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March 20, 2008

Mr. Michael Wheeler, Senior Planner
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3015 H Street
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Dear Mr. Wheeler:

**Initial Study and Proposed Mitigated Negative Declaration:
Beau Pre Heights Subdivision, McKinleyville**

On July 5, 2007, the Department of Fish and Game (DFG) received a referral from your office that included an initial study, proposed mitigated negative declaration (MND), and a request for comments for the proposed Beau Pre Heights Subdivision (project), in McKinleyville.

The intent of the referral is to solicit DFG's comments and recommendations for conditions of approval. The referral also requests DFG's assessment of whether the mitigations proposed in the MND will reduce the potential environmental impacts of this project to a less than significant level and therefore not require the preparation of an Environmental Impact Report (EIR).

DFG staff has reviewed the initial study, proposed MND, site plans, botanical report, vertebrate report, and wetland delineation. DFG staff also conducted site visits on February 8 and September 11, 2007. DFG offers the following comments and recommendations in our role as a trustee and responsible agency pursuant to the California Environmental Quality Act (CEQA).

Project Description

The project proposes subdividing approximately 191 acres of forestland into a private gated residential community comprised of 80 parcels ranging in size from 1.1 to 7.6 acres. The majority of the parcels (62) are between one and two and one half acres. The project also proposes a road system and a 3.4-acre community park. The project site is zoned Agricultural General with 0.5-acre minimum parcel size, with Airport, Noise and Wetland/Riparian Habitat Combining Zones. Each parcel will have its own onsite wastewater treatment system (OWTS).

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Project Setting

The project site is primarily a mosaic of open-canopy second growth forest stands dominated by red alder (*Alnus rubra*), Sitka spruce (*Picea sitchensis*) and scattered Douglas-fir (*Pseudotsuga menziesii*), coast redwood (*Sequoia sempervirens*), and grand fir (*Abies grandis*) (Winzler and Kelly Consulting Engineers 2006).

The project site also includes a distinct 36-acre forest dominated by mature Sitka spruce. This Sitka spruce-dominated forest is primarily closed-canopy and includes scattered Douglas-fir, grand fir, and red cedar (*Thuja plicata*). Land uses adjacent to the project site include low-density rural residential development to the northwest, industrial timberlands to the north, east and south, and a public golf course to the west.

Sensitive Species

Winzler and Kelly Consulting Engineers (2007a) identified ruffed grouse (*Bonasa umbellus*) on site. On the September 11, 2007 field visit, DFG staff identified breeding habitat for and adult individuals of the northern red-legged frog (*Rana aurora*). Both these species are California Species of Special Concern (SSC).

DFG designates certain vertebrate species as SSC because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. Though not listed pursuant to the federal Endangered Species Act or the California Endangered Species Act, the goal of designating taxa as SSC is to halt or reverse these species' decline by calling attention to their plight and addressing the issues of conservation concern early enough to secure their long-term viability.

Botanical surveys identified five populations of running pine (*Lycopodium clavatum*) and one population of marsh violet (*Viola palustris*). The California Native Plant Society (CNPS) creates lists in an effort to categorize degrees of conservation concern. Running pine and marsh violet are CNPS List 2 plants, which they determine to be rare, threatened or endangered in California but are more common elsewhere. Based upon information compiled by CNDDDB and DFG staff in Eureka, DFG finds running pine and marsh violet meet the definition of rare pursuant to CEQA §15380, which highlights the need for impacts to these species be mitigated to a less than significant level. To mitigate impacts to these occurrences to a less than significant level, DFG recommends structures be placed at least 100 feet away from these populations or a specific sensitive plant consultation with DFG be completed prior to project approval.

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The project site provides aquatic habitat, including palustrine scrub/shrub wetlands and headwater tributaries to Norton Creek. Norton Creek, a tributary to Widow White Creek and the Mad River estuary, contains coastal cutthroat trout (*Oncorhynchus clarkii clarkii*), a SSC, coho salmon (*O. kisutch*) a State- and federally-threatened species and steelhead trout (*O. mykiss*) a federally-threatened species. Coho salmon have undergone at least a 70% decline in abundance since the 1960s, and is currently at 6 to 15% of its abundance during the 1940s (DFG 2004). Activities in the watershed currently underway to help conserve these species include restoration projects by the Redwood Community Action Agency in Widow White Creek to improve fish habitat and reduce urbanization-related erosion.

