Epsilon
ASSOCIATES INC.

Projects2/#58000/Belmont/40B/SupplementalInformation

May 24, 2006

Mr. Jay Szklut
Planning and Economic Development Manager
Town of Belmont
Zoning Board of Appeals
19 Moore Street
Belmont, MA 02478

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Subject: The Residences at Acorn Park Chapter 40B Application; Supplemental Information and Responses to Environmental Questions.

Dear Mr. Szklut:

Epsilon Associates, Inc. (Epsilon) is pleased to provide the Zoning Board of Appeals (ZBA) with the following supplemental information in response to a letter prepared by the ZBA's consultant, Mr. Marshall Dennis of Wetlands and Wildlife, Inc. (Wetlands and Wildlife), on April 24, 2006. Additional information can also be found in Sections 6 and 8 of the December 9, 2005 Chapter 40B permit application. It should be noted that since the filing of the Project's 40B application, the site plans have been modified to include the addition of an emergency access road behind the proposed buildings, as required by the Belmont Fire Department (BFD)[1]. A stormwater management basin has been reconfigured to accommodate this request. Project plans and calculations reflect these modifications, and the revised plans will be provided to the ZBA under separate cover by Rizzo Associates, Inc.

Recommendations made in the Wetlands and Wildlife letter appear in bold below, and Epsilon's responses follow:

1. **It is recommended that the Applicant prepare a comprehensive inspection and maintenance plan relative to soil erosion/sediment controls and Stormwater Pollution Prevention Plan (SWPPP) implementation, and that the plan be provided to the ZBA and all appropriate municipal departments for review and comment. Further, it is recommended that this plan be incorporated into the**

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[1] See correspondence from Belmont Fire Department Captain John A. Pizzi to the Zoning Board of Appeals dated February 2, 2006.

Notice of Intent application to be filed with the Belmont Conservation Commission (BCC).

Response 1: This information was included on Sheet C-4 of the plan set included with the 40B application, a copy of which was forwarded to Fay, Spofford & Thorndike (FST), who reviewed the site planning and civil engineering elements of the application, but which was inadvertently not forwarded to Wetlands and Wildlife (see Notes 1 through 23 on Sheet C-4). FST found the erosion and sedimentation controls to be reasonable, and noted that when the Stormwater Pollution Prevention Plan (SWPPP) is prepared it should include the requested information (see Item 17 on page 6 of FST's April 27, 2006 letter). The selected site contractor (i.e., the operator) and property owner will be required to comply with these plans and will have to certify compliance with the U.S. Environmental Protection Agency's Construction General Permit and SWPPP.[2] Responses to FST's comments on the Erosion Control Plan (see Items 18-20 on page 7 of the April 27, 2006 letter) will be provided separately by Rizzo Associates, Inc.

2. **To address the outstanding issue regarding the incremental provision of compensatory flood storage, it is recommended that the Applicant supplement the *Comprehensive Permit Application* by preparing and providing a new/revised table to the Zoning Board of Appeals and all appropriate municipal department for review and comment. This table should clearly list, by incremental one-foot elevations, the existing cubic feet of flood storage to be displaced and the proposed cubic feet of compensatory flood storage to be created. It is recommended that this information also be incorporated into the Notice of Intent to be filed with the BCC.**

Response 2: It is our understanding that Wetlands and Wildlife was provided only Section 8 of the 40B application for its review. The requested information was provided in Table 12 of Section 6 of the 40B application and is re-printed below. The calculations outlined in this table will be updated to reflect the site layout

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[2] The U.S. Environmental Protection Agency (USEPA) has issued a Construction General Permit (CGP) for stormwater discharges associated with construction activities under the National Pollutant Discharge Elimination System (NPDES) program. The CGP authorizes stormwater discharges from large and small construction activities that result in a total land disturbance equal to or greater than once acre, where those discharges enter surface waters of the United States or a municipal separate storm sewer system leading to surface waters of the United States. Compliance with the CGP is achieved by (1) completing, certifying and submitting to the USEPA a two-page Notice of Intent form, (2) developing and implementing a SWPPP, and (3) complying with the requirements and standard conditions contained in the CGP.

changes associated with the emergency access road required by the BFD. This information will be provided to the ZBA under separate cover by Rizzo Associates, Inc. As required by the Massachusetts Wetlands Protection Act (MGL c.131 §.40) and implementing regulations (310 CMR 10.57(4)(a)(1)), the proposed compensatory flood storage will be incrementally equal to the theoretical volume of flood water at each elevation up to and including the 100-year flood elevation, which would be displaced by the proposed Project.

