

Disclaimer: We have created a fictitious threatened species, the Potomac Highlands hedgehog and mapped it within Jefferson County as a training aid for our Habitat Conservation Planning Course ECS 3117.

ENVIRONMENTAL ASSESSMENT

For the

ISSUANCE OF AN INCIDENTAL TAKE PERMIT UNDER SECTION 10(a)(1)(B) OF THE ENDANGERED SPECIES ACT

For the

THREATENED POTOMAC HIGHLANDS HEDGEHOG CITY OF CHARLES TOWN TRACT 90210 CHARLES TOWN, WEST VIRGINIA

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I. PURPOSE AND NEED FOR THE ACTION

A. BACKGROUND

West Highlands Estates Limited Partnership, a West Virginia limited partnership (West Highlands or applicant) of Charles Town seeks an Incidental Take Permit for a period of 20 years from the U.S. Fish and Wildlife Service (Service) pursuant to Section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (ESA). The permit would authorize take of the Potomac Highlands hedgehog, an endangered species, for up to seven individuals upon the destruction of 50.2 acres of their habitat as an incidental consequence to residential development of 110 lots by West Highlands in Tract 90210.

Tract 90210 was originally approved by the City of Charles Town as a 200-acre residential subdivision over 10 years ago. A recessionary economy halted development plans at that time, though portions of the property have subsequently been used for cattle grazing and corn production. In June 1998, West Highlands Estates Limited Partnership, a limited West Virginia partnership, purchased Tract 90210.

The HCP describes the habitat requirements of the Potomac Highlands hedgehog, habitat for the species in the planning area, and the results of hedgehog surveys on the property and adjacent riparian forest along the Shaughnessy River. The Service has concluded that a portion of the property is occupied by the hedgehog and the destruction of this habitat will constitute take.

Pursuant to section 10(a)(2)(A), West Highlands Estates Limited Partnership has submitted a Habitat Conservation Plan (HCP) with the Permit Application. The HCP is a statutory requirement of the permit application, estimates the level of incidental take expected to occur during the proposed activities, and specifies how impacts of the taking will be minimized and mitigated.

Section 9 of the ESA prohibits the “take” of federally listed species of wildlife unless authorized under the provisions of section 7, section 10(a), or section 4(d) of the ESA. Section 3 of the ESA defines take as “to harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Section 10(a)(1)(B) defines “incidental take” as take that is incidental to, and not the purpose of, the carrying out of otherwise lawful activity.” Federal regulation defines the terms “harass” and “harm” as follows. Harass means “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.” Harm means “an act which actually kills or injures wildlife” and “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.” A section 10 permit constitutes an exception to the taking prohibition of section 9.

This NEPA document addresses environmental effects associated with the issuance of a 10(a) permit in order to provide reviewers of this NEPA document with all information necessary for an appropriate record of decision.

B. PURPOSE AND NEED

The purpose of the proposed action is to authorize incidental taking of Potomac Highlands hedgehogs, including the development of 50.2 acres of occupied habitat for single family residences on 110 lots within Tract 90210 in the City of Charles Town, West Virginia. Such authorization is necessary because activities associated with the proposed action may result in take of the hedgehog, despite the mitigation program proposed by West Highlands in the HCP. West Highlands and the Service consider implementation of the HCP in connection with a section 10(a)(1)(B) permit to be an effective means to reconcile the development of the occupied hedgehog habitat with the section 9 prohibition and other conservation mandates under the ESA.

The needs and goals of the Service are: 1) to minimize impacts to the Potomac Highlands hedgehog and its habitat during the proposed action; 2) to ensure compliance with the ESA, the National Environmental Protection Act (NEPA), and other applicable federal laws and regulations, and, 3) to maintain consistency with the Jefferson County regional conservation planning by targeting off-site mitigation in areas of regional significance for multiple species conservation planning.

C. PROPOSED ACTION AND DECISIONS NEEDED

The proposed Action is issuance of a permit by the Service to allow incidental take of the Potomac Highlands hedgehog during development of Tract 90210 in the City of West Charles.

Pursuant to section 10(a)(2)(B) of the ESA decisions to be made by the Service are:

1. Is the proposed take incidental to an otherwise lawful activity?
2. Are the impacts of the proposed taking minimized and mitigated to the maximum extent practicable?
3. Has the applicant ensured that adequate funding will be provided to implement the measures proposed in the HCP?
4. Is the proposed take such that it will not appreciably reduce the likelihood of the survival and recovery of the species in the wild?
5. Are there other measures that should be required as a condition of the permit?

The Service is required by the ESA to issue a permit if the statutory and regulatory requirements are satisfied. If approved, the Service may choose to 1) issue a permit conditioned on

implementation of the HCP as submitted by West Highlands Estates Limited Partnership, or 2) issue a permit conditioned on implementation of the HCP as submitted together with other measures specified by the Service. If the requirements are not satisfied, the Service must deny the permit.

II. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

NEPA requires that a range of alternatives be considered that allows decision-makers and the public to objectively consider the merits of each alternative. The “no action” alternative must be considered along with a reasonable range of alternatives and mitigation strategies.

A. ALTERNATIVES CONSIDERED BUT NOT SELECTED FOR DETAILED ANALYSIS

Delay of Take Pending Completion of a Regional Multiple Species Conservation Program

Under this alternative, incidental take in connection with the development project would not be allowed until a regional multiple species conservation program is in place. This option was not selected for separate consideration in the EA because the selected alternatives include a consideration of regional plans and programs; regional impacts also are considered in terms of potential cumulative impacts.

The Permit Applicant considered but rejected this option when preparing the HCP, noting that 1) the approach would delay but not avoid the development impacts; 2) the HCP addresses regional issues; 3) delay of the development project would delay implementation of the proposed conservation measures thereby preclude any immediate benefits of those plans for individual species; and 4) further delay of the development project could cause the Permit Applicant financial hardship if additional species are listed and another economic upturn should occur prior to completion of the regional HCP.

Dedication of the lots along the south side of the property.

This alternative would entail the dedication of the lots along the south side of the property adjacent to the Shaughnessy Rivers. No construction on these periphery lots would be permitted and they would become a buffer between the subdivision and the river. This alternative would have the effect of reducing (or perhaps just altering) the indirect or edge effect of the subdivision on the Hedgehog population within the bounds of the Shaughnessy River property. To the extent that the anticipated effects were reduced then the level of incidental take would be reduced. Ostensibly, the retention of these lots would also reduce the amount of defined habitat take by at least half of the anticipated 50.2-acres.

However, this scenario also becomes infeasible when considering the pragmatic and fiscal ramifications. At a purely pragmatic level, these lots by themselves would not form as good a

buffer as they would only provide access to the Shaughnessy River. The lots, by themselves, are transparent to dogs, children, light, sound, and the visual perception of movement. Buildout of all 110-lots within the subdivision allows the land costs to be spread over 100 percent of the lots (as originally intended) and allows the developer to amortize the costs associated within minimization over all of the lots.

In addition, the developer would have to re-zone the property according to the local land use regulations. This would entail re-submittal of new plan document, which would require hiring new engineers to make sure that the new plan was feasible, as well as the costs associated with the land use approval process. The Service has determined the cost associated with this procedure does not outweigh the conservation benefits gained and therefore is not practicable for the applicant to consider.

B. ALTERNATIVES CONSIDERED FOR DETAILED ANALYSIS

PROPOSED ACTION

The proposed action is the issuance of a 10(a)(1)(B) permit by the Service to allow the incidental take of the Potomac Highlands hedgehog due to the clearing, development, and permanent conversion of 50.2 acres of hedgehog habitat to single family homes on Tract 90210 within the City of Charles Town, Jefferson County, West Virginia.

Under this alternative, the Habitat Conservation Plan (HCP) as proposed by West Highlands Estates would be approved and implemented. This alternative assumes that all of the subject 110 lots within the 200-acre Project site (Figures 1, 2, and 3) would be cleared of native vegetation to allow for the construction of single family residences. This action would result in direct effects to seven hedgehogs through the loss of 50.2 acres of occupied habitat. Restoration of 15.79 acres to hardwood forest is proposed on the south lots, 66 through 108. The restoration plan calls for plantings of native vegetation which will likely take 50 years to become similar to the current habitat condition. In addition, indirect effects from the proposed development will occur to the adjacent hedgehog-occupied property in riparian forest along the Shaughnessy River.

To offset and minimize these effects to the hedgehog, West Highlands Estates Limited Partnership proposes to implement the following minimization and mitigation measures:

1. Prior to any clearing or development West Highlands will purchase 69 hedgehog credits (acres) within the West Hills Mitigation Bank that support at least seven individuals of hedgehogs and fund an endowment at \$172,500 (\$2,500/acre). Eighty percent of the endowment (\$138,000) is for mitigation management and monitoring and the remainder (\$34,000) is for other Potomac Highlands hedgehog recovery projects by the Bank in Jefferson County. If the Conservation Bank Agreement is not finalized prior to the approval of the West Highlands HCP for reasons beyond the control of West Highlands, West Highlands may purchase 69 acres of suitable mitigation credits in another Conservation Bank, as approved by

the Service.

2. In addition to minimize the possible edge effects on site with the adjacent Shaughnessy River area, 15.79 acres of hardwood forest would be restored on the south side of the proposed project adjacent to the Shaughnessy River. The plan calls for a one-time planting after the homes are built. The estimated cost of the restoration is \$250,000. A monitoring program to ensure that the restoration is successful is not proposed.
3. Indirect effects from residences on the Shaughnessy Riparian area will be minimized by recorded Deed Restrictions for lots 66 through 108 prohibiting dogs, the restriction of outdoor lighting using shields and other measures as required to prevent the illumination of habitat beyond the rear property line; and the preparation of a conservation information packet attached to the recorded deed of each property which describes the biological values of these resources, their appropriate use, and enforceable provisions by the Home Owner's Association.
4. During ongoing agricultural operations prior to real estate development, hedgerows will be planted and maintained to facilitate dispersal of hedgehogs through the property.

