alteration of land is estimated at 381 acres). According to the FEIR, the project will result in disturbance of 394 acres of pine barrens habitat for state-listed moth species. The project will result in disturbance of approximately 359 acres of potential Eastern Box Turtle habitat. The FEIR identified eight mitigation parcels (M1 through M8) as shown on figure 6.3. Parcels M1 and M8 are located off-site. The remaining parcels are on-site. The FEIR includes the acreage of each of the eight parcels, which range from 25 acres (M5) to 203 acres (M1), and which are divided into discrete two-acre management units.

The Scope required that the FEIR include an outline of an approach to project phasing that ties specific habitat mitigation commitments to each phase of the project. The FEIR includes a discussion of habitat mitigation in the context of project phasing and indicates that project construction is expected to be phased over a period of 12 to 15 years. Table 6.2 of the FEIR outlines the amount of habitat alteration for each year (1 through year 12) of the development, and identifies the corresponding management units and total acreage proposed for mitigation. A total of 755 acres is proposed for permanent protection as mitigation for 394 acres of moth habitat impact. Additional habitat within the management units provides habitat for Eastern Box Turtle to achieve the of 70 percent habitat preservation goal for this species. The proponent intends to include a detailed phasing plan as part of its application to NHESP for a Conservation and Management Permit. As noted in the FEIR, following the transfer of development rights (TDR) process associated with a particular phase of development, the proponent will place Conservation Restrictions on the mitigation parcel (sending parcel). CRs will be recorded on portions of the project site or other mitigation parcels such that two acres of moth species habitat are preserved for every one acre of habitat disturbed during that phase of development. According to the FEIR, the proponent will not undertake construction of any phase of development until the CR is placed upon the associated sending parcel, according to the requirements of a NHESP-approved Conservation and Management Plan.

The proponent should consult with NHESP regarding the proposed phasing and CR language and submit additional detail as required for the Conservation and Management Permit application process. The proponent must obtain NHESP approval of a final mitigation phasing plan and the final conservation restriction language. The proponent should submit additional information and revised site plans to NHESP during permitting to clarify which areas will be placed under CR. There are a number of discrepancies in the text and figures of the FEIR such that some areas proposed for state-listed species mitigation are not shown as being protected under a CR. These discrepancies, which are detailed in the comment letter from The Nature Conservancy, should be addressed in the permit application to NHESP. In response to the scope's request for a draft CR, the FEIR referred to a draft provided in the Draft EIR. However, this was a generic template and included some language relating to grantor rights that may be inconsistent with the habitat conservation goals for the project site. The proponent must submit a detailed draft CR as part of its application to NHESP that addresses specifics of the project site in a meaningful way and demonstrates that the proposed CR will be an effective mechanism to ensure permanent protection of habitat. The permit application to NHESP should include details on future ownership and management of open space.

The proposed water supply line requires two wetlands crossings of the Agawam River. The Scope required that the FEIR examine the feasibility of using directional drilling to install

the water supply line to minimize disturbance of river and its floodplain. The FEIR proposes a cut and cover method for pipe installation during periods of low flow, with bypass piping to maintain river flow during in-river construction, which is expected to last 1-2 days. The FEIR concludes that impacts will be temporary and minimal and implies that directional drilling would not be cost-effective. However, the FEIR does not include an evaluation as requested. The FEIR proposes directional drilling for the WWTF pipe installation but does not explain why this approach is not proposed for the water supply line. The proponent must submit to NHESP an evaluation of directional drilling as an alternative to the proposed cut and cover method for the Agawam River crossings. The NHESP filing should include more detailed plans on proposed crossing areas and measures to minimize impacts to endangered species habitat associated with the proposed water supply line. The proponent must obtain NHESP approval of the water supply line installation method, which should incorporate measures to avoid and minimize impacts to the maximum extent practicable.

The Scope required that the FEIR include an outline of a long-term habitat management plan that addresses mechanisms to ensure long-term implementation. According to the FEIR, the proponent is preparing a habitat management plan, which will focus on preservation of a mosaic of pine barrens habitat for rare moth species. The FEIR indicates that little, if any, active management is required for preservation of the Eastern Box Turtle habitat. The FEIR outlines the goals and objectives of the habitat management plan, which include the use of conservation restrictions (CRs), protection of wetlands and associated buffer zones, and measures to reduce the potential for severe wildfires within preserved habitat area. The FEIR indicates that prescribed burning in certain areas may be recommended after year 5. Controlled burning has also been recommended by NHESP and The Nature Conservancy. However, the Town of Plymouth has expressed some concerns regarding controlled burning. The Town of Plymouth Fire Department and Planning officials met with the proponent and NHESP, and as noted in the town's comment letter, the parties will coordinate closely on any future controlled burning, which will be subject to approval by the Fire Chief.

While the FEIR discusses the habitat management plan in general terms, a more detailed plan will be required as part of the permit application process pursuant to the Massachusetts Endangered Species Act (MESA). The proponent must submit a habitat management plan to NHESP that includes details on quantifiable habitat management goals, management methods, frequency of management, monitoring, identification of responsible parties, a long-term funding mechanism, and a contingency plan. Based on NHESP's comment letter, the management plan must include prescribed burning in order to be successful. If the proponent is unable to obtain the necessary local, state or federal permits to implement burning, a contingency plan must be developed and implemented in order to ensure that the project still results in a net benefit to the affected state-listed species.

The FEIR discusses additional mitigation measures the proponent will implement to protect state-listed species. In order to minimize lighting impacts on moths, the proponent will restrict project lighting (during construction and post-construction) to lights within the yellow/red range, and will minimize uplighting in compliance with Plymouth's dark sky bylaw. The proponent has also committed to minimize the use of curbing on project roadways to facilitate movement of turtles. The proponent will establish a 200-foot no-disturb buffer zone

where practicable around Deer Pond to protect New England Bluet (*Enallagma laterale*) habitat. The project includes construction of a subdivision roadway over an existing cart path within the 200-foot buffer zone. No other work is proposed within 200 feet of the pond. A deed restriction will be placed on any lots with property adjacent to Deer Pond to further protect the pond, the vegetated wetlands, and the associated buffer zones.

I am satisfied that adequate provisions for mitigation of impacts to state-listed species habitat will be incorporated in any permit issued by NHESP. The proponent must include additional information and analysis to NHESP as part of its permit application as outlined above, and as required by NHESP.

Open Space and Habitat Conservation

As described in the FEIR, the project will include approximately 1,600 acres of open space. The Open Space plan included in the FEIR (figure 7.2) indicates 1,215 acres to be placed under a CR and an additional 390 acres that will be protected as open space without a CR. The proponent should provide additional information during the NHESP permitting process to clarify location and acreage of open space and habitat protection areas, and details of mechanisms for permanent protection of all open space areas.

The FEIR outlines three types of open space: the most sensitive land containing habitat for rare species, which will be subject to CRs; land that includes wooded areas, natural resource buffer zones, agriculture and forestry lands and wildlife corridors; and land located within development areas that will be used for recreation. A Trail Phasing plan is being developed and will be subject to review and approval by the Plymouth Planning Board. The open space network will include pedestrian and bicycle paths and nature trails. The FEIR indicates that the proponent is evaluating the feasibility of providing a publicly accessible wildlife sanctuary on the project site.

The proponent has committed to ecologically-based landscaping including use of native plan species and drought-tolerant plants, and prohibition of nitrogen-based fertilizers. Landscaping requirements will be prescribed in Neighborhood Association documents.

The FEIR discusses the phased use of Transfer of Development Rights (TDR) for the project. Development rights will be transferred from sending areas to receiving areas and the sending areas will then be placed under a CR. The proponent intends to initiate the TDR process by transferring 30 TDRs from the Halfway Pond West sending area to the initial development neighborhood where 65 single-family units are proposed. The Halfway Pond West sending parcel will then be subject to a CR. The FEIR identifies other sending areas including the Halfway Pond East parcel (54 TDRs), the Century Bog Parcel (20 TDRs), and the Agawam Core Sending Area (135 TDRs). The proponent expects to use approximately 785 Development Rights to complete the project.

Stormwater and Low Impact Development (LID)

The DEIR indicates that the project will be designed in accordance with the MassDEP Stormwater Management Policy standards, and the proponent has committed to the use of low impact development (LID) principles and best management practices. The MassDEP stormwater standards have been incorporated into the Wetlands Protection Act Regulations effective January 2, 2008, which require that stormwater be managed according to 310 CMR 10.05(6)(k)-(q). As noted in the Town of Plymouth's comment letter, the proponent is assisting the town to finalize the Town-wide LID stormwater management design guidelines, in addition to the recently adopted Traditional Rural Village Development (TRVD) subdivision roadway regulations, which will reduce paved road widths.

Federal Consistency Review

The proponent should consult with the Office of CZM to determine if the project is subject to CZM federal consistency review, and to provide additional information as necessary to demonstrate that the project will be consistent with applicable program policies.

Historical and Archaeological Resources

The FEIR discusses several archaeological surveys and other site investigations conducted to date, and notes that additional surveys will be conducted for future phases of the project including the area proposed for the wastewater treatment facility. The proponent should continue consultations with the Massachusetts Historical Commission (MHC) regarding the surveys and any mitigation that may be necessary. The proponent has agreed to draft and enter into a Memorandum of Agreement (MOA) with the MHC to ensure that any significant cultural resources affected by the project are identified, reviewed and mitigated appropriately.

Transportation

MEPA jurisdiction did not extend to transportation when the Certificate on the DEIR was issued. However, the proponent was asked, and voluntarily provided, an analysis of traffic-related impacts and a transportation improvement plan in the DEIR. Since that time, the Town of Plymouth has received a preliminary award of funding through the Commonwealth's MORE program for the realignment of Bourne Road. Therefore, MEPA jurisdiction is now broad and includes transportation.

The FEIR includes a revised traffic study, which the proponent refined based on comments received by the Town and other stakeholders. Revisions to the traffic study include additional review of other development projects in the area, refinement of the trip distribution pattern, inclusion of traffic calming features along Long Pond Road and Bourne Road, a preliminary transportation improvement plan, refinement of the Wareham Road improvements and addition of pedestrian amenities along the realigned Bourne Road. The trip generation estimated was adjusted to account for the addition of 100 residential units and a community center, and the reduction in the project's retail component since the filing of the DEIR.

A transportation mitigation summary is included in the FEIR that lists twenty-one locations where proposed improvements will occur, and identifies responsible parties and a schedule for completion. Some of the proposed improvements will be undertaken by other project proponents as noted in the FEIR and in the comment letter from the Office of Transportation and Public Works (EOT). The FEIR describes the proponent's proposed transportation improvement program, which includes:

- Design and construction of the Bourne Road Connector;
- Realignment of Bourne Road approaching the Bourne Road Connector;
- Wareham Road upgrades;
- Reconstruction of Long Pond Road at Clark Road and Long Pond Road at Halfway Pond Road to function as a single lane roundabout;
- Realignment of the intersection of Long Pond Road at Ship Pond Road;
- Realignment of the intersection of Halfway Pond Road at Bourne Road;
- Construction of sidewalk between Bourne Pond Road Connector and linking the project to the Plymouth South Elementary School, and installation of pedestrian actuated traffic signal and traffic calming features between the sidewalk and the school; and
- Traffic calming measures within the project site and along Bourne Road and Wareham Road;
- A comprehensive Transportation Demand Management (TDM) program to reduce single-occupant vehicle use and encourage car/van-pooling, bicycle and pedestrian travel; and
- A traffic monitoring program during project development and after full build-out.

As indicted by EOT in its comment letter, the FEIR included a transportation study that generally conforms to the Executive Office of Energy and Environmental Affairs (EEA)/ EOT Guidelines for EIR/EIS Traffic Impact Assessments. EOT is satisfied with the level of analysis included in the study and the overall commitment to mitigation by the proponent. However, the proponent's mitigation plan may need to be modified depending on the timing of other proposed developments in the area. MassHighway has been in discussions with the proponent of another project, the Plymouth Rock Studio, which may be located in the vicinity of the Route 3/Clark Road interchange. The proposed project and the Plymouth Rock Studio would most likely have an overlapping study area, impact some of the same locations, and require implementation of mitigation to address cumulative impacts. A change in the mitigation as proposed in the FEIR may be required if the Plymouth Rock Studio project begins the environmental review process prior to completion of the River Run permitting process. The proponent should consult with EOT regarding the roundabout design at the Long Pond Road/Clark Road intersection, which may need to be reconsidered to address capacity and traffic issues.

Two other projects in the area, the Pine Hills project and the Cedarville Commons project will impact intersections in the project area. As noted by EOT in its comment letter, the Pine Hills proponent is responsible for implementing improvements at the Route 3/Clark Road interchange and the Cedarville Commons proponent is responsible for similar mitigation at the Hedge Pond Road and Herring Pond Road intersections with State Road. The River Run FEIR includes a commitment to some improvements and design plans should the project proceed before the above projects. However, EOT believes that the existing infrastructure would not accommodate full build of the development without additional mitigation. The proponent should

work with MassHighway to identify the specific level of development that could occur prior to implementation of the infrastructure improvements.

Should additional infrastructure improvements be necessary to support the planned development schedule, the proponent should consult with the MEPA Office regarding any proposed changes in the transportation improvements plan to determine if a Notice of Project Change (NPC) will be required. I expect that the Executive Office of Housing and Economic Development (EOHED) will coordinate with MassHighway and incorporate appropriate conditions as part of any funding award to ensure adequate mitigation for transportation impacts, which should be reflected in the agency's Section 61 Findings. Based on its consultations with MassHighway regarding the timing of the proposed and other development, and mitigation requirements, the proponent should submit a revised draft Section 61 Findings to EOHED for its consideration during the project review and funding process.

Sustainable Design

The proponent obtained a grant from the Renewable Energy Trust in 2006, which was used to research the types of green building technologies that could be employed in affordable housing, and to prepare sample construction specifications. The study resulted in development of a comprehensive list of specific green applications for site planning and building design and construction. The proponent has committed to implement the majority of these. The design standards to be implemented include: low impact development (LID) measures for stormwater management; ecological landscaping; avoidance of wetlands areas; use of locally harvested, recycled and renewable building products; indoor air quality standards; and Energy Star for homes building standards.

The proponent received another Renewable Energy Trust grant in 2007 to erect a meteorological tower to evaluate wind resources in the area. The FEIR indicates that preliminary results are promising and if the results from the year-long data gathering effort provide positive results, the proponent intends to power the project's Wastewater Treatment Facility (WWTF) using a wind turbine. The proponent also intends to install solar technology at the WWTF to provide additional green power.

As noted above, the proponent is also exploring additional renewable energy opportunities, including opportunities for wind, solar and geothermal development on the site. I applaud the proponent for its efforts to incorporate green building and renewable energy generation into the project, and I offer the assistance of EEA and the Department of Energy Resources as the proponent continues to evaluate opportunities to meet the project's energy needs using wind, geothermal, and solar power.

Conclusion

Based on review of the FEIR and comments received, and consultations with relevant state agencies, I am satisfied that the FEIR adequately complies with MEPA and the project may proceed to the state permitting process. The proponent must provide additional information and analysis in its permit applications as outlined above. The proponent should consult with MEPA

regarding any project changes that may require a NPC. State agencies should forward copies of final Section 61 Findings to the MEPA Office for the project record.

October 3, 2008
DATE

Ian A. Bowles, Secretary

Comments Received

9/12/08	David Belluche
9/24/08	Oliver H. Durrell III
9/24/08	Division of Marine Fisheries
9/24/08	Cape Cod Cranberry Grower's Association
9/26/08	Town of Plymouth
9/26/08	Town of Plymouth, Board of Selectmen
9/26/08	The Coalition for Buzzards Bay
9/26/08	MassAudubon
9/26/08	The Nature Conservancy
9/26/08	Old Colony YMCA
9/26/08	Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program
9/26/08	Executive Office of Transportation
9/29/08	White Island Pond Conservation Alliance, Inc.
9/29/08	Cindy Outhouse
9/30/08	Plymouth Area Chamber of Commerce
9/30/08	Helen Hapgood
9/30/08	Department of Environmental Protection, Southeast Regional Office
9/30/08	Office of Coastal Zone Management

IAB/AE/ae