Table 12 – 100 Year Floodplain Compensatory Storage Analysis

Increment/Elevation	Impacts to the Existing 100 Year Floodplain (cf)	Proposed Compensatory Flood Storage (cf)
5.0	**0**	**0**
6.0	**1,559**	**1,693**
7.0	**5,675**	**6,282**
8.0	**12,676**	**14,214**
9.0	**23,938**	**27,526**
9.8	**36,809**	**42,274**
TOTAL	**36,809**	**42,274**

3. **Section 8.5.2 of the *Comprehensive Permit Application* indicates that the "compensatory flood storage area, as well as the proposed detention basin, will be further enhanced with wet meadow species" that will provide food, cover and breeding/nesting sites for wildlife. To ensure the establishment and growth of these plantings and the wildlife habitat they will provide, it is recommended that the Applicant prepare a detailed compensation site preparation plan, planting plan and monitoring/maintenance plan for each flood storage area to be created, and that this information be provided to the ZBA and all appropriate municipal departments for review and comment it is recommended that referenced be made to the U.S. Army Corps of Engineers (COE) *Regulatory Guidance Letter No. 02-2* (December 24, 2002); COE *Mitigation Checklist and Guidance* (June 15, 2004); and *Massachusetts Inland Wetland Replication Guidelines Manual* (MADEP, March 2002). It is recommended that this plan be incorporated into the Notice of Intent to be filed with the BCC.**

Response 3: Wetlands and Wildlife correctly notes in its comment letter that the Project does not exceed the review thresholds for impacts to wildlife habitat and that activities proposed in Riverfront Area and Bordering Land Subject to Flooding

(BLSF) comply with the applicable Wetlands Protection Act general performance standards pertaining to the interest of wildlife habitat (see 310 CMR 10.57(4)(a)(3) and 10.58(4)(d)). Accordingly, the Project is afforded a regulatory presumption that proposed activities will not impair important wildlife habitat in these resource areas; to the extent such habitat even exists in the impact locations (see Section 8.4 of the 40B application for additional detail). A wildlife habitat evaluation is also not required for projects with alterations below the specific thresholds listed in the Wetlands Protection Act regulations.[3] Notwithstanding, in the interest of enhancing wildlife habitat within the proposed compensatory flood storage areas, the Applicant has proposed a comprehensive planting plan using plant species that have food value in seed, root, and stem. These plants also provide physical cover for wildlife (for example, for nesting and escape) and structure to the basins to promote enhanced water quality. As requested by Wetlands and Wildlife, additional detail on these areas is provided in Attachment A of this correspondence. This attachment will be accompanied by a revised planting/landscaping plan provided to the ZBA under separate cover by Rizzo Associates that will depict the location, size and quantities of proposed plantings within the compensatory flood storage areas.

In addition, the Applicant has committed to place a conservation restriction (CR) on nearly 7.8 acres of the 15.6-acre Project site. Nearly half of the land, which will be protected by the CR, is developable upland area. The CR ensures permanent preservation of that land and protection from the threat of development. Further, the Applicant has worked with the Town of Belmont to develop a habitat enhancement plan for the land protected under the CR. This plan lays out principles for habitat enhancement that will guide management of the land, including measures for controlling invasive species. The town and the Applicant have also developed a conceptual trail plan for this land. The trail plan includes standards for construction and maintenance of trails and a discussion of potential opportunities to link this site's trails to trails in the Department of Conservation and Recreation trail system. The habitat enhancement plan, trail

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[3] When promulgating the Wetlands Protection Act regulations, the Department of Environmental Protection (DEP) created project size thresholds for certain resource areas below which alterations are not deemed to have an adverse effect on the protection of *important* [emphasis added] wildlife habitat functions (i.e., those areas, which due to their plant community composition and structure, hydrologic regime or other characteristics, provide important food, shelter, migratory or overwintering areas, or breeding areas for wildlife). The Department found "that use of thresholds is the most scientifically valid and least complex method of protecting important wildlife habitat in these resource areas" (*see Preface to Wetland Regulations Relative to the Protection of Wildlife Habitat* and *Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands* (DEP, March 2006).

plan, and a diagram showing a conceptual layout of the area protected under the CR may be found in Open Space Plan on the town's web site (http://town.belmont.ma.us/committees/planning/OpenSpacePlanREV5-17-02.pdf).

4. **It is recommended that the Applicant provide for review an alternatives analysis for impacts to Riverfront Area as required by the Massachusetts Wetlands Protection Act regulations (310 CMR 10.58). It is further recommended that this alternatives analysis be incorporated into the Notice of Intent to be filed with the BCC.**

Response 4: Approximately 1,400 s.f.[4] (or ~4.6%) of Riverfront Area on the Project site[5] will be impacted by construction of the proposed emergency access road that is required by the BFD. To accommodate this request and construct the emergency access road around the perimeter of the site, a stormwater management basin was relocated out of the Riverfront Area. This design modification resulted in a significant reduction of Riverfront Area impacts from a previous total of approximately 2,500 s.f. (or ~8.1%) to the current total of approximately 1,400 s.f. The Project has been designed in accordance with the general performance standards for Riverfront Area identified at 310 CMR 10.58(4)(a through d) as follows:

- *310 CMR 10.58(4)(a) – Protection of Other Resource Areas:* Proposed work meets the performance standards for all other resource areas within the Riverfront Area (i.e., BLSF, BVW, Bank) [See Section Table 1 in Section 8.3 of the 40B application];

- *310 CMR 10.58(4)(b) – Protection of Rare Species:* The Project will not have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, as identified by the procedures established under 310 CMR 10.59 nor will the Project have any adverse effect on any potential or certified vernal pool habitat. [See Section 8.2.1.4 of the 40B application];

- *310 CMR 10.58(4)(c) – Practicable and Substantially Equivalent Economic Alternatives:* There is no practicable and substantially equivalent economic alternative to the proposed Project with less adverse effects on the interests identified in the Wetlands Protection Act. Riverfront Area

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[4] This number may be further refined as final plans are prepared by Rizzo Associates.

