



CAPE COD COMMISSION

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Date: February 5, 2004

To: Patrick Butler, Esq.
Nutter, McClennen & Fish
1513 Iyanough Road
Hyannis, MA 02601

From: Cape Cod Commission

RE: Development of Regional Impact
Cape Cod Commission Act, Sections 12 & 13

Project: Woods Hole Oceanographic Institution
Campus Core Redevelopment Project

Project #: EX # 03018/ TR # 03018

Applicant: Woods Hole Oceanographic Institution
c/o Ament & Ament, Attorneys
P.O. Box 919, 39 Town Hall Square
Falmouth, MA 02541

Lot, Certificate of Title: Lot B, LC Plan 5348C – 44053; Lot A, LC Plan 13436A - 44053,
Lot shown on LC Plan 10087A – 44053; Lot A, LC Plan 53481 - 94908

Decision of the Cape Cod Commission

SUMMARY

The Cape Cod Commission (Commission) hereby approves with conditions the application of Woods Hole Oceanographic Institution (WHOI) as a Development of Regional Impact (DRI) pursuant to Sections 12 and 13 of the Cape Cod Commission Act (Act), c. 716 of the Acts of 1989, as amended, for the proposed WHOI Campus Core Redevelopment Project (the Project). The decision is rendered pursuant to a vote of the Commission on February 5, 2004.

Decision – WHOI Campus Core Redevelopment TR # 03018

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PROJECT DESCRIPTION

The Project site is the WHOI Quissett Campus, 360 Woods Hole Road, in Falmouth, MA. The property is approximately 124 acres, and is zoned as a Public Use District. About 30 acres of the property contains existing WHOI facilities, including laboratories, classrooms, residential units and administrative offices. WHOI is a non-profit educational and scientific research facility, specializing in marine and climate sciences.

The WHOI Campus Core Redevelopment Project consists of the construction of two new buildings: a 35,570 square foot (sf) Biogeochemistry Building (BGF), a 31,950 sf Marine Research Facility (MRF), a 12,170 sf addition to the McLean laboratory, and a 2,175 sf addition to the energy plant, for a total of 81,865 sf. In addition, the Project proposes approximately 24,800 sf of new parking lots on undeveloped area. Existing parking and walkways in the development area will be redesigned and revegetated, so that there will be a net reduction of 34 parking spaces overall. The Project also includes upgrading of drainage systems and a new wastewater treatment facility to replace the existing Title 5 systems currently servicing the existing buildings.

The new buildings and additions are intended to provide space for new laboratories and high-technology equipment, core-sample storage space, and to upgrade office space for the current scientific investigators located on the campus. Approximately 62 employees working at the Redfield Building in the Village of Woods Hole will be relocated to the Quissett Campus. No new employees will be placed in the Redfield Building.

PROCEDURAL HISTORY

The Project was referred to the Commission by the Falmouth Board of Health on December 17, 2003. The Commission received the referral on December 23, 2003. The Applicant filed DRI and DRI Exemption applications. A duly noticed public hearing was conducted by the Commission pursuant to Section 5 of the Act by an authorized subcommittee of the Commission on January 7, 2004 at the Gus Canty Recreation Center in Falmouth, MA. The DRI Exemption was continued to January 16, 2004, and the DRI hearing continued to January 22, 2004, and the record was left open for submission of written materials. The DRI Exemption hearing was closed by a hearing officer on January 16, 2004. On January 22, 2004 the Commission continued the DRI and DRI Exemption hearings to February 5, 2004.

The subcommittee held a public meeting to deliberate on this Project on January 15, 2004. At that meeting the subcommittee voted unanimously to recommend a DRI approval subject to conditions to the full Commission.

The subcommittee held a second public meeting on January 29, 2004, to discuss the draft decision. At that meeting the subcommittee voted to deny the DRI exemption request. The exemption request was withdrawn by the Applicant on February 2, 2004. The subcommittee voted to accept the withdrawal of the exemption request on February 5, 2004.

A final public hearing was held before the full Commission on February 5, 2004. At this hearing, the Commission voted unanimously to approve the Project as a DRI, subject to conditions.

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Materials submitted

From Applicant:

- Open Space Plan via fax – January 30, 2004
- Lighting Photometric Plans CR-L 5.3 dated January 29, 2004
- Fax from David Beecy to S. Michaud – January 29, 2004
- Fax from J. Keenan to A. Adams – January 26, 2004
- Fax from R. Johnson to H. McElroy – January 16, 2004
- Fax from E. Hargrave to A. Adams – January 22, 2004
- Email from Bond Bros. to A. Adams – January 22, 2004
- Fax from R. Johnson to T. Watt – January 15, 2004
- Email from R. Bryant to G. Cannon – January 15, 2004
- Lighting information from P. Butler – January 15, 2004
- Revised elevation from R. Johnson to T. Watt – January 14, 2004
- Elevation of line of site view of MRF building from Nantucket Sound – January 15, 2004
- Cut sheet for DRI approved lighting fixture - January 15, 2004
- Letter and supporting materials from R. Byrant to G. Cannon dated January 13, 2004
- Memo from P. Butler to M. Twombly dated January 13, 2004
- Fax with correspondence from D. Beecy to Scott Michaud – January 9, 2004
- Copy of powerpoint presentation by Dr. Robert Gagorian – January 7, 2004
- Revised Impact Matrix submitted by P. Butler at the hearing – January 7, 2004
- Memo and associated materials regarding WHOI property in W. Barnstable to H. McElroy from P. Butler – January 7, 2004
- Email from L. Cox, attorney for WHOI, regarding parking – January 7, 2004
- Letter and attachments in a binder from P. Butler to C. Frazer, Subcommittee Chair, dated December 29, 2003
- Fax dated December 29, 2003 from P. Butler to J. Lipman and M. Twombly
- Letter dated December 23, 2003 from P. Butler to Margo Fenn
- Letter dated December 17, 2003 from Laura Moynihan, including DRI referral from the Falmouth Health Department – December 23, 2003
- Memo from P. Butler to M. Twombly dated December 3, 2003 regarding employment numbers
- November 26, 2003 - Abutters list from Eliza Cox to M. Twombly
- Sanitary Groundwater Discharge permit application materials submitted by David Beecy of Holmes and McGrath on November 8, 2003.
- Industrial Groundwater Discharge permit application materials submitted by Paul Sinisgall of CDM – Transmittal Sheet dated Nov. 7, 2003
- Letter from P. Butler to M. Twombly dated October 21, 2003
- Memo from P. Butler to Glenn Cannon dated October 20, 2003
- Letter from Kerri-Anne Richard of GeoHydrocycle to Dave Beecy, Holmes & McGrath dated October 8, 2003
- Groundwater- and nitrogen-transport modeling results from GeoHydroCycle, Inc., dated October 8, 2003 and submitted by Holmes and McGrath
- Letter from P. Butler to M. Twombly containing DRI Exemption and DRI applications – October 14, 2003
- Memo from P. Butler to M. Twombly containing parking information, line of sight plan, color renderings of building elevations dated September 18, 2003
- Meeting notes from GeoHydroCycle dated September 17, 2003