OFFSITE MITIGATION ALTERNATIVE

This alternative would consist of the proposed project with different mitigation requirements of purchasing 151 hedgehog credits (acres) within the West Hills Mitigation Bank that support at least seven hedgehogs and fund an additional endowment at \$377,500 (\$2,500/acre). Eighty percent of the endowment (\$302,000) is for mitigation management and monitoring and the remainder (\$75,500) is for other Potomac Highlands hedgehog emergency and recovery projects by the Bank in Jefferson County. The on-site restoration of 15.79-acres associated with the south lots would not occur adjacent to the Shaughnessy River that would form a buffer between the subdivision and the Shaughnessy River. This alternative would increase the amount of hardwood forest habitat lost but would not increase the incidental take of the hedgehog. Instead of restoration, the applicant would place the homes on the front portion of the lots leaving a 200-foot buffer; about 5 acres would remain in old growth habitat.

NO ACTION ALTERNATIVE

The No Action alternative assumes that the proposed West Highland Estates, City of Charles Town Tract 90210 Habitat Conservation Plan and incidental take permit application would not be approved. Real estate development causing the incidental take of the Potomac Highlands hedgehog would not occur, but agricultural use of the property would continue without hedgerows.

III. AFFECTED ENVIRONMENT

As part of the approval of Tract 90210 as a residential subdivision by the City of Charles Town a detailed Environmental Impact Report (EIR) was completed. This NEPA document incorporates the EIR by reference. This environmental assessment has re-analyzed the effects and has included a summary of only those effects that were thought to be significant but were mitigated below a level of significance. The EIR can be reviewed if a more detailed description of the effects is warranted

A. ENVIRONMENTAL SETTING

1. LOCATION

Tract 90210 is a previously approved single family residential subdivision for development in the City of Charles Town, West Virginia. It is located west of Charles Town, south of Old Mine Road, north of the Shaughnessy River, and east of Route 15.

2. SETTING

Charles Town tract 90210 is located within a rapidly growing and developing portion of Jefferson County, near the Washington-Metro area. Land uses surrounding Tract 90210 include:

- Mallard Homes Tract. The complex of streets south of this property (see Figure 2) is a series of 223 lots, originally approved at the same time as Tract 90210. However, the developer of this subdivision immediately began construction after approval with the utilities and roads associated with the project. The developer subsequently went bankrupt before the homes could be completed. This complex of lots also supports the hedgehog and an HCP is presently in progress for this partially built subdivision.
- Immediately to the north of Tract 90210 is Old Mine Road and south is the Shaughnessy River. The Old Mine Road was the main line during the 1800's used to access the Valley Coal mine 5 miles to the north of this property. The mine was shut down in 1910. Old Mine Road is today a two-lane prime arterial. The adjacent Shaughnessy River is occupied by a well developed Riparian Forest. Based on the survey information, the riparian of the river is utilized by the hedgehog as a dispersal corridor.

Properties to the northeast, east, and southeast are (with one exception) privately-owned, with mostly open hardwood forests either known or suspected to be inhabited by the Potomac Highlands hedgehog. Further to the north of the subject Tract is the residential community of Washington Hills and to the northeast is Harpers Ferry. To the northeast of the Tract is a large, approved, but as yet undeveloped (although portions of the site have been graded) residential community known as East Fields.

B. VEGETATION

The 200-acre tract is a mixture of hardwood forests and agriculture fields and pasture. In the early 1800's, the entire site was used for agricultural production. When production ceased on about 50 acres, an open hardwood forest succeeded on the site.

C. SPECIES OF CONCERN

1. Sensitive Plant species

The West Virginia Native Plant Society (WVNPS), in conjunction with the West Virginia Department of Natural Resources (WVDNR) and the West Virginia Natural Diversity Data Base (WVNDDDB), maintains an active program of evaluating and listing the endangered, threatened, and rare or sensitive plant species found within the State. The WVNPS data base records a total of five sensitive species or species of concern, occurring within a 10-mile radius of West Highland Estates. The habitat for most of these species is not available on West Highland Estates. Potential habitat for the swamp pink would be the most likely to be present on the site.

Swamp Pink. The swamp pink is listed as federally threatened, since Sept. 9, 1988. A new population has recently been located in West Virginia and recent discoveries within Big Bog County Park have created new interest.

Swamp pink is an obligate wetland species occurring along streams and seepage areas in freshwater swamps and other wetland habitats. It is found mainly in large wetland areas surrounded by buffers of intact forest which provide protection to the wetland site. The most important factor determining suitability of habitat is a constant water supply. There is a strong correlation between the presence of conifer tree species and the occurrence of *Helonias*.