[5] As noted on Table 1 in Section 8.3 of the 40B application, total Riverfront Area on the Project site is approximately 30,000 s.f.

impacts have been avoided to the maximum extent practicable; in fact, approximately 95% of the Project is not located in the Riverfront Area. All of the proposed buildings, parking areas and stormwater management system components are located entirely outside the limits of the Riverfront Area. Where unavoidable impacts associated with the proposed emergency access road are proposed, impacts will be minimized and mitigated through the use of a geogrid system proposed for this limited section of roadway. The geoblock material will be capable of sustaining the load of an emergency vehicle while providing a certain degree of groundwater recharge. Refer to Attachment B of this correspondence for additional detail regarding this performance standard.

- *310 CMR 10.58(4)(d) – No Significant Adverse Impact:* In accordance with 310 CMR 10.03(1)(2), activities proposed within Riverfront Area will contribute to the protection of the interests identified in the Wetlands Protection Act by complying with the Riverfront Area general performance standards. Examples include: a) at a minimum, a 100 foot wide area of undisturbed vegetation is provided and Riverfront Area impacts have been minimized to less than 5,000 s.f. and less than 10% of the Project site, b) stormwater is managed according to standards established by DEP in its Stormwater Policy, c) proposed work does not impair the capacity of the Riverfront Area to provide important wildlife habitat functions or vernal pool habitat (see Response 3 above and Response 5 below), d) by incorporating erosion and sedimentation controls and other measures to attenuate non-point source pollution proposed work will not impair groundwater or surface water quality, and e) the preferred alternative provides nearly 7.8 acres of protected open space and trails and much-needed affordable housing for the town of Belmont.

5. **It is recommended that the Applicant conduct site-specific data collection activities sufficient to confirm the presence/absence of obligate and facultative vernal pool species and, thus, the vernal pool status of the "potential vernal pools" referenced in the application. It is further recommended that this information be provided to the ZBA and all appropriate municipal departments for review and comment, and that the results of these investigations be incorporated into the Notice of Intent to be filed with the BCC.**

Response 5: Vernal pool habitat is defined by the Massachusetts Wetlands Protection Act regulations (310 CMR 10.04) as "confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, *to the extent that such habitat is within an Area Subject to*

Protection Under MGL c.131 §.40 ..." [emphasis added]. Hence, vernal pool habitat – that is, the vernal pool and the 100 foot zone around a vernal pool – must be located within a resource area before it receives protection. Vernal pool habitat does not extend into non-jurisdictional upland areas or in the buffer zone of a resource area.[6]

As noted in the 40B application and acknowledged by Wetlands and Wildlife, there are no mapped certified vernal pools on the subject parcel. However, NHESP 2005 GIS mapping identifies two "potential" vernal pools located beyond the limits of the project work area. Based on field observations by Epsilon, the first area located adjacent to and east of Acorn Park Drive, does not appear to have vernal pool characteristics. As pointed out by Wetlands and Wildlife, it serves primarily as a point source discharge for Route 2 drainage and is surrounded by unsuitable habitat (i.e. developed lands and areas dominated by common reed (*Phragmites australis*), an invasive, non-native species). Notwithstanding, this potential vernal pool will be protected in perpetuity via the proposed Conservation Restriction.

The second potential vernal pool is located to the northwest on property owned by the Department of Conservation and Recreation (DCR). Whether the DCR pool provides vernal pool habitat per 310 CMR 10.57(2)(a)(6) and 310 CMR 10.60 is a moot-point because a) no activity is proposed within 100 feet of this potential vernal pool (in fact, the potential vernal pool is located more than 250 feet from the proposed development; see Figure 4 in Section 8 of the 40B application); b) the potential vernal pool is located within the Alewife Brook Reservation, owned by the Department of Conservation and Recreation, and is therefore protected by the State; c) the Project complies with the general performance standards for BLSF and Riverfront Area and is therefore afforded a regulatory presumption that activities occurring in these resource areas will not impair vernal pool habitat to the extent such habitat even exists; and d) no new untreated stormwater discharges are proposed in this location. Therefore, the Applicant does not concur with Wetland and Wildlife's recommendation that a site specific investigation of this potential vernal pool is warranted, because the Project has been designed in compliance with the Wetlands Protection Act general performance standards for the protection of vernal pool habitat regardless of the pool's viability or certification.

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[6] See *Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands* (DEP, March 2006).

6. **As noted above, a wildlife habitat evaluation is not required per the Massachusetts Wetlands Protection Act and implementing regulations. Notwithstanding, it is recommended that in the event the project is approved by the ZBA, the habitat enhancement measures referenced in the *Open Space Maintenance Plan* be required as a special condition in the Comprehensive Permit.**

   Response 6: Epsilon concurs that a wildlife habitat evaluation is not required by the Wetlands Protection Act regulations because the Project does not exceed the review thresholds for impacts to wildlife habitat for any of these above mentioned wetland resource areas. Notwithstanding, in accordance with 310 CMR 10.60, project scientists previously collected field data to sufficiently describe existing habitat features, plant communities, and animal species likely to use such areas. This information was most recently reviewed and accepted by the Massachusetts Department of Environmental Protection when they issued the Superseding Order of Conditions approving the office/lab building project and by the proponent when preparing the *Belmont Uplands Site – Open Space Maintenance Plan*, approved at Town Meeting in April 2003. We further concur with Wetland and Wildlife's recommendation that the habitat enhancement measures referenced in the *Open Space and Maintenance Plan* should be required as a special condition in the Comprehensive Permit.