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- Letter from P. Butler to M. Twombly dated July 10, 2003 with application fee
- Letter from P. Butler to Dorr Fox dated June 16, 2003 containing DRI Exemption application notebook with narratives, traffic data, nitrogen loading calculations, site plans and maps, etc. – June 18, 2003

From Town Officials:

- Letter from Brian Currie, Falmouth Town Planner – January 29, 2004
- Letter from Robert Whritenour, Town Administrator, to Susan Kadar dated December 3, 2003
- Letter from David Carignan dated December 17, 2003 with DRI referral from the Falmouth Health Department

From Cape Cod Commission:

- Memo from G. Cannon to Subcommittee – January 29, 2004
- Fax from M. Twombly to P. Butler – January 28, 2004
- Fax from S. Michaud to D. Beecy – January 15, 2004
- Memo from A. Adams – January 15, 2004
- Email from M. Twombly to L. Cox – January 6, 2004
- Email from S. Michaud to David Beecy dated January 5, 2004
- Memo from M. Twombly to Subcommittee dated December 31, 2003
- Memo from M. Twombly and Staff Report dated December 19, 2003, including DRI and DRI exemption application materials and correspondence

From Interested Parties:

- Email and letter from Oyster Pond Environmental Trust – January 21, 2004
- Email from R. Lovering to M. Twombly – January 20, 2004
- Fax letter and enclosures from P. Gatsby – January 7, 2004
- Copy of WHOI letter to abutters dated June 16, 2003, submitted by R. Lovering on January 6, 2004
- Letter dated January 4, 2004 from the Woods Hole Community Association to M. Twombly
- Email and attached letter from Richard Lovering to M. Twombly dated January 4, 2004
- Letter dated December 30, 2003 from L. Madin, Senior Scientist at WHOI, to M. Twombly
- Letter dated December 29, 2003 from John Hayes, Senior Scientist Dept. of Geology and Geophysics and Director of National Ocean Sciences Accelerator Mass Spectrometry Facility for WHOI, to M. Twombly
- Letter dated December 15, 2003 from Dr. Robert S. Detrick, Jr., Chair of Department of Geology and Geophysics, WHOI, to M. Twombly – December 16, 2003

The application and notices of public hearings relative thereto, the Commission staff's notes, exhibits and correspondence, the transcript and minutes of meetings and hearings and all written submissions received in the course of our proceedings are incorporated into the record by reference.

TESTIMONY

Public Hearing # 1 – January 7, 2004

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Mr. Carey Murphy, Chair, Falmouth Board of Selectmen, spoke on behalf of the Board of Selectmen in favor of the Exemption request.

Mr. Patrick Butler, attorney for WHOI, stated that he believed the impacts were not outside the Town of Falmouth, and in each issue area, there were actually improvements, and thus this Project met the criteria for an Exemption. Dr. Robert Gagosian, President of WHOI, described the needs for lab and office space in both the village and Quissett sites, and that WHOI wanted to grow in quality not quantity. He stated the institution did not intend to increase the number of students or staff levels.

Rick Bryant, Rizzo Associates, compared the CCC staff assessment of transportation impacts with the Applicant's traffic study, and concluded that he supported the WHOI assessment that buildings do not generate traffic, and that no increase in employees would mean that there would be no increase in trips as a result of the proposal.

M. Twombly stated that the staff report recommended against an exemption because of regional impacts to resources within and outside Falmouth. Leslie Richardson discussed economic impacts. Scott Michaud described issues regarding wastewater being disposed of within the Oyster Pond watershed. Glenn Cannon explained transportation impacts to Woods Hole Road, which is a regional roadway and stated that space does generate traffic without an increase in employees, citing meetings, visitors, deliveries, maintenance, etc. Heather McElroy stated that the Project does have regional impacts in that it affects SNRA, and said the open space requirement for the Project as a DRI would be less than 7.6 acres of protected space.

Alan Platt asked about the number of visiting scientists and noted an inconsistency regarding the term of potential future development of 15-20 years vs 10-15 years. Mr. Butler responded that beyond the possibility of an auditorium in the futures, there are no definitive plans for any other development.

Ms. Taylor asked about any influx of people at WHOI and the Marine Biological Laboratory (MBL) regarding housing. Mr. Butler stated it is an issue WHOI will address, but it is not relevant to the exemption request.

Mr. Doherty asked about housing, the greywater system, and about connecting abutters to the WWTF. Mr. McKeon said WHOI would investigate using greywater for irrigation of the grounds. Mr. Butler said that the WWTF was not designed to service more than WHOI operations.

Mr. Hogan expressed support of the institution, believed that 80,000 sf was too large a development to exempt, and that there were good arguments for regional impacts. He asked about future development and suggested that staff and WHOI discuss a limited DRI review. Ms. Taylor agreed with Mr. Hogan, and asked if they couldn't see a Master Plan. Mr. Butler declared that these buildings are the Master Plan.

John Waterbury, WHOI microbiologist asked the subcommittee to support an exemption.

John Stegemen, Chair of WHOI biology department, stated there are no plans to hire new staff, and therefore there would be no increase in traffic.

Mr. Butler said the Project might be ready for a limited DRI review and the Applicant would be willing to meet with staff for clarifications and discussions regarding mitigation and voluntary actions.

Ms. McElroy pointed out that the Exemption request is at the discretion of the Commission, and not an obligation. She stated that the Project is a DRI by definition, and the question is whether it is appropriate to grant an exemption. Mr. Michaud stated that he doesn't dispute the fact that the WWTF will reduce nitrogen loading, the only issue is where it will be disposed of.