Loss and Degradation of Forested Wildlife Habitat

This project will result in the direct replacement of forest wildlife habitat. The MND does not specify the total forested acreage proposed for conversion, but based upon 80 building lots and a road system being proposed, it appears this project will convert a minimum of 80 forested acres to a rural residential landscape of homes and related structures, lawns, roads and appurtenant public infrastructure. In addition to the direct permanent conversion of forest habitat, this project will also fragment and degrade the wildlife habitat value of the remaining on-site and adjacent forestlands.

Rural residential development has three principal effects on adjacent forest habitat: 1) structures, roads, driveways, yards and associated facilities degrade natural wildlife habitat by fragmenting what forest remains into smaller, less contiguous areas of functional habitat; 2) it results in the introduction or increased prevalence of exotic species or species that are habitat generalists, termed "human adapted" or "urban exploiters", and 3) it diminishes native species abundance and biodiversity resulting in a loss of "human-sensitive" species that require natural habitats. In general, these effects occur because development tends to favor species well-adapted to human habitation with subsequent negative effects on sensitive species and those species best adapted to natural habitats (Hansen et al., 2005; Marzluff and Neatherlin 2006).

The impacts of urban and rural development on fish and wildlife habitat in adjacent natural areas are well documented (Hansen et al., 2005). The development-related loss of native species abundance and diversity or the increase in exotic and native generalist species has been shown for bird assemblages (Beissinger and Osborne 1982; Wilcove 1985; Crooks and Soulé 1999; Luginbuhl et al., 2001; Odell et al., 2003), mammals (Maestas et al., 2001), fish (Paul and Meyer 2001), amphibians (Davidson et al., 2001; Ridley et al., 2005), terrestrial and freshwater invertebrates (Miyashita et al., 1998; Paul and Meyer 2001; Ridley et al., 2004), and plants (Galatowitsch et al., 1999; Mack and Lonsdale 2001; Reichard and White 2001).

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Additionally, this project is likely to negatively impact wildlife through increased road-kill (Trombulak and Frissell 2000; Malo et al., 2004), light pollution (Rich and Longcore 2006), the killing of and disturbance to wildlife by domestic animals such as house cats, and increased human conflict with wildlife such as black bear, mountain lion, and fox, which often results in killing (depredation) of these animals.

To minimize project impacts to terrestrial and aquatic habitat, including sensitive plant populations, the MND states building areas on each parcel shall be restricted to designated building footprints and driveways plus a 30-foot-wide defensible space area and that no clearing or vegetation removal will be allowed on the remainder of each parcel. To implement this mitigation, the MND states: "A notation to this effect shall appear on the development plan."

Given the sensitive plant populations and prevalence of wetland, riparian, and forest wildlife habitat on the project site, DFG supports mitigations that minimize vegetation clearing on individual parcels. However, from the information provided in the MND, it is unclear by what process proposed restrictions on vegetation clearing will be enforced and what entity could feasibly enforce them. It is unclear from the MND if second units and additional structures such as garages, barns and stables will be restricted on the proposed parcels once the project is approved or if individual parcel owners could apply for a timberland conversion exemption pursuant to the California Forest Practice Rules. To ensure this mitigation cited in the MND remains in place and effective, what ordinance, code, standard, or other regulation would be feasibly enforced, and by whom, if a parcel owner were to progressively clear their land over the years?

Given the above information and based upon the information presented in the MND, DFG believes there is substantial evidence, in light of the whole record, that this project has the potential to substantially degrade the quality of the environment, despite proposed mitigations. Therefore, pursuant to CEQA §15065, the preparation of an EIR is required. DFG recommends the EIR disclose in greater detail how this project's restrictions on individual parcel vegetation clearing will be enforced.

Wildlife Corridors

The MND states "There is no evidence that the site is utilized as a significant wildlife dispersal or migration corridor," and that "the project will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife

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corridors...” However, the MND provides no analysis or discussion to substantiate this claim. DFG believes the MND does not adequately evaluate the project site’s use by wildlife for dispersal and migration. The MND states that wildlife movement corridors will be available along the steep portions of the western property line and through east-west-trending stream setback areas, but north-south wildlife movement (following the ridgeline) is not discussed. Given the project’s size, its present forested condition, and its location along the first forested ridge from the coast between the Little River and Mad River watersheds, DFG believes this project has the potential to substantially restrict or interfere with the movement of native resident wildlife species such as black-tailed deer (*Odocoileus hemionus*).