We look forward to discussing these matters with the ZBA and its consultants at the May 31, 2006, public hearing. In the interim, if you have any questions regarding this supplemental information please do not hesitate to contact me at (978) 461-6247 or via email at mhoward@epsilonassociates.com.

Sincerely,
EPSILON ASSOCIATES, INC.

Michael D. Howard, PWS, CWS
Manager, Ecological Sciences

Encl.
CC: Mr. Marshall Dennis, Wetlands and Wildlife, Inc.
Mr. Steve Corridan, AP Cambridge Partners II, LLC
Mr. Bob Engler, Esq., Stockard, Engler & Brigham, LLC
Mr. Jim Ward, Esq., Nutter, McClennen & Fish, LLP
Ms. Laura Rome, Epsilon Associates, Inc.
Ms. Amy Green, Amy Green Environmental Consulting, Inc.

Attachment A

Compensatory Flood Storage Enhancement Planting Plan

The Residences at Acorn Park

Compensatory Flood Storage

Enhancement Planting Plan

Prepared for:

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700 South Henderson Road
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May 24, 2006

Epsilon
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1.0 COMPENSATORY FLOOD STORAGE ENHANCEMENT PLANTING PLAN

1.1 Introduction

The proposed Residences at Acorn Park project will be constructing a retention basin, three detention basins ("Basins") and three compensatory flood storage areas ("CFSA") at the periphery of the development area. The intent of these features is to control and treat stormwater runoff and/or replace lost flood storage area as required by the Massachusetts Wetlands Protection Act regulations. In addition, the Applicant is proposing to design these areas to provide wildlife habitat to the extent practicable. These features will serve as buffers between the site development and the undeveloped portion of the site. A grass filter strip will also be constructed between the development and the CFSA. Planting details will be incorporated onto a revised Landscape Plan (Sheet C-6) provided under separate cover by Rizzo Associates.

The retention basin, which will be located between buildings B and D, is very small and has a steep slope associated with it. CFSA 3 will be part of the geogrid block emergency access road. As such, given their location and design, the retention basin and CFSA 3 are not considered to be providing additional wildlife habitat.

Although these areas are not proposed as wetland creation areas, it is likely that at least portions of them will develop wetland characteristics, particularly the lower portions of the Basins. As such, the *Massachusetts Inland Wetland Replication Guidelines* (Massachusetts Department of Environmental Protection, 2002) were used as a general guide in developing this plan.

This concept is described below. It should be noted that the final details of the planting plan and monitoring requirements will be reviewed by the Belmont Conservation Commission through its review of the Notice of Intent application.

1.2 Planting Plan

In general, the goal of the planting plan is to provide a number of environmental benefits by using native, non-invasive plant species. To maximize the habitat value, the selection and placement of these plant species has been carefully evaluated. Factors considered included the ability of the species to provide food and cover in a variety of seasons, a variety of growth forms to provide a diversity of habitat, ability to establish and spread quickly, aesthetics, and diversity. The CFSAs and Basins will be enhanced with herbaceous species that have food value in seed, root, and stem. The planting program will provide valuable habitat for songbirds, waterfowl, and small mammals. These plants also provide physical cover for wildlife (nesting and escape) and structure to the basins to promote enhanced water quality.

1.3 Compensatory Flood Storage Areas

The CFSAs will be seeded with a combination of New England Erosion Control/Restoration Seed Mix and New England Conservation/Wildlife Mix (or equivalent). These seed mixes are available from New England Wetlands Plants, Inc, in Amherst, Massachusetts. These mixes include species that will grow in wet and dry conditions so that the seed diversity can react to the varying moisture regimes. The mixes also include species that will grow and spread rapidly and that provide wildlife habitat value. The diversity of grasses, forbs, wildflowers, legumes, sedges, and rushes provides excellent wildlife benefit. The components of the seed mixes are listed below.

New England Erosion Control/Restoration Mix for Moist Sites

Switchgrass (Panicum virgatum)
Creeping Red Fescue (Festuca rubra)
Creeping Bentgrass (Agrostis stolonifera)
Nodding Bur-marigold (Bidens cernua)
Sensitive Fern (Onoclea sensibilis)
Joe-Pye Weed (Eupatorium maculatum)
Flat-top Aster (Aster umbellatus)
Grass-leaved Goldenrod (Solidago graminifolia)
Virginia Wild Rye (Elymus virginicus)
Fox Sedge (Carex vulpinoidea)
Silky Wild Rye (Elymus villosus)
Soft Rush (Juncus effusus)
Blue Vervain (Verbena hastata)
Boneset (Eupatorium perfoliatum)
New York Aster (Aster novi-belgii)

New England Conservation/Wildlife Mix

Big Bluestem (Andropogon gerardii)
Little Bluestem (Schizachyrium scoparium)
Fox Sedge (Carex vulpinoidea)
Fringed Bromegrass (Bromus ciliatus)
Common Milkweed (Asclepias syriaca)
Showy Tick-Trefoil (Desmodium canadense)
Pennsylvania Smartweed (Polygonum pensylvanicum)
Switchgrass (Panicum virgatum)
Canada Wild Rye (Elymus canadensis)
Partridge Pea (Chamaecrista fasciculata)
Flat-top Aster (Aster umbellatus)
Nodding Bur-marigold (Bidens cernua)
Silky Smooth Aster (Aster laevis)