Mr. Cannon stated the Commission has vastly different criteria than Mass Highway regarding impacts. He stated he would work with the Applicant and discuss mitigation for a DRI.

Mr. Zavala asked what was meant by "typical R & D" facility and about Mr. Cannon's statement that "space generates traffic". Mr. Cannon reiterated that space does generate traffic, through meetings, visitors, deliveries, etc., regardless of how many employees are present.

Mr. Platt urged the Applicant and staff to work together to resolve the open issues. Mr. Butler stated that a Development Agreement was not an option.

Mr. Zavala asked if exempting a Project this size would change a threshold. Mr. Fox answered that it wouldn't change a threshold.

JURISDICTION

The proposed WHOI Campus Core Redevelopment Project qualifies as a Development of Regional Impact (DRI) under Section 3(e) of the DRI Enabling Regulations governing review of Developments of Regional Impact, which requires review of "any development which proposes construction of gross floor area over 10,000 square feet".

FINDINGS

General Findings

G1. The proposed WHOI Campus Core Redevelopment Project consists of the construction of two new buildings: a 35,570 sf Biogeochemistry Building, a 31,950 sf Marine Research Facility, a 12,170 sf addition to the McLean laboratory, and a 2,175 sf addition to the energy plant, for a total of 81,865 sf. In addition, while the Project proposes approximately 24,800 sf of new parking lots, through redesign of site layout it will be reducing the number of parking spaces by 34 and revegetating approximately 1.5 acres. The property is presently the site of existing WHOI operations on the 124- acre Quissett Campus on Woods Hole Road in Falmouth, MA.

G2. As confirmed in a letter from the Falmouth Town Planner, the Project will require a building permit from the Falmouth Building Department, and a Disposal Works

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Construction Permit from the Falmouth Board of Health. The Project is consistent with the Falmouth Local Comprehensive Plan.

- G3.** The limited areas of impacts for this Project can be mitigated through a DRI review.

Transportation Findings

T1. Woods Hole Oceanographic Institution proposes to construct 81,865 sf of research laboratory and associated buildings at the existing WHOI Quissett Campus on Woods Hole Road in Falmouth. Woods Hole Road is a regional road as defined in the Regional Policy Plan (RPP). The Town of Falmouth does have an approved Local Comprehensive Plan (LCP). The Falmouth LCP does not designate any growth centers and therefore this Project is not located within a certified growth center.

T2. Trip generation of the proposed building was based on the following factors:

- As stated in the Transportation Impact Assessment by Bruce Campbell & Associates dated June 2003, the Applicant's traffic engineer performed a traffic count of the existing facility and then calculated the existing trip generation rate using two different independent variables: building size and employees. These trip generation rates were then applied to the Project using both independent variables (anticipated employees and building square footage). The difference between the trip generation estimates ranged from 32-morning peak hour trips based on employees to 84-morning peak hour trips based on square footage.
- Cape Cod Commission Technical Bulletin 96-003 revised January 9, 2003 recommends using square footage for trip generation calculations.
- The Applicant has stated that no new employees would be hired as a result of this Project. The employees would relocate from the existing Quissett and Woods Hole Campuses.
- The Institution of Transportation Engineer (ITE) Trip Generation manual indicates that the proposed buildings would generate 114-morning peak hour trips.
- The Applicant demonstrated that the nature of traffic generation at their research facilities is unique as described in a Transportation Impact Assessment letter by Rizzo Associates dated January 13, 2004. As an example, research at a computer software company can be very labor intensive, creating a high employee to square foot ratio, where research at the WHOI Quissett Campus is conducted by fewer employees, who require a significant amount of high-tech laboratory equipment and storage space, creating a low employee to square foot ratio.

Due to the difference in trip generation rates, the Applicants' promise of no new employees, and the unique nature of this facility, the subcommittee allowed the Applicant to present an alternative method for calculating the trip generation rate. This alternative methodology calculated trip generation based on the unusually low employee to square foot ratio for the proposed buildings. Based on the trip generation information submitted by the Applicant, the proposed buildings are expected to generate the following vehicle traffic.

| | |
|---------------------|-----------|
| Morning Peak Hour | 56 trips |
| Afternoon Peak Hour | 49 trips |
| Average Daily | 426 trips |

- T3.** MPS 4.1.1.1 *Development and redevelopment shall not degrade safety for pedestrians, bicyclists, or motor vehicle operators or passengers.* As stated in the Transportation Impact Assessment by Bruce Campbell & Associates dated June 2003, no hazardous intersections or hazardous conditions exist within the study area. Therefore, the Project complies with MPS 4.1.1.1.
- T4.** MPS 4.1.1.7 *Acceptable sight distances shall be met and maintained at all access and/or egress locations for development and redevelopment regardless of Project traffic volumes. At a minimum, these shall meet the stricter of the Massachusetts Highway Department and American Association of State Highway Transportation Officials' standards for safe-stopping sight distances.* The Applicant's traffic engineer determined that the existing driveways meet or exceed the minimum stopping sight distance.
- T5.** MPS 4.1.2.1 states in part *All development and redevelopment not located within Growth Incentive Zones shall implement adequate and acceptable measures to reduce and/or offset 25% of the expected increase in summer site traffic resulting from the development on a daily and project peak-hour basis.* The Applicant has proposed a trip reduction plan that includes the following in-kind strategies:
- Designate an employee to serve as the Transportation Coordinator who will be responsible for maintaining the TDM program. The coordinator will integrate new programs for this facility with ongoing programs in place at WHOI. WHOI has indicated that an employee position titled "Administrative Associate II, Shore Operations" will be the transportation coordinator. The transportation coordinator will be responsible for maintaining a database of employees interested in ridesharing. Ridesharing information will be posted at a location visible to employees including mention of www.gocapecod.org/tdm in published material.
 - Provide local shuttle bus service to the Village of Woods Hole and the Quissett campus every 20 minutes throughout the workday.
 - Bicycle racks are available at all main buildings. Shower facilities are available for all employees to support bicycle use. There are twelve racks with a total capacity of 124 bicycles.
 - A cafeteria is available in the Fenno Building for all employees. Lounge areas for food consumption are provided in both the BGC and MRF buildings.
 - Three vehicles are available for employee use to run errands throughout the day.