The MND does not include information on the placement of fences or walls around the project’s borders. Because a gated development is proposed, it appears probable that long sections, or all of the project’s borders, may be walled or fenced. The placement of walls or fences is likely to result in alteration, disruption, or barriers to wildlife dispersal and migration patterns. The potential effects on the dispersal and migration patterns of wildlife are compounded by the project’s adjacency on three sides by extensive contiguous forestlands, and the project’s southern boundary on Murray Road, a major county artery connecting the communities of McKinleyville and Fieldbrook.

DFG recommends the project utilize landscape features such as stream setback corridors and wetland setback areas to maintain wildlife corridors through the project site and that the project be unfenced or utilize wildlife-permeable fencing. DFG recommends that areas on a given parcel fenced specifically to exclude wildlife or enclose livestock (deer-proofed garden areas or horse paddocks) be minimized on each parcel, and that parcel boundaries be unfenced or use wildlife-permeable fencing. To be effective, fencing standards must be made enforceable. DFG recommends the EIR disclose if and how the project will be walled or fenced and how wildlife-permeable fencing standards will be made enforceable as individual parcels are developed.

Sitka Spruce Natural Community

Sitka spruce is an endemic Pacific Northwest species with a native range from Alaska to northern California. In California it occupies a narrow coastal band and its southernmost contiguous range terminates in central Humboldt County. A disjunct population in central Mendocino County near Russian Gulch forms the southern terminus of its range.

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CNDDDB classifies vegetation for the primary purpose of assisting in determining significance and rarity of various vegetation types. Sitka spruce forest associations are recognized by the CNDDDB as a natural community considered rare and of high priority for inventory. The DFG List of California Vegetation Alliances assigns Sitka spruce forests a rarity rank of G5S2. This designation means that Sitka spruce forests are considered globally common but rare in California. Large, contiguous stands of mature Sitka spruce are uncommon in the region due to this species' limited range and because agricultural and residential development in the coastal zone have resulted in removal of these forests and because of timberland silvicultural practices that have converted them to more economically valuable species such as redwood and Douglas-fir. The initial study states Sitka spruce was once an extensive forest type in the project area extending from the project site west to Central Avenue and east to the ridge-crest (approximately one kilometer in each direction).

Two comparative genetic studies found rare and localized alleles (genetic variation) only in peripheral and disjunct populations of Sitka spruce, such as those occurring near its southern terminus in California, and that these rare alleles were not found in more central populations (Gapare et al., 2005). Peripheral populations of Sitka spruce are also shown to have strong spatial genetic structure (an arranged demographic pattern of genetic variation) not found in more central Sitka spruce populations and unusual in conifers and other temperate tree species (Gapare and Aitken 2005). These genetic findings heighten the conservation value of Sitka spruce stands occurring near the edge of their range (Leppig and White 2006).

A 1941, 1948, 1965, and 2005 CAL FIRE aerial photo sequence of the project site shows that in 1941 the project area had been recently clearcut, though some residual trees remained. Therefore, this forest stand is approximately 70 years old with some of the residual trees likely to be 80-90 years old. During one of DFG's site visits, numerous trees were measured with a diameter at breast height (DBH) of greater than 50 inches, with larger trees having DBHs of 70-80 inches. Based upon DFG's limited field review, it appears this mature Sitka spruce forest meets the definition of a late successional forest stand as defined by Title 14, CCR, §895.

The Humboldt County General Plan §3420 *et. seq.*, McKinleyville Community Plan states: "When habitat for a specific species of plant or wildlife are in short supply because either the habitat is limited to a small geographic area or is threatened by rapidly changing conditions, then the habitat is

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designated sensitive.” The McKinleyville Community Plan also defines a sensitive habitat as those habitats and communities listed by CNDDDB. The Biological Resources section (b) of the environmental checklist form included with the initial study asks if the project would have a substantial adverse effect on a sensitive natural community identified by DFG. To this question, the initial study has the box checked that indicates the project will have potentially significant impacts unless mitigation is incorporated. However, the initial study does not identify Sitka spruce forest associations as being listed by CNDDDB or meeting the McKinleyville Plan’s definition of a sensitive habitat, and therefore does not address potential impacts to this habitat.

According to the initial study, 36 acres of the 191-acre project site are composed of mature Sitka spruce forest. Of these 36 acres, 20 acres are proposed to be cleared for parcel development. DFG believes it is highly likely that additional mature Sitka spruce trees will be cleared after homes are built due to homeowners’ desire for increased solar gain and because large trees in close proximity to homes will be designated as hazards.

DFG believes there is substantial evidence that the placement of residences within a Sitka spruce forest is not compatible with the maintenance of that forest. Sitka spruce has a shallow root systems and is prone to fragmentation-related wind-throw (blow-down). Large-scale Sitka spruce wind-throw, and accompanying property damage in a fragmented residential setting occurred in the Stage Coach Road area of Trinidad during a 2006 winter storm. This storm induced a number of Stage Coach Road area residents to remove many potentially hazardous Sitka spruce trees. In 2007, the Big Lagoon Park Company applied to the County for a Coastal Development Permit and Special Permit for major vegetation removal to cut down 43 mature Sitka spruce that were determined to be a hazard to residences and community water facilities. The removal of trees to create a 100-foot-wide defensible space fire-safe area around structures pursuant to Public Resources Code §4291, and continual vegetation clearing to maintain this area, will also reduce this stand and diminish its habitat quality.

Based upon our preliminary assessment of this Sitka spruce stand, DFG has determined the proposed removal of 20 acres of this 36-acre forest and the resulting habitat degradation and fragmentation of the remnant forest, is likely to have a significant effect on the environment. DFG recommends the project avoids direct and indirect impacts to this Sitka spruce forest to the greatest extent practicable. To mitigate impacts to this forest, DFG recommends some combination of placing it in a conservation trust or easement, designating it as a

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park or open space, configuring it and its buffer on one developable parcel, or as few parcels as practicable, and situating residence locations at a sufficient distance from the forest so that the trees are unlikely to be designated as hazards and removed in the future.

Wetland and Riparian Setbacks

The wetland delineation map provided in the referral information shows five headwater streams originating from the project site. The project proposes 50 foot riparian setbacks from stream transition zones. DFG supports the use of riparian setbacks that effectively minimize disturbance by human activities.

Pursuant to Public Resources Code §4291, structures must have 100-foot-wide defensible space fire-safe areas. Defensible space areas typically require ongoing vegetation management to reduce fuel loads. If residences are proposed within 100 feet of wetlands and streams, the maintenance of fire safe areas are likely to result in the removal of riparian vegetation and a significant loss of wildlife habitat quality. DFG therefore recommends that structures be located such that their defensible space areas are placed outside of wetland and riparian protection setbacks.

Five discrete wetlands occur within the project site and for identification purposes are numbered 1-5 (Winzler and Kelly Consulting Engineers 2007b). Wetland 1 is centrally located within the project site and covers 1.26 acres, while wetlands 2 through 5 combined, total approximately 0.25 acres and are dispersed throughout the remainder of the project site. The project proposes 50 foot setbacks on all wetlands within the project site.

The State of California has a “no net loss” wetland policy. Wetlands provide essential habitat for a wide variety of important resident and migratory fish and wildlife species. Therefore, it is the policy of the Fish and Game Commission to provide for the protection, preservation, restoration, enhancement and expansion of wetland habitat in California. Potential direct and indirect effects from development adjacent to wetlands include, but are not limited to: altered hydrology; diminished water quality from the discharge of pollutants such as sediment, pesticides, petroleum products, pathogens and other toxic substances; vegetation removal; disturbance to wildlife from noise, night lighting, and domestic animals; introduced invasive plant and animal species; altered microclimate; and human intrusion such as off-road vehicle use, trash dumping, and illegal filling.

DFG finds that a 50 foot setback is inadequate to minimize disturbance to the centrally located 1.26-acre wetland. To adequately minimize disturbance to this wetland and best maintain wetland function and wildlife value, DFG recommends a 100 foot setback. This 100 foot setback will more effectively minimize impacts to this wetland by maintaining forest canopy, microclimate, water temperature, hydrology, and native plant and animal diversity. To maintain wetland and riparian water quality, DFG recommends that OWTS be placed outside of wetland and riparian setbacks.