Swamp pink is a smooth perennial herb with thick stocky rhizomes. Plants bloom as early as March and as late as May, while seed production occurs in June. Both self and cross fertilization occurs but few plants with a population produce flowers. The species exhibits extremely low seedling establishment which appears to be a significant limitation on colonization of new sites.

Site specific studies: Because of the adjacency of the Shaughnessy River to the development site, a focused survey was conducted in May of 2002. No *Helonias* was found on site, which may be due to the lack of conifers in this area.

The proposed project is not expected to affect Swamp Pink.

2. Sensitive Wildlife

The wildlife of Tract 90210 and adjacent properties reflects the kind, amount, and distribution of habitat in a mixed agricultural, urban, and forest environment. The transition among these different habitats frequently is abrupt, with abundant edges between fields, hardwood forest patches, and urban areas. Larger mammals include the Bobcat (*Lynx rufous*) and Grey Fox (*Urocyon cinereoargenteus*) that utilize hardwood forests as well as pastures and edges of agricultural fields. Grey squirrels and rabbits are common on the West Highlands property. Small mammals are relatively abundant while the reptilian fauna is depauperate. Birds are the most abundant element of the existing fauna, particularly in forests bordering the Shaughnessy River. The species richness and diversity of the fauna on Tract 90210 is less than that associated with forest and riparian habitat along the Shaughnessy River.

Potomac Highlands Hedgehog

The Potomac Highlands hedgehog historically was endemic to Potomac highlands in the Tri-county area, but currently is restricted to Jefferson County, West Virginia due to the loss and fragmentation of habitat by residential and urban development. The hedgehog uses several habitat types for different purposes. Open forests are important habitat for mating during early spring. Males and females are solitary, except during the mating season, when they are sensitive to disturbance from light and noise. While females and their yearly offspring hibernate during winter (November - April), male hedgehogs forage in hardwood forests primarily for beetle larvae from logs and decaying wood on the forest floor. Males also feed on acorns and other insects during winter. Males find and make winter shelter with leaves beneath rocks, logs, brush, or virtually any form of groundcover.

Females construct burrows along the forest edge or in hedgerows. Females and their offspring may become active, temporarily leaving their burrows during warm periods of late winter and early spring. In spring, females and offspring permanently leave winter burrows to begin actively feeding. Males and females are nocturnal, moving along forest edges and hedgerows while feeding on earthworms, snails, and slugs. Young males disperse from the nest, moving along the same habitat used for feeding to establish a new territory. Females frequently use another burrow for daytime shelter during the spring and summer, and excavate a new winter burrow. Males use a nest for one or several days, moving to others in their territory. Hedgehogs move extensively each night, from 1 - 2 km, though within a home range of about 30 acres.

Hedgehogs have relatively short life-spans, about 3 - 4 years, and relatively high reproductive rates. Predators include foxes, badgers, polecats, owls, dogs, and humans. Hedgehogs also are subject to Wobbly Hedgehog Syndrome (WHS), a fatal degenerative neurological condition similar to multiple sclerosis in humans from unknown causes. Early symptoms include partial paralysis, usually to individuals 18 - 24 months of age, of the legs or one side of the body, impairing the ability to walk and forage. With increasing weight loss and paralysis, death usually occurs from 6 - 19 months after onset.

The HCP describes two surveys to determine the occurrence and distribution of hedgehogs within and adjacent to Tract 90210. A total of seven hedgehogs were observed, all along the periphery of the West Highlands development. One pair occurred near the southern property line of Tract 90210, between the forest and agricultural area. Four adults were seen along the property boundary and adjacent riparian forest of the Shaughnessy River. And a single female with young offspring were found moving along the edge of the riparian forest, on open space lands owned by Charles Town.

Eastern wood toad. The habitat requirements of this species include open sandy banks along stream course. These requirements are not met on the adjacent reach of the Shaughnessy River. The River environment adjacent to the Tract is one of a closed canopy of older trees that completely shades the underlying stream flow. Lacking suitable habitats, this species will not be adversely affected by the anticipated buildout of the Tract.

Wood toads use upland habitats for shelter and foraging. They have been found up to one kilometer, and regularly several hundred meters, from water courses in upland areas. Overland movement, both to and from breeding areas and within upland habitats, is often closely tied to rainfall, particularly outside of the breeding season.

There are no records of wood toads in the portion of the Shaughnessy River which is adjacent to the project site. The proposed project is not expected to affect the wood toad.

D. TRAFFIC CIRCULATION

The City of Charles Town traffic plan includes several residential subdivisions and an integral street system. This street system was specifically designed in a manner that would effectively carry the traffic anticipated from the various individual Tracts, including Tract 90210. This traffic generation and its anticipated effects were addressed in the Charles Town Specific Plan Environmental Impact Report (EIR), prior to the approval of Tract 90210 as a residential subdivision. This EIR is incorporated by reference.