Open areas, which will be dominated by the grasses, wildflowers and forbs listed above, will be interspersed with shrub and tree groupings. W oody plant species have been selected to provide diversity not only in type but also in structure (low versus tall height; open versus dense structure; deciduous versus coniferous foliage). The edge between the CFSAs and the site development will also be planted with species to provide screening and additional habitat. This mosaic provides a degree of edge, which is of particular value to songbirds. Within the CFSAs, the trees and shrubs will be placed in mixed groups for a more natural appearance and to maximize habitat diversity. Species were selected for their recognized habitat values. As an example, seasonal considerations were used in plant species selection, such as springtime (shadbush and red maple) and wintertime (black cherry, gray dogwood, oaks, and eastern red cedar) food supplies and winter cover provided by evergreen species (spruce, pine, inkberry, eastern red cedar and bayberry) and densely growing species (gray dogwood, shadbush and eastern red cedar). Specific species include:

Pin Oak (*Quercus palustris*) and Red Oak (*Quercus rubra*). Oaks in general have a high wildlife value. Acorns provide an abundant source of food for a variety of wildlife species. The trees also provide good cover and nesting sites. The leaves, which may often be retained through the winter, provide additional cover even though the tree is not evergreen. The lower, drooping branches typical of pin oaks provide additional cover. the pin oak is also generally a hardy tree and is faster growing than the other oaks.

White Spruce (*Picea glauca*). Spruces generally rank well in terms of importance to wildlife. Songbirds, in particular, eat the seeds which can be available year-round. Its branches can reach to the ground, providing winter cover. Spruce can provide a good buffer from human activities.

Red Pine (*Pinus resinosa*). Pines generally rank very high in terms of importance to wildlife. There is an extensive list of game bird and songbird species for which pine seeds constitute a large portion of their diet. Squirrels, chipmunks and other rodents also use the pine cones as food. The trees themselves also provide excellent cover. Pine needles are frequently used as nesting material.

Black Willow (*Salix nigra*). Willows, given their generally dense leaf pattern, provide excellent wildlife cover. The buds and catkins, as well as the bark and twigs, provide a food source for game birds and browsing mammals. Early budding provides a spring food source. Willows also grow rapidly, making re-establishment of wildlife habitat areas quicker.

Boxelder (*Acer negundo*). Maple seeds, buds and flowers provide a food source for many wildlife species. The boxelder generally produces a consistent seed crop every year, and its persistent seeds provide a winter food source. The tree grows rapidly and can have a bushy appearance, providing good cover.

Red Maple (*Acer rubrum*). Red maples provide a food source for a variety of wildlife species. The seeds, flowers and buds are all used as a food source. Sapling trees provide good cover and nesting sites, especially for smaller songbirds. Mammals may browse on the twigs and foliage, as well as the seeds and flowers.

Black Cherry (*Prunus serotina*). The black cherry's early ripening fruits are eaten by many birds, and this species is among the most important wildlife food plants. Small mammals eat the cherries that fall to the ground or that the birds drop.

Shadbush (*Amelanchier canadensis*). Shadbush berries, which appear in June, provide an important early summer food source for a variety of songbirds and small mammals. The species grows quickly, spreads readily, and provides dense cover and good nesting sites. The early blooms also provide an aesthetic element.

Inkberry (*Ilex glabra*). Inkberry provides an evergreen component. The dense leaves provide cover year-round. The berries can persist through winter and into spring, serving as an important food source.

Eastern Red Cedar (*Juniperus virginiana*). Eastern red cedar will provide dense, immediate, evergreen cover. The fruits provide food to songbirds and small mammals. The fruits often last well into the winter. The dense foliage provides good nesting and roosting sites throughout the year.

Northern Bayberry (*Myrica pennsylvanica*). The waxy coated fruits of bayberry are eaten by many birds in small quantities. It is somewhat evergreen, retaining its leaves late into the season.

Gray Dogwood (*Cornus racemosa*). Gray dogwoods form thickets to provide very good cover for nesting, feeding or resting. As with other dogwoods, this species is considered extremely valuable for wildlife. The seed, fruit, buds, flowers, twigs, bark and leaves are used as food by various animals. The fruits ripen late in the summer, and are available in the fall and often remain through the winter. In addition to the fruit, the twigs and foliage are eaten by small mammals. This species is known for producing moderate to heavy seed crops annually.

Winterberry (*Ilex verticillata*). The fruit of this species is eaten by various small mammals and more than 48 species of birds. It generally does not form large stands and, as such, does not have a high value for cover. The red berries are attractive in winter.

Elderberry (*Sambucus canadensis*). The twigs, foliage and fruit of this species provide an excellent food source. It grows and spreads quickly, offering escape cover and nesting sites. Its large fruit clusters can be very attractive.

Arrowwood (*Viburnum dentatum*). Viburnums provide food source in the drupes they produce, as well as the buds and twigs. The fruits often persist through the winter. The general dense growth form also provides good cover.