- WHOI provides telecommuting capabilities via a dial up connection on a Virtual Private Network (VPN). Between dial up service and VPN, there are 800 off-site network connections assigned to employees.
- WHOI allows all employees to work flexible hours.
- Twelve staff housing units are located on the Quissett Campus with pathways providing direct access to the campus.
- WHOI is working with the Cape Cod Regional Transit Authority to provide access to the Quissett campus. A bus shelter is proposed in the Clark parking lot.
- Designate parking spaces convenient to building entrances, which will be reserved for carpool or vanpool vehicles. Three percent (3%) of Quissett Campus parking spaces will be initially reserved for carpool/vanpool participants, and carpooling/vanpooling parking spaces may be increased if demand dictates.
- Establish an electronic bulletin board to aid in matching employees to carpools and vanpools.
- Provide a guaranteed ride home to users of alternative travel modes.
- Provide incentives for employees to rideshare or use alternative modes. Preferred parking spaces will be offered at such time as the buildings are occupied. A 15% discount at WHOI's foodservice for lunch purchases will be given to those bicycling, transit or carpooling participants. This not only offers an incentive to carpool, but also serves to reduce trips off campus at noontime.
- Maintain existing campus connections to the Shining Sea Bike Path.

T6. MPS 4.1.3.4 of the RPP states in part that *Developments of Regional Impact shall perform Level of Service analysis and provide for full mitigation of project impacts on all regional road links, at all intersections of regional roads.* The Applicant has agreed to a monetary contribution of \$19,785, based on a fair-share calculation of Project impacts. The fair-share monetary contribution is acceptable as mitigation for the congestion impacts caused by this Project.

T7. As stated in the Transportation Impact Assessment by Bruce Campbell & Associates dated June 2003, Level of Service at all intersections studied will remain constant under build conditions.

T8. According to Site Plans L1.0 and L1.1 by Holmes & McGrath, dated April 15, 2003, overall parking spaces will be reduced on site by 34.

Water Resource Findings

WR1. The Project is not located in an existing Wellhead Protection Area, nor is it located in a Potential Public Water Supply Area.

WR2. The Project is required to meet MPS 2.1.1.1 which limits Project nitrogen loading to 5 ppm. The Applicant has submitted nitrogen-loading calculations to the Commission and the Project meets this standard.

WR3. MPS 2.1.2.1 requires that *Private treatment facilities may be constructed only if there are no public treatment facility options available....* The Town of Falmouth has cited technical difficulties associated with accepting campus *sanitary* wastewater through the Town's centralized wastewater collection system. The Project will provide for collection of *sanitary* wastewater from all Quissett Campus facilities, except the Bell House, and treatment at an on-site wastewater treatment facility.

WR4. ODRP 2.1.1.10 states that *Development and redevelopment should attain greater groundwater or surface water protection than provided for in the Minimum Performance Standards.*

The Project generates *industrial* (process and cooling) wastewater that will be permitted for a 38,000 gallons-per-day (gpd) design flow under a Groundwater Discharge Permit (GWDP) issued by the Massachusetts Department of Environmental Protection's (MADEP) Industrial Wastewater Program. This constitutes an increase from 31,940 gpd of actual past flows, 12,960 gpd of which will now be recycled. Submitted laboratory analyses indicate that the Project's industrial wastewater contains very low nitrogen concentrations. As a result, the increase in industrial wastewater generation and discharge to groundwater is not expected to have a significant impact on groundwater quality.

Sanitary wastewater is currently managed on-site using Title-5 septic systems and cesspools. Technical Bulletin 91-001 assigns a total-nitrogen concentration of 35 ppm to sanitary wastewater effluent from standard title-5 septic systems. *Sanitary* wastewater treatment and disposal will be permitted for a design flow of 32,500 gallons per day (gpd) under a Groundwater Discharge Permit issued by MADEP Bureau of Resource Protection (BRP). This design flow is calculated as twice actual past flows from existing facilities (2 x 12,646 gpd), plus design flows for new facilities (5,063 gpd), plus 2,145 gpd of extra capacity. Ground Water Discharge Permits typically require treatment of *sanitary* wastewater to a 10-ppm nitrogen concentration prior to discharge to groundwater. This level of treatment will provide a net decrease in nitrogen loading to groundwater flowing beneath campus parcels and constitutes a benefit of the project.

WR5. In accordance with MPS 2.1.2.2, the Project's wastewater-treatment facility is required to achieve a maximum total-nitrogen concentration of 5 ppm in either wastewater effluent or groundwater at the downgradient property boundary.

WR6. The Project is partially located in the Oyster Pond Marine Water Recharge Area (MWRA), a marine embayment regulated under MPS 2.1.1.2.C. Most Project construction will occur in areas outside of this MWRA. The array of new soil absorption

systems (SAS) to be used for discharge of both sanitary and industrial wastewater straddles the Oyster Pond MWRA boundary. The Applicant submitted a final revised SAS design dated January 12, 2004 that repositions the sanitary SAS outside the Oyster Pond MWRA. The adjacent SAS proposed for disposal of industrial wastewater remains inside the MWRA.

The Oyster Pond MWRA includes a watershed area for a small coastal pond that does not have surface-water tributaries or outlets to Vineyard Sound that would otherwise facilitate tidal flushing of the pond. As such, the potential for nutrient exchange between the small coastal pond and other parts of the Oyster Pond complex is unlikely. According to RPP Water Resources Classification Map II, this small coastal pond is the receiving surface-water body for groundwater flowing beneath the SAS proposed for the discharge of industrial wastewater.

The Massachusetts Estuaries Project will develop a critical nitrogen load for Oyster Pond in 2004-2005. Although documented water-quality problems exist for tidally flushed portions of Oyster Pond complex, water-quality information is not available for the small coastal pond referenced above. Therefore, the RPP does not prohibit an increase in the nitrogen load to the Oyster Pond MWRA (MPS 2.1.1.2.C.2).

The Applicant has agreed to contribute \$25,000 for a hydrogeologic investigation and groundwater monitoring for purposes of characterizing the existing wastewater plume emanating from cesspools/leachpits at the baseball field, and to document anticipated improvement in groundwater quality downgradient of the proposed Soil Absorption System to be located at the baseball field and to replace those cesspools/leachpits. This monetary contribution constitutes a benefit of the project.