DFG had determined that in general, the quality of sensitive habitats such as wetlands and riparian corridors is best and most effectively maintained when they are owned or managed as larger contiguous areas on as few parcels as possible, rather than fragmented into many smaller ownerships. Therefore, DFG recommends the subdivision parcels be configured in such a way as to best consolidate riparian corridors and the large central wetland into as few parcels as practicable.

Stormwater Management and Non-point Source Pollution

The project proposes utilizing low-impact development (LID) strategies such as permeable pavement, vegetated stormwater bio-swales and retention basins to treat retain and infiltrate stormwater runoff on site. These stormwater facilities and strategies are designed to prevent project-generated stormwater runoff from exceeding that of a 2-year storm event. DFG supports the use of LID strategies because they minimize impacts to aquatic habitats by filtering out pollution, preventing increased peak flows and related erosion, and because they increase ground water recharge and therefore help maintain biologically-important summer low flows.

As a mitigation for impacts to streams flowing from the project site, the initial study states the subdivider shall prepare and submit a stormwater management plan to the Regional Water Quality Control Board. It is unclear from the initial study if the LID strategies proposed for this project pertain to the development of individual parcels or are restricted to public facilities.

DFG recommends the project include post-project stormwater performance criteria and enforceable LID strategies for individual parcels that minimize the introduction of non-point source pollution into streams while maintaining pre-project stormwater runoff volume, rate, and duration. By mimicking the sites' natural hydrology to the greatest extent practicable, the project will minimize its erosion potential on streams as well as minimize its potential effects on downstream flooding.

Exterior Lighting Standards and Photo-pollution

The project, as proposed, does not describe exterior lighting specifications. The adverse ecological effects of artificial night lighting on terrestrial and aquatic resources such as fish, birds, mammals, and plants are well documented (Rich and Longcore 2006). Some of these effects include altered migration patterns and reproductive rates, changes in foraging behavior and predator-prey interactions, altered wildlife species richness and community composition, and phototaxis (attraction and movement towards light). The project is located on and adjacent to land with significant wildlife habitat values. DFG recommends this project minimize exterior lighting and that any exterior lighting be designed to minimize the potential of light pollution by following the exterior lighting standards included in the McKinleyville Community Services District Ordinance 51.07.

Specific Recommendations:

1. An EIR must be prepared for this project.
2. Locations of proposed structures shall be at least 100 feet from running pine and marsh violet populations or a specific sensitive plant consultation with DFG shall be completed prior to project approval.
3. The project perimeter and parcel boundaries shall not be fenced or walled or shall utilize wildlife-permeable fencing. Areas on individual parcels fenced specifically to exclude wildlife or enclose livestock (e.g. deer-proof garden areas or horse paddocks) shall be minimized to the greatest extent practicable. Parcel fencing standards must be enforceable.
4. The EIR must evaluate this project's potential effects on wildlife dispersal and migration.
5. The EIR must evaluate the projects impacts to the Sitka spruce forest.
6. The project must include some combination of placing this Sitka spruce forest in a conservation trust or easement, maintaining the stand and buffer on one parcel, or as few parcels as practicable, and designating proposed structure locations at a sufficient distance from the stand so that the trees are unlikely to be designated as hazard trees and removed in the future.

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7. Fire-safe defensible space areas must be placed outside of wetland and riparian setbacks.
8. Designate at least a 100 foot setback on the perimeter of the 1.26-acre wetland. This wetland and its 100 foot setback should be consolidated into one parcel or as few parcels as practicable.
9. Consolidate riparian and wetland habitats and their setbacks into as few parcels as practicable.
10. OWTs must be placed outside of wetland and riparian setbacks.
11. The EIR must disclose how this project's restrictions on vegetation clearing will be effectively enforced.
12. Provide post-project stormwater performance criteria that maintains pre-project runoff volume, rate, and duration.
13. Include enforceable LID strategies for individual parcels that prevent post-project introduction of non-point source pollution to streams.
14. Exterior lighting standards must meet or exceed the light pollution mitigation standards in McKinleyville Community Services District Ordinance 51.07.

If you have any questions or comments regarding this matter, please contact Staff Environmental Scientist Gordon Leppig at 619 Second Street, Eureka, California, 95501 or telephone (707) 441-2062.

Sincerely,

GARY B. STACEY
Regional Manager

cc: See Page

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