The two major roads serving Tract 90210 are Old Mine Road and Route 15. Both are built out to their maximum anticipated configuration. Old Mine Rd. was built out as a “major” street (four lanes in a 100-foot right-of-way) while Rt. 15 is an “urban arterial” with six lanes and a 120-foot right-of-way. The capacity of these two roads and the current loading on nearby segments is illustrated in the following table:

Roadway	Capacity	Segment	Current ADT (1995)
Old Mine Road	37,500	Corte Servi to Canyon Estates Drive	2,700
		Canyon Estates Drive to West Highlands Road	3,200

Roadway	Capacity	Segment	Current ADT (1995)
Rt 15	37,500	I-15 to Grape Street	34,400
		Grape Street to Cottonwood Hills Road	20,200
		East of Cottonwood Hills Road	20,000

As can be seen from an examination of the above table, both roads are operating well below capacity, except for the segment of Rt 15 immediately adjacent to the east side of Interstate-15. This segment carries traffic from the freeway and from Diamond Drive to Grape Street south, which is the access point to the Regional Shopping Center (Wal-Mart, etc.) to the south.

E. AIR QUALITY

Tract 90210 is a previously approved subdivision of the City of Charles Town. Air quality concerns begin with the mass grading of the site and in the exhaust emissions of heavy grading equipment during construction. The “remaining” air quality effects associated with the project are those associated with the construction of the homes themselves and with the anticipated 1,200 average daily vehicular trips (ADT) associated with the homes once they are complete and occupied.

The Charles Town lies within the Jefferson County Air Basin. That basin is a non-attainment area for federal and state standards for ozone, particulate matter, and nitrogen dioxide. Existing conditions within the Basin area were previously described in detail in the Charles Town Specific Plan EIR, the master environmental document for the developments that included Tract 90210. Ozone and particulates are considered the two most significant air quality concerns. There are almost no sources of more localized pollutants such as carbon monoxide (no “hot spots”), nitrogen oxides and lead. The background levels of these latter pollutants rarely exceed allowable levels. Suspended particulate levels are sometimes high throughout Jefferson County because of agricultural activities, dry soil conditions and high winds.

Air Quality mitigation measures were previously required as a part of the Charles Town Specific Plan EIR.

F. NOISE

The principal noise source in the vicinity of Tract 90210 is vehicular traffic on the present surface streets. Given the direct correlation between the volume and speed of the traffic and the noise level generated, all of the smaller feeder streets can be eliminated as potential noise sources. Such local streets do not support sufficient traffic to generate significant noise levels. Only the nearby Old Mine Road and Rt 15 have sufficient traffic loading to generate potentially significant noise levels. 1995 traffic levels on these two significant roadways are as follows:

Roadway	Road Segment	ADT (1995 data from the City of Charles Town)	Ldn (at a point 50- feet from the center line of the outer traffic lane)
Old Mine Rd	Corte Serivi to Canyon Estates Drive	2,700	<58 dB(A)
Rt 15	Grape Street to Cottonwood Hills Drive	20,200	68.5 dB(A)

In the above table, ADT levels are for the year 1995 and were obtained from Charles Town. The average-day-night-sound-level (Ldn) was computed using the Federal Highway Administration Noise Model. The noise level (Ldn) weights nighttime noise more severely and, therefore, more closely estimates the potentially adverse effects of the noise. All noise levels are given in decibels (dB) and are A-weighted. "A" weighting is a technique that most closely approximates the sensitivity of the human ear. Generally, noise levels of 65 db(A) or less are considered compatible with residential development.

Traffic on Old Mine Road is greatly restricted in speed due to the slope of the road segment.

Vehicles traveling to the north are restricted by the steepness of the hill while traffic heading south is curtailed by the need to brake and retard speed on the downhill aspect.

The center line of the out land of Rt 15 is located approximately 300 to 350-feet from the nearest unit of Tract 90210. Simple geometric dispersion will result in a reduction in the traffic noise level by at least 6- to 7-dB(A). Units further up in the subdivision will experience even greater reduction in the ambient noise level. This attenuation due to distance alone places all of Tract 90210 outside of the 65-dB(A) contour. As such, the units are not within a noise zone considered adverse to residential units.

G. CULTURAL RESOURCES

Prehistorically, the western reaches of West Highlands were occupied by the Potomac peoples, one of the Bands of the Shenandoah Indians. The native's of the area tended to locate on mostly on steeper sloped lands, generally above the water resources of the Shaughnessy River, it was not anticipated that major cultural resources would be located on West Highlands.

As a part of the Environmental Impact Report prepared for the Charles Town Specific Plan, a comprehensive cultural resources survey was conducted of all of the components of the plan area, including Tract 90210. Two sites of limited resource value were identified, both in other Tract Map areas: one in Tract 20472 and one in Tract 20473. Both of these resources were mitigated by salvage and were catalogued by Scientific Resource Surveys, Inc. as a condition of approval of the West Highland Specific Plan.