In accordance with MPS 2.1.1.2.C.1, the Project *may be required to make a monetary contribution toward the development or implementation of appropriate nitrogen-management strategies.* The project is *“required to make a monetary contribution to determine the flushing rate of the embayment in order to calculate the critical nitrogen loading rate.* The flushing rate of Oyster Pond will be determined under the Massachusetts Estuaries Project. The Applicant has agreed to contribute \$4,800 toward the development or implementation of appropriate nitrogen-management strategies for the Oyster Pond MWRA.

WR7. Plans submitted for stormwater management (Plans L.4.0 – L4.4 dated April 15, 2003) and Storm Management Report dated May 19, 2003 are consistent with provisions of MPS 2.1.3. As such, the Project is required to:

- avoid direct discharge of untreated stormwater runoff surface waters and wetlands;
- discharge stormwater on site after providing maximum water-quality treatment based on 25-year 24-hour storm intensity and removal of 80% of total suspended solids;
- use best-management practices consistent with MADEP Stormwater Policy Guidelines;
- maintain a maximum two-foot separation between maximum high water table and points of infiltration; and

- submit a stormwater maintenance and operation plan, and in accordance with MPS 2.1.3.6.

Natural Resource Findings

- NR1** According to the natural resources inventory, none of the present development proposal is located in proximity to wetlands or vernal pools.
- NR2.** While some of the proposed development sites include areas of relatively good habitat value, most of the development sites, including the Biogeochemistry building and McLean additions, are adjacent to or include existing developed areas, consistent with MPS 2.4.1.2 which requires minimizing clearing and grading.
- NR3.** The 1.63 acres of the project area presently mapped as SNRA due to the presence of unfragmented forest, is now fragmented from the remaining unfragmented forest on the site through the Commission's exemption of the ring road project (EX # 20078) in 2001, and the road's subsequent construction.
- NR4.** Land that is proposed for open space protection is high quality unfragmented open space in SNRA, much of which protects critical upland habitat for vernal pool species, and may be considered higher quality habitat than the areas of the site to be disturbed for construction. In addition, the applicant proposes to revegetate 8.17 acres on the project site, 4.35 acres of which was previously disturbed area.
- NR5.** The open space requirement is based on the total area of development on the project site, or 10.76 acres. Based on the unique characteristics of this project on the Quissett Campus, and the effects of the Commission's prior DRI Exemption decision on the project site, the open space requirement for this project is based on the 1:1 ratio in MPS 2.5.1.3, and is 10.76 acres.

The applicant has proposed to permanently protect 10.76 acres located between the WHOI parking lot on the west side of the campus and the residences along Woods Hole Road to and including the boundary of the vernal pool located within that area as shown on the plan prepared by Stephen Stimson Associates and received by fax on February 3, 2004. The applicant proposes that The 300 Committee (Falmouth's land trust) hold a conservation restriction on this land.

Economic Development Findings

- ED1.** Goal 3.1 of the RPP *encourages businesses that are compatible with Cape Cod's environmental, cultural, and economic strengths in order to ensure balanced economic development.* The work of the Woods Hole Oceanographic Institution, a not-for-profit marine research and education facility, is consistent with the first economic development goal of the Regional Policy Plan "to encourage businesses that are compatible with Cape Cod's environmental, cultural, and economic strengths."

To the extent that the proposed campus expansion adds to the continued success of WHOI, this Project may be expected to have the following benefits to the Cape Cod economy:

- Continued employment of Cape Cod residents:
 - 75% of employees live in Falmouth; 25% live in the region
 - Full-time jobs: 800 on average annually
 - Wages: Employees earn on average livable or high wages (annual salary range: \$17,550 - \$123,210)
 - Benefits: Health, dental, and retirement benefits provided to full-time employees
- Continued regional economic activity in a high-value knowledge based sector related to one of the region's traditional resource-based sectors
- Continued and expanded use of regional contractors and suppliers during and after the construction phase of the Project

ED2. Goal 3.2 focuses on *locating development to preserve the Cape's environment and cultural heritage, minimize adverse impacts, and enhance the quality of life*. The proposed expansion of the WHOI Quissett Campus is consistent with the second economic development goal of the RPP concerning Project location. While the Project will not focus development in an existing village/commercial area, as encouraged by the RPP, it upgrades existing facilities at the Quissett campus and relieves crowding in Woods Hole offices by shifting 62 employees from Woods Hole Village to the Quissett campus.

ED3. Goal 3.3 encourages *the creation and diversification of year-round employment opportunities*. The proposed campus expansion will not create or add to the diversity of year-around employment opportunities in the region, as stipulated in RPP Goal 3.3, but, according to the Applicant, will help WHOI to maintain current employment levels and, by providing state-of-the-art equipment and lab space, continue to attract and retain top scientists, technicians, and students. The majority of positions at WHOI are high-wage, high-skill jobs in areas recognized as desirable in the RPP.

ED4. The Project proposes to meet or exceed Massachusetts State Building Codes, utilize green building methods, incorporate energy efficiency systems, appliances and lighting in the building design and specifications, and provide measures to insure the maintenance of air quality. These initiatives may be seen as a benefit of the Project.

Hazardous Materials/Wastes Findings

HM1. According to site plans and maps for the 2002 RPP, the site is not located within an existing or future Wellhead Protection District/Zone II.

HM2. MPS 4.3.1.1, 4.3.1.2 and 4.3.1.4 apply to both the construction and post-construction phases of this Project. They require that development and redevelopment shall make efforts to minimize their hazardous material use and/or waste generation, be in

compliance with Massachusetts Hazardous Waste Regulations, and prepare an emergency response plan.