1.4 Detention/Retention Basins

The sides of the Basins will be seeded with New England Erosion Control Mix, as described above. The bottom, wetter, portion of the Basins will be planted with the New England WetMix, as described below.

New England WetMix

Fox Sedge (Carex vulpinoidea)	Bearded Sedge (Carex comosa)
Lurid Sedge (Carex lurida)	Soft Rush (Juncus effusus)
Boneset (Eupatorium perfoliatum)	Hop Sedge (Carex lupulina)
Blue Vervain (Verbena hastata)	Nodding Sedge (Carex gynandra)
Green Bulrush (Scirpus atrovirens)	Sensitive Fern (Onoclea sensibilis)
Blue Flag Iris (Iris versicolor)	Woolgrass (Scirpus cyperinus)
Joe Pye weed (Eupatorium maculatum)	Swamp Milkweed (Asclepias incarnata)
Monkey Flower (Mimulus ringens)	Nodding Bur Marigold (Bidens cernua)
Flat-top Aster (Aster umbellatus)	Grass-leaved Goldenrod (Euthamia graminifolia)

Soft-Stem Bulrush (Shoenoplectus tabernaemontani) (ex- S. validus)

Hardstem Bulrush (Schoenoplectus acutus) (ex-Scirpus acutus)

Refer to the revised planting plan (Sheet C6) to be prepared by Rizzo Associates for the location, size, and quantities of woody species proposed along the embankments of the Basins. An access way to the Basins will be maintained free of woody vegetation for maintenance activities.

1.5 Grass Filter Strip

A grass filter strip will be constructed between the development and CFSA-1. The purpose of this strip is to provide water quality treatment. This strip will be planted with native shrubs, groundcover and perennials. Proposed species will be listed on the revised planting plan prepared by Rizzo Associates (Sheet C-6). Thi s strip will also include very low growing shrubs and vines such as compact inkberry (Ilex glabra 'compacta'), bearberry (Arctostaphylos uva-ursi) and stomecrop (Sedum spectabile 'Autumn Joy'). These species will add additional diversity, food source and cover.

2.0 SOILS AND HYDROLOGY

2.1 Soils

Soils for the Basins and CFSAs will be brought into the site. The presence of invasive species on the site, and likely in the seed bank in the soil, make the site soils undesirable. After the areas have been constructed to subgrades, loam will be brought in and placed to a depth of not less than six inches. Care will be taken during placement that the soils are not compacted. Should compaction occur the soils will be loosened by a method such as rototilling.

2.2 Hydrology

The Basins and CFSA areas are being designed to hold a certain volume of water based on specific storm events. As the goal is not to maintain a given hydrologic regime for wetland creation or to intersect groundwater, the hydrologic regime will likely fluctuate in response to storm events. As such, the plant species lists include species that have a wide range of moisture tolerance, most particularly in the seed mix. It should be noted, however, that the CFSAs are being created to mimic the same elevations as the impacted areas.

3.0 MONITORING

The Basins, CSFAs and grass strip enhancement plantings will be monitored during the first two full growing seasons following their construction. The Belmont Conservation Commission will be provided with monitoring reports describing the physical characteristics of the enhancement plantings with respect to survival of plant vegetation and plant mortality, aerial extent, and distribution. Observations will be made twice during the growing season – in late spring/early summer and again in late summer/early fall. For monitoring purposes, a growing season starts no later than May 31. A total of four monitoring reports will be submitted to the Conservation Commission over a two-year period before the Applicant requests a Certificate of Compliance for the Project.

While the Project does not require or propose wetland replication areas (see 310 CMR 10.55), the monitoring report narrative will generally be prepared in accordance with the data sheet provided as Appendix 4 in the Department of Environmental Protection's *Massachusetts Inland Wetland Replication Guidelines Manual* (MADEP, March 2002). This data sheet will be supplemented with the following information:

- A summary of problems that need immediate attention (e.g., problem with erosion, major losses from herbivory).
- Dates work on which the enhancement planting work began and ended.
- A description of monitoring inspections that have occurred since the last report.

- Relevant soils data.
- A concise description of remedial actions during the monitoring year to meet the goals of the Project – actions such as removing debris, replanting, or regarding.
- Status of erosion control measures.
- Visual estimates of vegetative cover.
- A description of wildlife using the site and the purposes for which it is used (e.g., nesting, feeding, shelter).
- A description of the general health and vigor of the surviving plants (by species planted), including a prognosis for their future survival and a diagnosis of the cause(s) of morbidity and mortality, where applicable.

Attachment B

Riverfront Area Alternatives Analysis

Attachment B
Riverfront Area Alternatives Analysis for The Residences at Acorn Park

Project History

AP Cambridge Partners II, LLC (the Applicant) owns the 15.6 acre subject property. When the Property was initially purchased in 2000 it was zoned "Alewife General Residence," which allowed for residential development of duplex units on 7,000 s.f. lots. At the outset, the Applicant was approached by several Belmont officials who suggested changing the zoning to Commercial Office/Lab in an attempt to diversify their tax base. In response to this input from Belmont combined with the strong office/lab market in Cambridge at the time, the Applicant agreed to pursue an office/lab development and proceeded with the process to modify the zoning to allow this new use. Shortly thereafter the Town of Belmont placed a twelve-month building moratorium on developing the Property while it investigated the highest and best use for the Property. The Town of Belmont was not able to complete its planning tasks supporting the moratorium during the initial term, so it extended the moratorium by another six months, further delaying and frustrating the Applicant's ability to pursue any development, either commercial or residential, on the property.

After 18 months of studies and countless meetings with a wide variety of public and private interested parties the Town of Belmont concluded once again that after "open space" the highest and best use was a commercial office/lab building. Upon this affirmation of the original position, the Applicant proceeded with the rezoning process necessary to permit development of an office/lab building on the property. To accomplish this, the Applicant had to work through another year of meetings with the Board of Selectmen, numerous Town board meetings, neighborhood meetings and two Town Meetings before finally modifying the zoning to allow the development of an office/lab building, which it did in 2002. However, during this extended period of delays, the office/lab market had deteriorated to a point where financing of an office/lab development on the property was not practicable. The market, which boasted a 1 percent vacancy when the Applicant purchased the property, was now recording vacancies in the Cambridge/Alewife submarket of over 30% and rents had dropped by more than 40%.

Nevertheless, in April 2003, the Applicant submitted a Notice of Intent application to the Belmont Conservation Commission to begin the process of developing the office/lab building permitted under the new zoning (Belmont Uplands District). Even though the market continued to deteriorate, the Applicant actively searched for both office/lab and commercial tenants in an attempt to pre-lease enough of the building to make it commercially feasible. In response to the Notice of Intent, the Belmont Conservation Commission issued an Order of Conditions denying the Project and, ultimately, appealed the Superseding Order of Conditions that was issued by the Massachusetts Department of Environmental Protection (MADEP) approving the Project. All totaled, the appeals prevented the Applicant from obtaining the Final Superseding Order of Conditions from the MADEP (again, approving the Project) and pursuing other approvals for 688 days.

Even after resolving the Order of Conditions, to commence the office/lab development the Applicant needed to apply for, and receive, Site Plan Approval from the Belmont Planning Board as required under the Belmont Uplands District. [It was also highly likely that any approvals obtained from the Planning Board would have been appealed by one of the citizen's groups opposed to any development on the Property, given that group's strategy in its opposition to the development of McLean Hospital]. At that point, the commercial office/lab project had been tainted by the delays caused by Belmont which, combined with the negative change in the office/lab market and the well publicized ability of private Belmont citizens causing multi-year delays at McLean Hospital, made continuing with the office/lab development economically impossible and applying for the Site Plan Approval unwarranted.

As such, the Applicant began pursuing the affordable housing project it originally contemplated developing prior to Belmont's original overtures to rezone the property to permit office/lab use. According to the latest Department of Housing and Community Development (DHCD) Subsidized Housing Inventory (August 2005), the town of Belmont has 2.7% of its housing stock defined as affordable, well below the threshold requirements established under Chapter 40B of MGL.

Riverfront Area Analysis and Compliance with General Performance Standards

Figure 1 in Section 8 of the 40B application depicts the proposed Project in relation to the 200 foot Riverfront Area that is associated with the Little River. Approximately 1,400 s.f.[1] (or approximately 4.6%) of Riverfront Area on the Project site[2] will be impacted by construction of the proposed emergency access road that is required by the Belmont Fire Department. To satisfy this requirement and construct the emergency access road around the perimeter of the site, a stormwater management basin was relocated out of the Riverfront Area. This design modification resulted in a reduction of Riverfront Area impacts from a previous total of approximately 2,500 s.f. (or approximately 8.1%) to the current total of approximately 1,400 s.f.

Activities proposed in undeveloped Riverfront Area are required to demonstrate compliance with the general performance standards outlined in the Wetlands Protection Act (MGL c.131 §.40) and regulations as follows (see 310 CMR 10.58(4)(a through d):

- *310 CMR 10.58(4)(a) – Protection of Other Resource Areas:* Proposed work meets the performance standards for all other resource areas within the Riverfront Area (i.e., BLSF, BVW, Bank). [See Section Table 1 in Section 8.3 of the 40B application];

- *310 CMR 10.58(4)(b) – Protection of Rare Species:* The Project will not have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, as identified by the procedures established under 310 CMR

[1] This number may be further refined as final plans are prepared by Rizzo Associates.

[2] As noted on Table 1 in Section 8.3 of the 40B application, total Riverfront Area on the Project site is approximately 30,000 s.f.

10.59 nor will the Project have any adverse effect on any potential or certified vernal pool habitat. [See Section 8.2.1.4 of the 40B application];

- *310 CMR 10.58(4)(c) – Practicable and Substantially Equivalent Economic Alternatives:* There is no practicable and substantially equivalent economic alternative to the proposed Project with less adverse effects on the interests identified in the Wetlands Protection Act (see discussion below). Eliminating the proposed emergency access fire road from the Riverfront Area would conflict with 527 CMR 10.03(10) and would potentially create a public safety issue (see February 2, 2006 letter from Belmont Fire Captain John Pizzi). Riverfront Area impacts have been avoided to the maximum extent practicable; in fact, approximately 95% of the Project is not located in the Riverfront Area. All of the proposed buildings, parking areas and stormwater management system components are located entirely outside the limits of the Riverfront Area. Where unavoidable impacts associated with the proposed emergency access road are proposed, impacts will be minimized and mitigated through the use of a geoblock material proposed for this limited section of roadway. The geoblock material will be capable of sustaining the load of an emergency vehicle while providing a certain degree of groundwater recharge.

- *310 CMR 10.58(4)(d) – No Significant Adverse Impact:* In accordance with 310 CMR 10.03(1)(2), activities proposed within Riverfront Area will contribute to the protection of the interests identified in the Wetlands Protection Act and will have no significant adverse impact by complying with the Riverfront Area general performance standards. Examples include: 1) at a minimum, a 100 foot wide area of undisturbed vegetation is provided and Riverfront Area impacts have been minimized to less than 5,000 s.f. and less than 10% of the Project site, 2) stormwater is managed according to standards established by the MADEP in its Stormwater Policy, 3) proposed work does not impair the capacity of the Riverfront Area to provide important wildlife habitat functions or vernal pool habitat, 4) by incorporating erosion and sedimentation controls and other measures to attenuate non-point source pollution proposed work will not impair groundwater or surface water quality, and 5) the preferred alternative provides nearly 7.8 acres of protected open space and trails and much-needed affordable housing for the town of Belmont.

Wetlands and Wildlife in its comment letter to the ZBA concurred with the Project's conclusions that the general performance standards outlined at 310 CMR 10.58(4)(a,b and d) have been complied with. Wetlands and Wildlife requested additional information regarding the Project's compliance with 310 CMR 10.58(4)(c). This additional information is provided below.

Practicable and Substantially Equivalent Economic Alternatives (310 CMR 10.58(4)(c))

The regulations require that there must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in the Wetlands Protection Act. A practicable and substantially equivalent economic alternative is defined in the statute as *an available and feasible alternative which will accomplish the project's purpose, taking into account costs, logistics, the proposed use and technology.* According to 310 CMR 10.58(4)(c)(3), *the purpose of evaluating project*

alternatives is to locate activities so that impacts to the Riverfront Area are avoided to the extent practicable. Projects within the scope of alternatives must be evaluated to determine whether any are practicable. As much of a project as feasible shall be sited outside the Riverfront Area. If siting of a project entirely outside the Riverfront Area is not practicable, the alternatives shall be evaluated to locate the project as far as possible from the river ... if there would be no less adverse effects on the interests identified in MGL c.131 §.40, the proposed project rather than a practicable alternative shall be allowed, but the criteria in 310 CMR 10.58(4)(d) for determining no significant adverse impact must still be met.

According to 310 CMR 10.58(4)(c)(2), *the scope of alternatives under consideration shall be commensurate with the type and size of the project.* In this instance, the area under consideration for practicable alternatives is limited to the lot presently owned by the Applicant because it was recorded on a subdivision plan of land in 1989 (see 310 CMR 10.58(4)(c)(2)(b)(iii)) and the Applicant will implement the project purpose. It is important to note that all of the proposed buildings, parking areas, and stormwater management system components are located entirely outside the limits of the Riverfront Area.

The review and consideration of "Practicable and Substantially Equivalent Economic Alternatives" must consider four general factors, as reviewed below:

Cost (310 CMR 10.58(4)(c)(1)(a) - Relocating the emergency fire access road out of the Riverfront Area to avoid the minor impacts associated with its construction is not practicable. Such a modification would require that Building B be reduced in size and would potentially result in the loss of approximately 20% of the total proposed housing units. This is not consistent with the project purpose which is to provide much needed affordable housing and would make the project uneconomic.

Technology (310 CMR 10.58(4)(c)(1)(b) - Although a paved emergency access road was initially considered, a technological alternative was selected. Instead of a paved surface, the emergency access road will be constructed using geoblock, as shown on Sheet C-10 prepared by Rizzo Associates (under separate cover). These interlocking blocks provide a substitute for an impervious surface. The geoblocks are capable of supporting emergency vehicles, but provide a surface that minimizes runoff and allows for recharge.

Proposed Use (310 CMR 10.58(4)(c)(1)(c) – The project purpose is to provide much needed affordable housing for the Town of Belmont. According to the latest DHCD Subsidized Housing Inventory (August 2005), the town of Belmont has 2.7% of its housing stock defined as affordable, well below the threshold requirements established under Chapter 40B of MGL. Practicable and substantially equivalent economic alternatives include alternatives which are economically viable for the proposed use from the perspective of site location, project configuration within the site, and the scope of the project. As noted above, approximately 95% of the Project is not located in the Riverfront Area. All of the proposed buildings, parking areas, and stormwater management system components are located entirely outside the limits of the Riverfront Area. Where unavoidable impacts associated with the proposed emergency fire access road are proposed, impacts will be minimized and mitigated accordingly.

Logistics (310 CMR 10.58(4)(c)(1)(d) - The initial alternative that was part of the original Application did not have an emergency fire access road, but had greater Riverfront Area impacts due to the stormwater management basins. After the request by the Belmont Fire Department for the access road, the stormwater management plan was adjusted to move the basins from behind the buildings and replace them with the access road. The Riverfront Area is continuous behind Building B. Because the access road needs to serve the entire rear of the building, there is no logistical alternative to the road location. As indicated above, the only alternative would be eliminating or substantially modifying Building B from the site plan, which is not considered practicable because it would make the Project uneconomic especially when one considers the Project's purpose and that approximately 95% of the Project is not located in Riverfront Area.