In that the Master EIR for the Charles Town City (and the included Tract 90210) included a comprehensive Cultural Resources Survey and mitigation program for the two identified resources, it is concluded that no such resources are found within the bounds of Tract 90210. In that the subject Tract also has been subject to extensive and historical agricultural use, it is unlikely that cultural artifacts could remain within the bounds of the Tract under most any circumstances.

IV. ENVIRONMENTAL CONSEQUENCES

A. BIOLOGICAL RESOURCES

1. Vegetation

a. Proposed Project

The issuance of the requested 10(a) permit will allow West Highlands Estates Limited Partnership to eventually clear and grade 110 lots on the 200-acre tract. Vegetation associated with the hardwood forest, pastures, and fields will be cleared and replaced with landscaping. Select trees from the forest might remain for landscaping purposes, but the forest community will be cleared. A restoration program would be initiated on 15.79-acres adjacent to the Shaughnessy River

riparian habitat.

b. Offsite Mitigation Project

The applicant would site the homes on the south lots toward the front of the lot leaving a 200-foot buffer. Most of this area would remain covered by hardwood forest, connecting to the adjacent Shaughnessy River riparian forest. This alternative increases slightly the loss of hardwood forest relative to the Proposed Project, because restoration will not occur on 15.79 acres.

c. No Project

Barring permit issuance, no construction on the subject 110 lots would occur. Existing vegetation associated with hardwood forests and fields would not be cleared. Continued agriculture with grazing and corn production would continue, which periodically alters local plant species composition in fields. The extent of these changes, however, is insignificant relative to the loss of vegetation by the Proposed Project or Offsite Mitigation Project alternatives.

3. General Wildlife

a. Proposed Action

The proposed project would eventually remove and clear habitat for most all the fauna currently residing on or seasonally using the property. Trees retained for landscaping and other plantings would provide cover for some birds, but no breeding birds are expected except for perhaps the goldfinch. Urban wildlife would remain, but most of the mammalian and herpetofauna would be locally extirpated. The proposed restoration of 15 acres might replace in time some of the habitat for the species. However, restoration projects to date have not produced the same biodiversity component as sampled prior to the disturbance.

The indirect effects of development would further fragment and reduce the block size of remaining wildlife habitat in the rapidly developing area of Jefferson County. Also, the riparian forest along the Shaughnessy River would be more exposed, with a greater edge effect, reducing habitat for area-sensitive interior breeding birds.

b. Offsite Mitigation Project

Under this alternative, a 200 foot buffer with likely lower quality habitat would remain. Wildlife habitat, mostly forest, in this area would remain connected to the nearby forests along the Shaughnessy River. Most species of the forest fauna would remain on these undeveloped parcels due to continuity of habitat extending into the riparian forest of the Shaughnessy River. Outside of the 200 foot buffer, the habitat would be cleared and converted to residential use, the effects of this alternative are the same as the proposed project.

c. No Project

Under the No Project alternative, there will be no change to the fauna residing on the tract due to residential development.

1. Potomac Highlands Hedgehog

a. Proposed Project

The proposed project would permanently destroy 50.2 acres of occupied hedgehog habitat in hardwood forest on the Tract, with the incidental take of seven hedgehogs. Indirect effects of development and residential use will extend off-site about 200 feet into adjacent habitat along the Shaughnessy River that is occupied by hedgehogs and also provides hedgehog corridors. To reduce this effect, the applicant has proposed to restore approximately 15.79 acres adjacent to the River after the Development has occurred. The current hedgehog population in Jefferson County occurs primarily in eastern and western sectors, connected by suitable corridor habitat along the Shaughnessy River. The West Highlands population of hedgehogs is not viable or self sustaining, nor is it part of a larger potential viable population in the vicinity. However, the West Highland hedgehogs are part of an adjacent larger, vital corridor on the Shaughnessy River than includes occupied habitat.

The loss of habitat for seven individuals on the West Highlands property will not significantly impair or preclude recovery for the species. Survival and recovery depends on habitat protection and management of potentially viable eastern and western populations in Jefferson County, connected by suitable habitat and corridors along the Shaughnessy River.

As described in the HCP, indirect effects into adjacent corridor habitat are minimized by deed restrictions prohibiting free roaming domestic dogs and the control of outdoor lighting. The prohibition of dogs from residences on lots 66 - 108 will minimize potential predation to hedgehogs from these pets roaming into the adjacent Shaughnessy River corridor. Lighting restrictions will prevent the illumination of the same habitat and avoid disturbing normal nocturnal movement and behavior of hedgehogs in the Shaughnessy River corridor and habitat.

In addition, the restoration of 15.79 acres of habitat will also minimize the indirect effects on the corridor. However, the restoration plan is extremely vague in the HCP and the applicant is not proposing monitoring to determine the future success. Even if the restoration is successful, the habitat will not be suitable for the hedgehog for 30 to 50 years.

Information packets attached and recorded to the deeds on conservation objectives and uses of the property will inform residences of the value of the adjacent corridor and restoration area as well as potential adverse disturbances from ATV use, trespass, and other activities. These educational materials do not guarantee that residents absolutely will not trespass or engage in any potentially disturbing activity to hedgehogs and habitat in the adjacent Shaughnessy River corridor. The information is reasonably expected, however, to reduce potentially disturbing activities.

Furthermore, hedgehog movement through the forested corridor will be predominately at night, when potentially adverse trespass or other disturbing activities from these residents is not likely.

To mitigate for the impacts of incidental take of seven hedgehogs, the applicant will purchase sufficient mitigation credits and acreage prior to construction to support at least seven adults. This mitigation will be directed to the West Hills Mitigation Bank, which is in the process of being established on 1,000 acres. Surveys by the Bank have documented at least 25 breeding pairs of hedgehogs at this site in the western part of Jefferson County. The Bank population is strategically located to provide a stable, western core hedgehog population with perpetual conservation management, consistent with regional hedgehog conservation planning in Jefferson County. The hedgehog population is not at an estimated carrying capacity in the hardwood forests at the Bank. With continued management and protection of unoccupied habitat, the hedgehog population is expected to increase. The purchase of 69 mitigation credits (acres) and restoration of 15.79 acres by West Highlands, at a 2:1 ratio for the destruction of 50.2 acres of occupied habitat.

Without the West Hills Bank and perpetual protection, parts of the bank site unoccupied by hedgehogs could have been potentially developed in the future. Such development would have further fragmented occupied hedgehog habitat. Mitigation for the incidental take seven hedgehogs at this site will contribute to the long term survival and recovery of the species in Jefferson County.

Mitigation includes a sufficient \$138,000 Bank endowment to fund management for the three breeding pair. The invested endowment will generate annual funding for the control of invasive weeds, predators, management to maintain an open hardwood forest, and hedgehog monitoring. An additional endowment of \$34,000 will fund recovery activities by the Bank in Jefferson County, which can include habitat acquisition, further conservation planning, hedgehog surveys, and other tasks as recognized in included in the hedgehog recovery plan.

b. Offsite Mitigation Project

Many of the effects to the hedgehog are similar to the proposed project alternative. Ultimately, the proposed project would permanently destroy 50.2 acres of occupied hedgehog habitat in hardwood forest on the Tract, with the incidental take of seven hedgehogs. Indirect effects of development and residential use will extend off-site about 200 feet into adjacent habitat along the Shaughnessy River that is occupied by hedgehogs and also provides hedgehog corridors.

This alternative, however, would use the funding currently proposed for restoration, to provide more habitat in a viable location. The indirect effects will still be minimized by moving the houses to the front of the lots and leaving some of the old growth stands behind as a buffer. Since old growth habitat is preferred by the hedgehogs, this alternative seems to provide a better buffer from the development.

This alternative would consist of the proposed project mitigation but purchasing 151 hedgehog

credits (acres) within the West Hills Mitigation Bank and fund an additional endowment at \$377,500 (\$2,500/acre). Eighty percent of the endowment (\$302,000) is for mitigation management and monitoring and the remainder (\$75,500) is for other Potomac Highlands hedgehog emergency and recovery projects by the Banks in Jefferson County.

c. No action

Currently the agriculture production on the property is not limiting minor use by hedgehogs in the forest areas. However, long-term use of pesticides on this tract may preclude the use in the future. The agriculture production may switch to organic farming practices in the future but there is not guarantee.

The biggest loss to implementing the no action alternative is that the hedgerows proposed by the applicant would not proceed. While these hedgerows would only allow limited dispersal to the north for a short amount of time, new studies suggest that the limited genetic exchange is needed. Until such time as the regional plan can restore and provide more dispersal opportunities, some dispersal will improve the chances of the species surviving. The Service expects that the hedgerows provided on this property will be replaced with other dispersal opportunities in the future

B. TRAFFIC

a. Proposed Project

The traffic impacts associated with the Development HCP as proposed are those derived from the development and use of 110 single family residences. The Charles Town Specific Plan Environmental Impact Report (EIR) assessed traffic management and impacts of the development action. These 110 residences would generate approximately 1,100 average daily trips (ADT) according to a standard trip generation rate of 10 trips per single family residence. These additional 1,100 trips would have no adverse impacts on surrounding roadways, by definition, as those roadways were planned and built specifically to accommodate Tract 90210's (and neighboring subdivision's) traffic — as per the Charles Town General Plan which encompasses Tract 90210. For example, Old Mine Road, a four-lane major road has a maximum capacity of approximately 37,500 ADT (24 hour period). There is currently an ADT of only 3,200 on the segment of Summerhill Drive between Canyon Estates Drive and Rt. 15. Clearly the addition of 1,100 additional trips will still allow the road segment to operate well below capacity.

b. Offsite Mitigation Project

This alternative would be the same as the proposed project alternative.

c. No Project

Under the No Project scenario, there would be no increase in the average daily traffic from current levels since no residences would be constructed.

C. AIR QUALITY

a. Proposed Project

The HCP and associated 10(a)-Permit, if approved, would allow the residential development and subsequent use on 110 lots in the West Highland tract. The air quality impacts associated with the construction and occupation of these homes are already planned, and mitigated by definition, under the November 27, 1990, adopted City of Charles Town General Plan. A specific air quality Mitigation Monitoring Program with construction project controls was adopted by the City of Charles Town in 1995. Further, area air quality standards are planned and managed by the Jefferson County Air Quality Management District (JCAQMD). Therefore, no air quality impacts are expected to occur as a result of the development HCP as proposed.

b. Offsite Mitigation Project

Since the Development HCP as proposed will have no negative impact on area air quality, this Offsite Mitigation Project, will also have no negative impact.

c. No Project

Under the No Project scenario, real estate development and subsequent use will not occur on lots owned by West Highlands Estates Limited Partnership within Tract 90210. Any air quality impacts associated with the proposed project would be eliminated under the No Project alternative. However, the Development HCP as proposed will have no negative impacts and the two alternatives; therefore, the difference in effects to air quality between the two alternatives is negligible.

D. NOISE

a. Proposed Project

Charles Town Tract 90210 was originally approved as a residential subdivision over ten years ago. Project environmental documentation (including the Charles Town Specific Plan Environmental Impact Report) was produced under the direction of that municipality. Approximately ten years after the initial approval, in 1998, West Highlands Estates Limited Partnership purchased Tract 90210 after Charles Town indicated that all environmental issues (traffic, air quality, noise, cumulative effects, etc.) were satisfactorily resolved with the completion of those environmental documents.

Noise impacts associated with the construction and occupation of 110 lots in the Development HCP as proposed are considered negligible as: there are no sensitive receptors in the area (residential and open space land uses surround the site in all directions); and as the subject residential project was included in the Noise section of the Charles Town General Plan adopted in 1990. That document takes the project into account and finds it in to be in accordance with area noise standards.

b. Offsite Mitigation Project

As discussed above, the Development HCP as proposed is not expected to negatively impact the community noise environment, as included in the Noise Element of the Charles Town General Plan, the same is true for the Offsite Mitigation Project alternative.

c. No Project

Under the No Project scenario, no real estate development would occur and no noise associated with such development would be generated. Baseline noise from current agricultural operations would continue, which would be less than that by either the Offsite Mitigation or proposed project.

However, this is not considered a preservation-action as no sensitive noise receptors are near the site and since the Development HCP as proposed poses no significant noise source to the project environment.

E. CULTURAL RESOURCES

a. Proposed Project

As a part of the Environmental Impact Report prepared for the Charles Town Specific Plan, a comprehensive cultural resources survey was conducted of all of the components of the plan area, including Tract 90210. No cultural resources occurred on this tract. Proposed development will have no effect on cultural resources.

b. Offsite Mitigation Project

The effect is the same as the proposed project.

c. No Project

No impacts will occur since no cultural resources are known on the tract.

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V. REFERENCES

- Braden, G.T., R.L. McKernan, and S.M. Powell. 1995. Life history of *Erinaceus americanus virginicus* (Potomoc Highlands hedgehog) in western Jefferson County, WV. Unpublished abstract from Potomoc Highlands '95: Symposium on the Biology of the Potomoc Highlands Hedgehog, University of West Virginia, September 15-16, 1995.
- Charles Town, City of. 1988. West Highlands Specific Plan. The Author.
- Charles Town, City of. 1988. West Highlands Specific Plan Environmental Impact Report.
- Charles Town, City of. 1990. City of Charles Town General Plan. Adopted 27 November, 1990. The Author.
- Charles Town, City of. 1995. City of Charles Town General Plan — Mitigation Monitoring Program. General Plan Amendment, Adopted 1995. The Author.
- Thomas Leslie & Associates. Findings of Seven Focused Potomoc Highlands Hedgehog Surveys Conducted Within the Boundaries of Portions of Tract Nos. 25472, 3, (Phase III and IV) 4, and 5 Charles Town. Letter report dated December 14, 1998. To U.S. Fish and Wildlife Service, West Virginia Field Office.
- U.S. Fish and Wildlife Service, 1997. Surveys for Listed, Proposed and Sensitive Species on Selected Federally Owned parcels in western Jefferson County, WV. Draft Report on file in the West Virginia Field Office, USFWS.
- U.S. Fish and Wildlife Service, 1998. Letter to Theodore Phillips, Esq. regarding West Highland Estates, Charles Town Specific Plan, Charles Town, Jefferson County, dated December 18, 1998.