- HM3.** According to the application materials, and information on WHOI's website, the Institution currently uses an unknown amount of hazardous materials, primarily acids, bases and organics in quantities less than one gallon. WHOI is registered with the Department of Environmental Protection as a Small Quantity Generator of hazardous waste, generating approximately 1,300 pounds per month. It also generates Universal Wastes (fluorescent bulbs, cathode ray tubes and batteries). The application also states "the Project will not result in any net increase in hazardous materials used or stored within the property." WHOI's Chemical Hygiene Plan reinforces the concepts of source reduction and minimization. The application also states the proposed Projects will allow WHOI to upgrade its existing energy plant. According to William McKeon, Director of Shore Services the existing energy plant is fueled by natural gas, and it will continue to use gas after the proposed expansion.
- HM4.** On January 14, 2004, the Applicant submitted copies of WHOI's Chemical Hygiene and Hazard Communications Plans. These Plans indicate the Institution has procedures in place to minimize its hazardous materials use and hazardous waste generation, and to comply with the Hazardous Waste Regulations. The Hazard Communications Plan describes in detail how to address emergencies encountered on the Quissett campus.
- HM5.** With respect to hazardous materials/waste management from construction activities, a company called Bond Brothers will be the construction management company. Information submitted during the Project review was sufficient to determine that the Project was consistent with Section 4.3 of RPP for the construction phase.

Heritage Preservation/ Community Character Findings:

- CC1.** The Project is located within the "ring road" of the existing WHOI Campus. The site contains mature undisturbed trees, many of which have a 12" dbh (diameter breast height) or greater and a height of 45' or more.
- CC2.** The Project has the potential to allow regional views of the proposed MRF and BCG buildings from Nantucket Sound and the beach to the south. As such, the canopy of the existing mature trees is of regional importance to reduce such views. Grading or tree removal within this area may damage the health of the trees and result in insufficient screening.
- CC3.** Elevation drawing L3.5 demonstrates that Fye Lab (ridge line 117') exceeds the height of the MRF building (top of building 101') and that the tree canopy rises to 130' elevation.

Elevation drawing L3.3 demonstrates that a 130' elevation of the canopy of existing vegetation will shield the proposed BGC building (top of penthouse 131').

- CC4.** In order to ensure screening to protect regional views, the Applicant proposes to protect all trees within the Tree Protection area as indicated on Tree Protection & Utilities Plan (SK-CCC1 revised) submitted on January 15, 2004.
- CC5.** Constructed as approved per the Tree Protection Plan, the Project will not be visible from Nantucket Sound.
- CC6.** MPS 6.2.10 of the 2002 RPP states that *exterior lighting in new development or redevelopment shall comply with standards including design, light source, total light cutoff, and foot-candle levels defined in the Exterior Lighting Design Standards, Technical Bulletin 95-001.* The application information states that *site lighting* will consist of 12-foot lights along the primary foot paths, 3-4 foot tall bollards along less-heavily used footpaths, and taller pole lights for new parking areas. Based on information submitted, the proposed bollard lights will conform to Technical Bulletin 95-001 (as amended). The parking lot pole lights will conform to Technical Bulletin 95-001 Standards 2.1 to 2.5 so long as they do not exceed 20 feet in total height.
- CC7.** On January 12, 2004, the Applicant agreed to use a replacement fixture for one originally selected for the 12-foot pole mount lights. The replacement fixture, a BEGA 8081MH using a 175-watt metal halide lamp, is consistent with Technical Bulletin 95-001 Standards 2.1 to 2.5.
- CC8.** Based on additional application materials received by the Commission on January 15, 2004, several different exterior lights are to be used on the buildings. All but one, a HYDREL light shown in January 14, 2004 information from the Applicant, and proposed to illuminate the East and West entries of the Biogeochemistry Research Lab building, are consistent with Technical Bulletin 95-001 (as amended). The HYDREL light, as an in-grade luminaire, is an uplight and is prohibited by Technical Bulletin Standard 2.2. According to the Applicant's building architects, an alternate method of illumination will be provided at the Lab's East and West entries in such a way as to eliminate the HYDREL light, but in a manner consistent with Technical Bulletin 95-001 (as amended).
- CC9.** The application materials include a foot-candle plan showing the maintained condition of lights other than those to be used on buildings. Based on this information, the lights to be used on pedestrian paths and to illuminate the parking area are consistent with Technical Bulletin Standard 2.6. However, these foot-candle plans do not include lights to be used on buildings, so it was not possible to determine during the Project review whether the on-building lights were consistent with Technical Bulletin Standard 2.6.
- CC10.** The Project proposal is located outside of significant cultural areas on the property.

CONCLUSION

Based on the findings above, the Cape Cod Commission hereby concludes:

1. The benefits of the proposed Project based on Findings WR4, WR5, NR1, ED1, ED3 and ED4 as conditioned, outweigh the detriments outlined in Findings T2 and NR2 resulting from the development.
2. The Project is consistent with the Falmouth Local Comprehensive Plan.
3. The Project is in compliance with local development bylaws.
4. The Project is consistent with the Minimum Performance Standards of the Regional Policy Plan as described in the findings above.
5. The proposed Project is not within a District of Critical Planning Concern (DCPC).

The Commission hereby approves with conditions the application of Woods Hole Oceanographic Institution for the proposed Quissett Campus Core Development as a Development of Regional Impact, provided the following conditions are met:

CONDITIONS

General

- G1.** This DRI decision is valid for 7 years and local development permits may be issued pursuant hereto for a period of 7 years from the date of the written decision.
- G2.** Failure to comply with all conditions stated herein, and with all related statutes and other applicable regulatory measures, shall be deemed cause to revoke or modify this decision upon appropriate notice to the Applicant and an opportunity to be heard.
- G3.** The Applicant shall obtain necessary and applicable state and local permits for the proposed Project.
- G4.** Prior to issuance of a building permit for any phase of proposed construction, the Applicant shall submit final plans as approved by local boards for review by Commission staff to determine their consistency with this decision and/or information submitted as part of the DRI review. If the final plans approved by local boards are inconsistent with this decision and/or supporting information, then they shall be reviewed subject to Section 7 of the Cape Cod Commission Administrative Regulations, Modifications to Approved DRIs, dated 5/30/02 and as amended from time to time.
- G5.** Prior to issuance of a building permit for any phase of construction, the Applicant shall obtain a preliminary Certificate of Compliance from the Commission which states that all conditions in this decision pertaining to issuance of a building permit for such phase have been met.
- G6.** Until the issuance of a Final Certificate of Compliance, the Applicant shall provide the Commission with an annual progress report to be submitted on or before the anniversary

of the date of this decision. The annual progress report shall describe the status of local development permitting and Project construction, including the expected date of commencement of site preparation work. The Applicant shall report changes to the annual progress report.

- G7.** The proposed WHOI Campus Core Redevelopment Project shall be constructed in accordance with the following final plans by Holmes and McGrath, Inc. dated April 15, 2003: Site Plan L1.0, Site Plan L1.1, Proposed parking and Open Space L3.1, Grading Index Plan L4.0, Grading Plans L4.1 to L4.4, Lighting Layout L5.0, Lighting Photometrics L5.1 to 5.3, site lighting CR-L5.3 to CR-L5.6 dated January 15, 2004, Planting Index Plan 6.0, Planting Plan 6.1 to 6.4, Sign Location Plans S1.0, and Layout Plan C-4 dated June 2003.
- G8.** The applicant shall notify Commission staff of the intent to seek a Certificate of Compliance at least thirty (30) days prior to the anticipated date of occupancy. Such notification shall include a list of key contact(s) for questions that may arise during the Commission’s compliance review. Commission staff shall complete an inspection under this condition within seven (7) business days of such notification and inform the Applicant in writing of any deficiencies and corrections needed. The Applicant understands that the Commission has no obligation to issue a Certificate of Compliance unless all conditions are complied with or secured consistent with this decision. The Applicant agrees to allow Cape Cod Commission staff to enter onto the property, which is the subject of this decision for the purpose of determining whether the conditions contained in the decision are met upon reasonable prior notice and at reasonable times.
- G9.** The Applicant shall be responsible for providing proof of recording of the decision prior to issuance of a Final Certificate of Compliance.
- G10.** The Applicant shall demonstrate that a copy of this decision has been provided to the general contractor prior to the start of construction.

Transportation Conditions

- T1.** Prior to the Final Certificate of Compliance, the Applicant shall implement the following trip reduction plan:
- Designate an employee to serve as the Transportation Coordinator for the campus who will be responsible for maintaining the TDM program. The coordinator will integrate new programs for this facility with ongoing programs in place at WHOI. WHOI has indicated that an employee position titled “Administrative Associate II, Shore Operations” will be the transportation coordinator. The transportation coordinator will be responsible for maintaining a database of employees interested in ridesharing. Ridesharing information will be posted at a location visible to employees including mention of www.gocapecod.org/tdm in published material.
 - Provide local shuttle bus service to the Village of Woods Hole and the Woods Hole campus every 20 minutes throughout the workday.

- Bicycle racks are available at all main buildings. Shower facilities are available for all employees to support bicycle use. There are twelve racks with a total capacity of 124 bicycles.
- A cafeteria is available in the Fenno Building for all employees. Lounge areas for food consumption are provided in both the BGC and MRF buildings.
- Three vehicles are available for employee use to run errands throughout the day.
- WHOI provides telecommuting capabilities via a dial up connection or a Virtual Private Network (VPN). Between dial up service and VPN, there are 800 off-site network connections assigned to employees.
- WHOI allows all employees to work flexible hours.
- Twelve staff housing units are located on the Quissett Campus with pathways providing direct access to the campus.
- WHOI is working with the Cape Cod Regional Transit Authority to provide access to the campus. A bus shelter is proposed in the Clark parking lot.
- Designate parking spaces convenient to building entrances, which will be reserved for carpool or vanpool vehicles. Three percent (3%) of Quissett Campus parking spaces will be initially reserved for carpool/vanpool participants, and carpooling/vanpooling parking spaces may be increased if demand dictates.
- Establish an electronic bulletin board to aid in matching employees to carpools and vanpools.
- Provide a guaranteed ride home to users of alternative travel modes.
- Provide incentives for employees to rideshare or use alternative modes. Preferred parking spaces will be offered at such time as the buildings are occupied. A 15% discount at WHOI's foodservice for lunch purchases will be given to those bicycling, transit or carpooling participants. This not only offers an incentive to carpool, but also serves to reduce trips off campus at noontime.
- Maintain existing campus connections to the Shining Sea Bike Path.

T2. Prior to receiving a Preliminary Certificate of Compliance, the Applicant shall make a monetary commitment of \$19,785 to comply with MPS 4.1.3.4. These funds shall be held by the County of Barnstable and will be expended upon the recommendation of the Cape Cod Commission Executive Director to support the planning, design or implementation of transportation improvements. Any funds remaining after 10 years shall be turned over to the Cape Cod Regional Transit Authority or similar transportation agency for public transportation within the town of Falmouth.

Decision – WHOI Campus Core Redevelopment TR # 03018

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Water Resource Conditions

- WR1.** Prior to issuance of a Preliminary Certificate of Compliance the project will contribute \$4,800.00 toward the development or implementation of appropriate nitrogen-management strategies in accordance with MPS 2.1.1.2.C.1. These funds shall be held by the County of Barnstable and will be expended upon the recommendation of the Cape Cod Commission Executive Director to be used by an entity working in the Oyster Pond Watershed in Falmouth, at the discretion of, and with the approval of the Executive Director of the Commission.
- WR2.** Prior to issuance of the Preliminary Certificate of Compliance, the Project shall submit to the Commission all GWDP application materials submitted to MADEP, including materials reflecting changes to SAS locations referenced in Finding WR6. Prior to the Final Certificate of Compliance the Applicant shall submit a copies of all approved GWDP materials from MADEP.
- WR3.** Prior to the Preliminary Certificate of Compliance the Applicant shall make a monetary commitment of \$25,000 to be held by the County of Barnstable to be expended upon the recommendation of the Cape Cod Commission Executive Director to execute a hydrogeologic investigation and conduct groundwater monitoring for purposes of characterizing the existing wastewater plume emanating from cesspools/leachpits at the WHOI baseball field and to document anticipated improvement in groundwater quality downgradient of the proposed SAS. Upon completion of the monitoring, if all of the \$25,000 is not expended for these purposes, any remaining funds shall be given to an entity working in the Oyster Pond Watershed in Falmouth, approved by the Commission, to be used toward the development or implementation of appropriate nitrogen-management strategies.
- WR4.** The Project shall achieve a maximum total-nitrogen concentration of 5 ppm in groundwater at the downgradient property boundary, as required by MPS 2.1.2.2. Water samples shall be collected quarterly from a monitoring well, the location and specifications of which shall be approved by Commission staff and as referenced in Finding WR5.
- WR5.** Prior to issuance of the Preliminary Certificate of Compliance a maintenance and operations plan, in accordance with MPS 2.1.3.6, for stormwater infrastructure shall be submitted to the Commission for review and approval of the plan by Staff. The Project shall also:
- discharge stormwater on site in accordance with Project plans (Grading Plans L4.0 – L4.4 dated April 15, 2003) after providing maximum water-quality treatment based on 25-year 24-hour storm intensity and removal of 80% of total suspended solids;
 - use best-management practices consistent with MADEP Stormwater Policy Guidelines; and
 - maintain a maximum two-foot separation between maximum high water table and points of infiltration.

WR6. Prior to a Preliminary Certificate of Compliance the Applicant shall submit revised plans regarding the SAS design dated January 14, 2004.

Natural Resources Conditions

NR1. Prior to the Preliminary Certificate of Compliance, WHOI shall provide the Cape Cod Commission with a conservation restriction consistent with Massachusetts General Laws Chapter 184, § 31 – 33 and accompanying plan to be approved by Commission counsel which provides that 10.76 acres located between the WHOI main parking area and residences along Woods Hole Road, and identified as open space on a plan prepared by Steven Stimson & Associates and received via fax on February 3, 2004, shall be preserved as permanent open space.

NR2. The conservation restriction and site plan shall be executed and recorded and proof of recording at the Registry of Deeds or Registry District of the Land Court shall be provided to the Commission prior to the Final Certificate of Compliance. In order to preserve the significant habitat values of the open space areas protected through this conservation restriction, the land subject to this conservation restriction shall remain undisturbed for conservation and wildlife habitat preservation purposes.

NR3. Conservation restrictions required by this decision shall be held by The 300 Committee, or other conservation entity as approved by Commission staff, for conservation purposes.

Hazardous Materials/Wastes Conditions

HM1. One year from the date of the final and last local Certificate of Use and Occupancy (if there is more than one), the Applicant shall submit a report to the Commission detailing the Quissett campus' status as a generator of hazardous wastes, including but not limited to Universal Wastes. The report shall also provide evidence that the Project approved as a result of this decision has not resulted in any net increase in hazardous materials used or stored within or on the property.

HM2. To be consistent with MPS 4.3.1.1 and 4.3.1.4, during site preparation and construction phases of this Project, on-site servicing of construction equipment shall be limited to greasing of fittings and joints. On-site engine repairs and similar "heavy" maintenance shall be prohibited. On-site storage of fuel for construction equipment and machinery shall be conducted on an impervious surface with containment and access control. To be consistent with MPS 4.3.1.2, any hazardous waste generated during site preparation and/or construction shall be managed in accordance with the Massachusetts Hazardous Waste Regulations, 310 CMR 30.000.

HM3. To be consistent with MPS 4.3.1.2, the Quissett campus, once constructed and occupied, shall operate in a manner consistent with the Massachusetts Hazardous Waste Management Regulations, 310 CMR 30.000.

HM4. To be consistent with MPS 4.3.1.1, the energy plant proposed as part of the Quissett campus Project shall be fueled by natural gas.

Community Character Conditions:

- CC1.** The Applicant shall construct the Project in accordance with the approved site and landscape plans (Site Plans L1.0 and L1.1, Grading Plans L4.1 to L4.4, Planting Index Plan 6.0 and Planting Plans 6.1 to 6.4 by Holmes & McGrath, dated April 15, 2003).
- CC2.** Prior to issuance of a Preliminary Certificate of Compliance, the Applicant shall flag the outline of the MRF building and the utility line farthest from the building (the LPS utility line, according to the utility plans) and install a readily visible protective barrier at the limit-of-work line approved on Plant Protection & Utilities @ MRF plan SK-CCC1 revised, dated January 15, 2004. Grade changes, tree disturbance and removal shall not occur within the tree protection limit so identified. Staff shall inspect and approve the limit-of-work barrier prior to issuance of a Preliminary Certificate of Compliance and prior to any site work.
- CC3.** All site and landscape work shall be completed prior to issuance of a Final Certificate of Compliance. If all required exterior lighting, site work, and/or other landscape improvements are not complete at the time a Final Certificate of Compliance is sought from the Commission, any work which is incomplete shall be subject to an escrow agreement of form and content satisfactory to Commission counsel. The amount of the escrow agreement shall equal 150% of that portion of the incomplete work, including labor and materials, with the amount approved by Commission staff. The escrow agreement shall be payable to Barnstable County with the work approved by Commission staff prior to release of the escrow funds. Unexpended escrow funds shall be returned to the Applicant, with interest, upon completion of the required work.
- CC4.** All exterior lighting fixtures used or installed as part of this Project shall be consistent with MPS 6.2.10 and the requirements and standards of Technical Bulletin 95-001 (as amended).
- CC5.** Prior to issuance of a Final Certificate of Compliance by the Commission, the Applicant shall submit a foot-candle plan showing the maintained condition of all on-building mounted fixtures. This plan and plans showing *site lighting* (CR-L5.3 to CR-L5.6 dated January 15, 2004) shall be used in connection with Condition CC6, below, and shall conform to the standards and information submission requirements of Technical Bulletin 95-001 (as amended).
- CC6.** Prior to issuance of a Final Certificate of Compliance from the Commission, in-the-field verification of light levels shall be conducted by Commission staff to verify conformance with the requirements of this decision, Technical Bulletin 95-001 (as amended) and MPS 6.2.10. Should unexpected conditions arise during construction that require redesign or adjustments to the Project's exterior lighting fixtures, including substitutions of fixture heads, the Applicant shall obtain approval from Cape Cod Commission staff prior to the use or installation of such fixtures consistent with the Commission's regulations governing *Revisions to Approved DRIs*. Modifications made during construction that are

in accordance with Technical Bulletin 95-001 (as amended) may be considered as Minor Modifications #1 and may be approved by Commission staff.

The Cape Cod Commission hereby approves with conditions the application of Woods Hole Oceanographic Institution as a Development of Regional Impact pursuant to Sections 12 and 13 of the Act, c. 716 of the Acts of 1989, as amended for the proposed WHOI Campus Core Redevelopment Project located in Falmouth, MA.

David Ansel, Chair

Date

Commonwealth of Massachusetts

Barnstable, ss.

On this _____ day of _____, 2004, before me personally appeared _____, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that _____ executed the same as her free act and deed.

Notary Public, Commonwealth of Massachusetts
My Commission expires: