

# **Conservation Subdivision Development Guidelines for Participation in the Lost Pines Habitat Conservation Plan**

## **1.0 Introduction**

The purpose of these guidelines is to provide a framework for the planning and development of new subdivisions in the Lost Pines Habitat Conservation Plan (LPHCP) permit area (**Plan Area**) that promotes land development and human uses that are compatible with the conservation of the endangered Houston toad (*Bufo houstonensis*)<sup>1</sup>. These guidelines apply only to subdivision developments for which incidental take authorization is sought under the LPHCP. Participation in the LPHCP and adherence to these guidelines is strictly voluntary; however, in order to obtain incidental take authorization under the LPHCP, new developments will have to be designed, constructed, and operated in accordance with these guidelines. All new subdivision developments must still conform to all other applicable subdivision regulations of Bastrop County and other jurisdictions.

The opportunity to participate in the LPHCP through the use of these subdivision development guidelines is intended to encourage new subdivision developments that protect and maintain Houston toad habitat. Conservation subdivisions, as defined by these guidelines, include low density, large-lot developments and higher density, clustered developments. Clustered developments can include a mix of single-family residential and multi-family residential (including condominiums and apartments). Further, residents of conservation subdivisions may use and enjoy habitat protected and managed for the Houston toad, provided that such use is compatible with the conservation of the species.

### **1.1 Long Term Benefits For The Houston Toad**

The Houston toad depends on healthy and mature forest ecosystems with mixed species composition, moderate canopy cover, an open understory layer with a herbaceous component, and shaded breeding pools. See Section 3.4 of LPHCP. Unmanaged forests and forests that sustain other types of land uses, such as residential, recreational, or agricultural activities, can become less suitable as Houston toad habitat over time. Without active management, forests can become too dense and shaded, accumulate dangerous levels of

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<sup>1</sup> Technical terms are identified in bold type at the first use of the term, and are defined in Section 10.0 (Definitions).

flammable duff and debris, and be negatively impacted by cattle, pollutants, and vehicles. These and other changes may reduce the ability of forest ecosystems to provide quality Houston toad habitat by altering the toad's food base and competitive environment, increasing the risk of catastrophic fires that could destroy large blocks of habitat, and reducing Houston toad reproductive success. Active management of existing forests and reducing negative impacts from various types of land uses within, and adjacent, to forested areas is essential to the long-term sustainability of Houston toad habitat in the Plan Area.

The LPHCP identifies the characteristics of suitable Houston toad habitat and provides the guidance, the mechanism, and the incentive for individual property owners to develop and sustain healthy and mature forests on their property. However, many common land management activities have the potential to negatively impact Houston toads in the short-term, such as using equipment to remove brush or thin forest stands, implementing prescribed burns to manipulate forest vegetation and prevent large forest fires, and using chemicals to help control non-native or invasive wildlife or plants. The guidelines presented in the LPHCP provide specific guidance for avoiding and minimizing short-term negative impacts to Houston toads resulting from common management practices in, and adjacent to, forest habitat.

The guidelines prepared under the LPHCP are the primary focus of the LPHCP conservation program. The guidelines are voluntary and designed to be compatible with local attitudes and views towards land management and property ownership, regardless of whether a landowner is seeking authorization for incidental take. This approach seeks to remove as many barriers as possible to long-term planning and management with regard to forest habitat. The development, distribution, and promotion of these guidelines throughout the community is the County's maximum practicable effort to avoid and minimize negative impacts to the Houston toad from management activities, while still being able to realize the long-term benefits of managing for healthy and mature forests.

Some of the anticipated benefits of conservation subdivisions include:

1. Protecting areas of Houston toad habitat within the Plan Area;
2. Creating continuous protected habitat areas within communities and connections to adjacent areas of habitat to help preserve the connectivity of the landscape;
3. Promoting environmentally sensitive and economic uses of the land;
4. Promoting education about endangered species conservation and management;
5. Providing opportunities for low-impact recreation within communities; and
6. Conserving the scenic and aesthetic value of the Lost Pines ecosystem.

Recent research shows that occupied Houston toad habitat can co-exist with low density residential development (Forstner 2002) . The most desirable physical characteristic of the Plan Area for residential development is the forest.

Permitting low density residential subdivisions that comply with this set of guideline provides an alternative long-term economic use of forested areas that will preserve significant portions of existing forests and toad habitat. The design criteria in this guidance for riparian area set-backs will preserve the connectivity between isolated toad breeding locations. Additionally, the 200 foot (61.0 meters) setback in these guidelines is greater than those in the other LPHCP land management guidelines because the construction of roads, laying foundations, and installation of yard vegetation will cause permanent toad habitat loss. The activities allowed under the land management guidelines for agriculture, forestry, and wildlife do not cause permanent habitat loss and do generate long term improvements to existing toad habitat. The greater setbacks in these guidelines mitigate for the permanent habitat loss.

Finally, placing habitat management responsibilities on individual lot owners or property owner associations is expected, on average, to generate a higher level of interest, resources, and activity than occurs with publicly owned preserves. See Section 1.0 of the LPHCP. The LPHCP will utilize the local values of “taking responsibility for the land.” Recent efforts to construct new toad ponds in existing low density residential developments have received high levels of interest from home owners. On-going management of forested areas is critical for sustaining toad habitat.

Given the explosive reproductive characteristics of the Houston toad, the creation of even a few new ponds in protected areas could result in significant increases in the Houston toad population in a few years. The first toad pond constructed in 2002 within the Circle D subdivision supported toad breeding in its second winter. See Section 3.3 of the LPHCP.

These guidelines include specific guidance for lot/dwelling unit density, habitat protection, infrastructure design and construction, and restrictive covenants. They incorporate principles of conservation subdivision design and are based, in part, on model conservation subdivision ordinances developed for communities in Texas, Georgia, Minnesota, and Wisconsin (Capitol Area Planning Council 2002, Minnesota Environmental Quality Board 2000, Ohm et al. 2000, Southeastern Wisconsin Regional Planning Commission 2002, Wenger and Fowler 2000). Subdivision applicants are strongly encouraged to become familiar with the principles of conservation subdivisions prior to initiating the subdivision design process (see Arendt 1996). Additionally, subdivision applicants are strongly urged to retain qualified environmental consultants and engineers in the design of subdivisions that meet these guidelines. Information contained in these and similar publications can assist the subdivision applicant with designing and constructing a

successful project. All requirements specific to conservation subdivisions under the LPHCP are included in these guidelines. Following these guidelines will result in a development that avoids or minimizes impacts on the Houston toad and mitigates for unavoidable impacts by protecting habitat within the subdivision.

## **2.0 Subdivision Procedures**

Except as noted in these guidelines, the submittal of a subdivision application and the review and approval of the subdivision plat by the County of Bastrop will conform to standard procedures and requirements of the County of Bastrop. Subdivision Applicants proposing a Conservation Subdivision that meets the requirements of these guidelines and of the LPHCP must design the subdivision based on the location of the physical and biological features identified in the Natural Resources Inventory (NRI) for the property to be subdivided.

### **2.1 Natural Resources Inventory**

The NRI must identify the important natural resources on the site that relate to Houston toad habitat, such as potential breeding sites, upland forest cover, and adjacent habitat. The subdivision applicant must obtain his or her own permission from adjoining landowners. Subdivision applicants are encouraged to obtain the assistance of qualified environmental consultants to prepare the NRI. For more information regarding Houston toad habitat characteristics, see Section 2.1.1 of this guideline or contact the LPHCP Administrator. The NRI must describe the topography, soils, geology, floodplains, permanent and intermittent hydrologic features (including wetlands defined under federal law), and vegetation communities on the site of the proposed development. The NRI must include a map (or maps) showing the location and extent of these natural features as well as primary and secondary habitat areas. The map or maps must be prepared and sealed by a registered professional surveyor.

#### **2.1.1 Primary and Secondary Habitat Defined**

The terms “primary habitat” and “secondary habitat” are intended only for purposes of designing conservation subdivisions and have no other applicability in the LPHCP. High-quality Houston toad habitat is characterized by treed cover (either continuous, closed-canopy forest, or open woodlands with an understory of native bunch grasses) within 200 feet of potential breeding sites (particularly ephemeral ponds and drainages with a treed edge). Closed canopy forests with an herbaceous understory are preferred to reduce competition with other toads (e.g., Woodhouse’s toad (*B. woodhousii*) and the Gulf Coast toad (*B. valliceps*) and foster production of insects and arthropods eaten by Houston toads. Further, good habitat should be relatively free from red imported fire ants (*Solenopsis invicta*) and

barriers to dispersal. Barriers to dispersal include open-canopy vegetation with non-native grasses (e.g., Bermuda grass (*Cynodon dactylon*), bahia grass (*Paspalum notatum*), and similar species), cultivated land, roads (paved or unpaved), and buildings.

Primary habitat areas include:

1. The 100-year floodplain, as designated by the Federal Emergency Management Agency (FEMA), or buffer zones of at least 200 feet from both sides of the centerline of all perennial or intermittent waterways with a watershed greater than 64 acres (26 hectares), whichever is greater; and
2. Permanent or ephemeral wetlands or ponds existing prior to development, as designated on National Wetland Inventory (NWI) maps or meeting the criteria for wetlands under the U. S. Army Corps of Engineers (USCE) wetland delineation manual (USCE 1987), and a buffer zone of at least 200 feet around the maximum pool height of these features.

For the purposes of protecting Houston toad habitat, secondary habitat areas are principally described as forested land cover (particularly large, contiguous blocks of forest cover) over deep sandy soils. Secondary conservation areas are important habitat features for the Houston toad that should be included in the protected area to the maximum extent practicable. However, these features are generally too abundant on the landscape to warrant complete mandatory protection.

## **2.2 Pre-Application Conference**

A Conceptual Plan must be prepared for all proposed conservation subdivisions for review during the Pre-application Conference described in Section 3.5.1 of the County of Bastrop Subdivision Regulations. Applicants are encouraged to prepare a NRI for the Pre-application Conference to identify areas of primary and secondary habitat. One of the purposes of the Conceptual Plan is to design the layout of lots, streets, and other infrastructure to avoid and minimize, to the maximum extent practicable, negative impacts to the Houston toad. The County will make a collection of spatial data related to Houston toad management available to subdivision applicants to help identify important conservation features; however, preparation of the NRI is the applicant's responsibility, not the County's.

## **2.3 Preliminary Plan and Final Plat Submittal**

A complete NRI must be submitted with the Preliminary Plan for a proposed conservation subdivision. However, the subdivision applicant is encouraged to prepare the NRI earlier in the subdivision design process and to submit the NRI at the time of the Pre-application Conference. The NRI, Conceptual Plan, and Pre-application Conference are also

required for proposed conservation subdivisions seeking approval through the short form procedure for Final Plats (Section 4.0 of the County of Bastrop Subdivision Regulations).

The Final Plat, Preliminary Plan, and NRI must identify primary and secondary Houston toad habitat features within the proposed subdivision (see Section 4.0). Unless a variance pursuant to Section 8.0 of this guideline has been obtained, all primary habitat areas shall be designated as Conservation Areas on the Preliminary Plan and Final Plat (see Section 3.2 of these Guidelines for higher density, clustered subdivisions). Except as permitted by the Conservation Area Management Plan approved for the proposed subdivision, all primary habitat areas shall be restricted by a plat note from any clearing or Development activities, including septic systems. The Preliminary Plan and Final Plat must also be consistent with all other requirements in Section 3.5.2(A) and Section 3.6.2 of the County of Bastrop Subdivision Regulations.

For phased or master planned developments, which are allowed under these guidelines, each phase for which incidental take authorization is sought must meet all the provisions of these guidelines at the time the phase is platted (e.g., the subdivision applicant must identify and protect sufficient Houston toad habitat to balance the proposed development activities in each phase of the project where incidental take authorization is sought). The subdivision applicant may plan for a development that includes phases for which incidental take authorization is not sought or required by federal law. Phases for which incidental take authorization is not sought need not comply with these guidelines.

The Conservation Area Management Plan (Section 4.0 of these Guidelines) and Restrictive Covenants (Section 6.0 of these Guidelines) must be approved by the County of Bastrop in conjunction with the final plat and both must be recorded concurrently with the final plat. Any change to the FEMA floodplain on the property being subdivided that occurs after the approval of the Preliminary Plan will not affect the Primary Habitat areas shown on the approved preliminary plan or on the recorded final plat.

### **3.0 Subdivision Design Options**

Subdivision applicants have two primary options for the design and construction of subdivisions eligible for incidental take coverage under the LPHCP (other options may be pursued via the process described in Section 8.0 for special situations): low density, large-lot designs and higher density, clustered designs. Small-scale commercial uses, such as retail and office, are allowed within all subdivision design options:

Low density, large-lot designs for subdivisions incorporate Houston toad Conservation Areas into individual lots and place the responsibility of habitat management on individual landowners. Landowners within low density, large-lot conservation

subdivisions then have the opportunity to use and enjoy individually owned Conservation Areas.

Higher density subdivision designs that may include single-family residential and multi-family residential uses (including condominiums and apartments) are allowed for subdivisions with a clustered design. The Conservation Areas in higher density, clustered subdivisions are set-aside in large blocks and may be open to the residents of the subdivision and their guests for low-impact, recreational uses. The Property Owner's Associations of clustered conservation subdivisions are responsible for the management and protection of the dedicated Conservation Areas.

The approval and recording of a subdivision plat that complies with these guidelines is the first phase of compliance with the LPHCP. The construction of the subdivision, and of the individual homes, and the on-going operation of the development area and Conservation Areas are all necessary to maintain incidental take authorization under the LPHCP.

### **3.1 Conservation Area Low Density, Large-Lot Design Option**

Subdivision applicants seeking incidental take authorization under the LPHCP may follow the guidelines below for low density, large-lot subdivisions. Design specifications for this type of conservation subdivision shall include each of the following provisions:

1. Single-family residential uses, which may include home businesses, and small-scale commercial uses are allowed. This design option is not applicable for proposed subdivisions that include multi-family uses because of the higher intensity of human use.
2. The average lot size must be at least 5 acres (2.0 hectares) per lot. The minimum lot size must be at least 3 acres (1.2 hectares) per lot.
3. Each lot shall be allowed to have up to 20 percent of its acreage used for development purposes, ("referred to as the development area"), such that:
  - a. The development area must include the area of all buildings, impervious surfaces (concrete, asphalt), lawns, gardens, decks, septic systems, and similar improvements associated with intensive human use of the property;
  - b. Unpaved driveways or trails (dirt or gravel) on individual lots shall be allowed to be located outside of the development area, if they are no greater than 16 feet (4.9 meters) wide, including any openings in the forest canopy created as a result of vegetation clearing for the driveway or trail. Residents are encouraged to make driveways and trails as narrow as practicable. Trails may occupy no more than 0.5 percent of the total

Conservation Area acreage. A single driveway, no greater than 16 feet wide may be constructed between the public road adjacent to the lot and residential use area that contains the main residence.

- c. The actual size of the development area on each lot must be specified on the Final Plat (in acres or square feet), but it is not necessary to specify the precise location of the development area on the plat; however, unless a variance has been granted pursuant to Section 8.0 of these guidelines, the development area may not include any primary habitat areas;
  - d. The specific location of the development area on a particular lot is at the discretion of the individual landowner. The development area on an individual lot may be in a single block or distributed over multiple areas within the lot. However, landowners may not conduct any development activities within primary habitat areas. Lot owners shall also be encouraged to locate development areas outside of secondary habitat areas, where practicable. The subdivision applicant must delineate primary and secondary habitat areas on the Final Plat of the subdivision, to help lot owners locate these features; and
  - e. The lot owner must submit plans for the construction of any improvements or any development to the Property Owner's Association of the subdivision or the holder of any conservation easement on the property, as applicable, for review to help ensure that developed uses do not exceed 20 percent of the area of the lot. The construction or development plans must be based on an on the ground survey that is sealed by a registered professional surveyor. The lot owner must have a survey of the areas that are to be designated as part of the development area.
  - f. A copy of the plans approved by the Property Owner's Association and a recordable instrument signed by the lot owner designating the development area shall be sent to the LPHCP for recording in the Bastrop County Official Records. A lot owner may record more than one designation of development area so long as the total area so designated does not exceed the total area for the development stated on the recorded final plat for the lot.
4. At least 80 percent of each individual lot must be permanently protected for the benefit of the Houston toad (referred to as the "Conservation Area"), such that:

- a. Conservation Areas shall be permanently protected from activities that would decrease the quality and quantity of Houston toad habitat that was present in the subdivision prior to development;
  - b. Protection shall be achieved by both plat notes and a binding legal instrument that is recorded when the subdivision plat is filed. The instrument of protection must include clear restrictions on the use of the area that protects the conservation value of the area as habitat for the Houston toad. The instrument shall be a permanent conservation easement held by the POA, a land trust, or other entity with the legal authority and capability to accept and enforce such easements, or by permanent covenants designed to protect the conservation value of the area; and,
  - c. The instrument used to protect habitat must identify the entity responsible for enforcement of the conservation agreement or covenants (e.g., the POA or conservation easement holder). The responsible entity must have the authority, obligation, and capability to enforce such agreements or covenants.
  - d. Prior to any construction or development, the area of construction or development must be staked on the ground by a surveyor and otherwise marked so that contractors will know the limits of the development area. Fences that do not impede the movement of Houston toads may be constructed within the Conservation Area. Hand clearing only is allowed in connection with the construction of fences outside of the development use area.
5. The subdivision applicant must submit a management plan for Conservation Areas with the application for final plat approval. The Management Plan must be approved prior to, or in conjunction with, the approval of the Final Plat. The management plan must follow the guidelines in Section 4.0.
  6. Each individual landowner shall be responsible for the management of the Conservation Area contained within his/her lot, in accordance with the management plan for the subdivision or with prior written approval by the Texas Parks and Wildlife Department (TPWD), the County of Bastrop or U.S. Fish and Wildlife Service (Service).
  7. Secondary uses of individual Conservation Areas are permissible, provided they follow the guidelines in Section 4.2.3 that protect the conservation value of these areas for the Houston toad.

8. The amount of area used for subdivision infrastructure (e.g., paved roads, utility corridors, rights-of-way) and community common areas (e.g., playing fields, clubhouses, playscapes) may not exceed ten percent of the total subdivision area. Rights-of-way for streets and utilities may be included in Conservation Areas, provided the Conservation Area management plan specifically addresses the maintenance of such areas to Houston toad habitat standards (**Section 4.2.2**). The design and management of all roadways and utility corridors, including rights-of-way, must follow the guidelines in Section 7.0. Vegetative portions of road rights-of-way may be credited as part of the required Conservation Area as long as they are: (1) clearly designated as such on plans for the subdivision; (2) permanently marked on the ground as a Conservation Area; and, (3) the Conservation Management Plan requires these areas be permanently managed as Conservation Areas.
9. The subdivision applicant must provide evidence to the County of Bastrop that a Property Owner's Association for the conservation subdivision has been legally formed prior to final plat approval. See Section 5.0.
10. Each lot shall be bound by restrictive covenants, in accordance with Section 6.0, to reduce the impact of developed uses of the property on Houston toads.

### **3.2 Higher Density, Clustered Design Option**

A subdivision applicant may opt to pursue a higher density, clustered subdivision design under these guidelines to accommodate multi-family residential use (including condominiums or apartments), in addition to higher density single-family residential uses and small-scale commercial uses. Higher density, clustered conservation subdivisions eligible for incidental take authorization under the LPHCP must meet each of the following criteria:

1. Single-family residential, multi-family residential uses (including condominiums and apartments) and small-scale commercial uses are allowable.
2. All development within the subdivision should be included within a single, contiguous area (referred to as the "developed area") unless superior protection for Houston toad habitat can be demonstrated. The developed area must encompass all residential/commercial lots and the improvements thereon, and all subdivision infrastructure (including roads, utility corridors, rights-of-way, community centers, playing fields, playscapes, etc.).
3. Subdivisions developed under this design option must be at least 20 acres (8.1 hectares) total area (including Conservation Area and developed area).

4. Developed areas may initially include no more than 20 percent of the total area of the subdivision. At the subdivision applicant's option, the developed area may be increased up to 30 percent of the total area of the subdivision by removing land from the Conservation Area, as shown in Table 1, according to the following provisions:
  - a. The intent of this provision is to allow gradual increases in development and housing density as an incentive for good management of Conservation Areas. Increases in development and density are allowable only after Houston toad surveys within the subdivision have shown that previous development did not result in a decrease of Houston toads within the subdivision, relative to overall Houston toad populations in the Plan Area.
  - b. The subdivision applicant may seek increases in development density 5, 10, 20, and/or 30 years from the initial start of construction by submitting to the Service an analysis of Houston toad survey data. This schedule provides four opportunities for the subdivision applicant to increase the amount of development in the subdivision.
  - c. The subdivision applicant must allow for Houston toad population surveys to be conducted annually within the Conservation Area, by a qualified biologist, in accordance with Service guidelines for such surveys. If the developer is seeking additional development density increase under these rules, then he must provide the required population surveys to support the requested increased density.
  - d. When seeking increased density, the subdivision applicant may submit a report of the annual Houston toad survey data, prepared by a qualified biologist to the LPHCP Administrator and the Service that demonstrates the previous development did not result in a decrease of Houston toads within the subdivision, relative to overall Houston toad populations in the Plan Area. The Service shall have 30 days in which to review and either accept or reject the application for increased development.
  - e. Acreage removed from the Conservation Area for additional development must be contiguous with the previously designated developed area within the subdivision and follow all other guidelines applicable to developed areas in this type of subdivision.
  - f. The location of potentially developable portions of the Conservation Area must be indicated on the Final Plat to help ensure that landowners and

residents of the subdivision are aware that these areas may become developed in the future.

5. The maximum density allowable over 30 years is one dwelling unit per 2.5 acres (1.0 hectares) of the total subdivision area, including the Conservation Area. The developed area may initially include no more than one dwelling unit per 1.0 acre (0.4 hectare) of developed area. As an incentive for good management of the Conservation Area, land added to the developed area through the survey review process may include up to one dwelling unit per 0.5 acre (0.2 hectare) of added developed area.
6. No development or alteration of primary habitat areas is allowed other than for habitat management purposes. Protection of secondary habitat areas is encouraged, but development in such areas is allowable.
7. Rights-of-way for utilities may be included in Conservation Areas, provided the Conservation Area management plan specifically addresses the maintenance of such areas to Houston toad habitat standards (Section 4.2.2). The design and management of all vegetative portions of road rights of ways and utility corridors, including rights-of-way, must follow the guidelines in Section 7.0.
8. Land within the subdivision that is not part of the designated developed area shall be protected and managed as habitat for the Houston toad (referred to as the “Conservation Area”), such that:
  - a. The Conservation Area shall initially include 80 percent of the area of the subdivision, but may be reduced to 70 percent of the area of the subdivision over 30 years through the survey review process described above;
  - b. The Conservation Area should be in a single, contiguous block and adjacent to potential Houston toad habitat on adjacent tracts, where practicable;
  - c. The Conservation Area shall be permanently protected from activities that would decrease the quality and quantity of Houston toad habitat that was present in the subdivision prior to development, with the exception of areas that may become open to development after the initial start of construction (no more than ten percent of the total subdivision). See Table 1 below;
  - d. Permanent protection shall be achieved by a binding legal instrument that is recorded when the subdivision plat is recorded. The instrument of protection must include clear restrictions on the use of the area that

protects the conservation value of the area as habitat for the Houston toad. The instrument shall be either (1) a permanent conservation easement held by either the POA, a land trust, or other entity with the legal authority and capability to accept and enforce such easements; or, (2) by permanent covenants designed to protect the conservation value of the protected habitat;

- e. The instrument used to protect habitat must identify the entity responsible for enforcement of the conservation agreement or covenants (e.g., the development owner, POA or conservation easement holder). The responsible entity must also have the authority, obligation, and capability to enforce such agreements or covenants; and
  - f. Conservation Areas that may be opened to development after the initial start of construction must be managed similarly to the permanently protected Conservation Area until development of these areas is authorized;
9. The subdivision applicant must submit a management plan for the Conservation Area for approval by the LPHCP Administrator prior to the start of construction. The management plan must follow the guidelines in Section 4.0. See Table 1 below.
  10. The subdivision applicant must fence the perimeter of all primary habitat areas within the Conservation Area (both permanently protected and potentially developable areas) to limit access and use by humans other than for maintenance, management, or scientific purposes. Fencing shall not impede the movement of Houston toads.
  11. The development owner or Property Owner's Association shall be responsible for the management of the Conservation Area, in accordance with the management plan for the subdivision.
  12. Seasonal, recreational use of the Conservation Area by subdivision residents is permissible, according to the guidelines in Section 4.2.3 that protect the conservation value of these areas for the Houston toad.

**Table 1. Schedule of Development Incentives (Years) and Relative Size of Developed and Conservation Areas in Higher Density, Clustered Subdivisions (as a Percentage of the Total Subdivision Acreage).**

<b>Time After Start of Initial Construction</b>	<b>Available Increase In Developed Area</b>	<b>Maximum Size of Developed Area</b>	<b>Minimum Size of Conservation Area</b>
5 years	2.5 %	22.5 %	77.5 %
10 years	2.5 %	25 %	75 %
20 years	2.5 %	27.5 %	72.5 %
30 years	2.5 %	30 %	70 %

## **4.0 Management of Conservation Areas**

The protection and management of Houston toad habitat within a conservation subdivision, combined with the covenants placed on individual lots and developed areas, mitigates for the direct and indirect incidental take and associated negative impacts that are likely to result from subdivision development in Houston toad habitat. Areas to be protected will be based on the NRI and this guideline. Forested land cover is particularly important to the Houston toad, especially those areas surrounding potential breeding sites (e.g., permanent or temporary ponds, wetlands, creeks, and similar features). These potential breeding sites, the surrounding forested land cover, and adjacent upland habitats that are potential habitat for the Houston toad should constitute the majority of the land in the Conservation Area.

Primary habitat areas are features within the proposed subdivision that were in existence prior to subdivision development (e.g., not constructed as part of the management program for the Conservation Area) and are potential breeding habitat for the Houston toad. Primary habitat areas may not be altered by development, unless approved by the LPHCP Administrator pursuant to Section 8.0.

Notwithstanding the above requirements for protection of primary habitat, if a subdivision applicant's property possesses a unique characteristic not covered by the above requirements, that applicant is encouraged to apply for a variance, as described in Section 8.0. In no event shall the above requirements preclude property from being subdivided to achieve the density of one lot per 5 acres unless, after the issuance of the incidental take permit for the LPHCP, and prior to the submittal of a subdivision application, the County of Bastrop determines that the property has been subdivided in a manner inconsistent with these guidelines. For example, prior to filing an application for a subdivision plat, the landowner sells the toad habitat areas adjacent to creeks or other breeding locale apart from land not

adjacent to water management zones. The County will grant applicants whose property could not be developed without a variance special consideration (e.g., property that can only be accessed by crossing a floodplain). In such cases, the LPHCP Administrator may require reasonable accommodations for the Houston toad (e.g., toad tunnels under roadways). The applicant must also demonstrate compliance with other applicable regulations such as a Section 404 permit for crossing any waterways.

#### **4.1 Use of Conservation Areas**

The primary use of Conservation Areas is the conservation and management of the Houston toad. Wildlife habitat management activities, include fuel loading management, should be conducted within the Conservation Areas, as appropriate, to maintain or improve Houston toad habitat consistent with the goals, objectives, and management practices described in the Conservation Area Management Plan (see Section 4.2.2) and in the Wildlife Management Guidelines attached as Appendix F to the LPHCP..

Low-impact, secondary uses of Conservation Areas by residents of the subdivision and their guests may be allowed, provided the use does not substantially interfere with the maintenance of quality Houston toad habitat. Conservation Areas within either type of conservation subdivision shall not be open for public use. Golf courses, playing fields, managed turf or landscaping, parking lots, and similar areas with manicured vegetation or impervious cover are not considered low-impact land uses and are not allowed in the Conservation Areas of either type of subdivision. The vegetative portions of road and utility rights-of-ways may be designated within a Conservation Area as long as they are designated, designed, constructed, and maintained as Conservation Areas.

In low density, large-lot subdivisions, allowable secondary uses of Conservation Area may include:

1. Low-impact recreational activities, such as walking, jogging, bicycling, and horseback riding (see Section 4.2.3);
2. Seasonal, light grazing by cattle or other livestock following the management standards in the Lost Pines HCP Agricultural Management Guidelines in Appendix D, including the guidelines for livestock use of stock ponds;
3. Wildlife management practices adhering to the standards in the Wildlife Management Guidelines in Appendix F; and
4. Forest management practices adhering to the standards in the Lost Pines HCP Forest Management Guidelines in Appendix E.

Allowable secondary uses of Conservation Areas in higher density, clustered subdivisions are limited to low-impact recreational activities (see Section 4.2.3). However,

these recreational uses may not be conducted during the emergence period of the Houston toad (March 1 through June 30 of each year).

In either type of subdivision, the Conservation Area may be used for native plant gardens, containing only those plant species native to the Post Oak Savannah region (see Hatch et al. 1990) and maintenance of such areas. Native plant gardens should be informal and naturalistic, and should not be groomed to the extent they would interfere with the Conservation Area as habitat for the Houston toad. Additionally, ponds may be constructed in the Conservation Area as long as they are designed to provide additional breeding habitat for the Houston toad, in conformance with the LPHCP guidelines for wildlife management. Toad Pond construction must be authorized by the LPHCP Administrator after consultation with the Service.

**Post Oak Savannah Region: Vascular Plants**

**Table 2.**

<b>Family</b>	<b>Species</b>
Poaceae	<i>Aristida basiramea</i>
Poaceae	<i>Bromus macrostachys</i>
Poaceae	<i>Dichanthelium scabriusculum</i>
Poaceae	<i>Eragrostis airoides</i>
Poaceae	<i>Eustachys retusa</i>
Poaceae	<i>Eustachys caribaea</i>
Poaceae	<i>Hilaria belangeri</i>
Poaceae	<i>Panicum flexile</i>
Poaceae	<i>Paspalum malacophyllum</i>
Poaceae	<i>Paspalum separatum</i>
Cyperaceae	<i>Carex comosa</i>
Cyperaceae	<i>Carex davisii</i>
Cyperaceae	<i>Dulichium arundinaceum</i>
Cyperaceae	<i>Eleocharis Vivipara</i>
Cyperaceae	<i>Rhynchospora gracilentia</i>
Cyperaceae	<i>Scleria ciliata var. glabra</i>
Lemnaceae	<i>Lemna obscura</i>
Liliaceae	<i>Yucca louisianensis</i>
Dioscoreaceae	<i>Dioscorea quaternata</i>

Iridaceae	<i>Nemastylis nuttallii</i>
Orchidaceae	<i>Spiranthes parksii</i>
Chenopodiaceae	<i>Salsola iberica</i>
Amaranthaceae	<i>Alternanthera caracasana</i>
Nyctaginaceae	<i>Abronia macrocarpa</i>
Phytolaccaceae	<i>Agdestis clematidea</i>
Aizoaceae	<i>Glinus lotoides</i>
Ranunculaceae	<i>Delphinium carolinianum</i> ssp. <i>pendardii</i>
Ranunculaceae	<i>Thalictrum arkansanum</i>
Brassicaceae	<i>Lesquerella angustifolia</i>
Brassicaceae	<i>Lesquerella gracilis</i> ssp. <i>nuttallii</i>
Saxifragaceae	<i>Philadelphus pubescens</i>
Fabaceae	<i>Arachis hypogea</i>
Fabaceae	<i>Astragalus crassicaarpus</i> var. <i>trichocalyx</i>
Fabaceae	<i>Desmodium paniculatum</i> var. <i>epetiolatum</i>
Fabaceae	<i>Lathyrus venosus</i> var. <i>intonusus</i>
Fabaceae	<i>Lotus corniculatus</i>
Fabaceae	<i>Robinia hispida</i>
Sapindaceae	<i>Koelreuteria paniculata</i>
Onagraceae	<i>Oenothera elata</i> ssp. <i>tecensis</i>
Ericaceae	<i>Ipomoea quamoclit</i>
Cuscutaceae	<i>Cuscuta coryli</i>
Cuscutaceae	<i>Cuscuta gronovii</i> var. <i>latiflora</i>
Hydrophyllaceae	<i>Phacelia congesta</i>
Verbenaceae	<i>Verbena canescens</i> var. <i>canescens</i>
Verbenaceae	<i>Verbena plicata</i> var. <i>plicata</i>
Verbenaceae	<i>Vitex negundo</i> var. <i>heterophylla</i>
Acanthaceae	<i>Ruellia humilis</i> var. <i>frondosa</i>
Valerianaceae	<i>Valerianella florifera</i>
Asteraceae	<i>Ambrosia bidentata</i>
Asteraceae	<i>Aphanostephus riddellii</i>
Asteraceae	<i>Berlandiera x betonicifolia</i>
Asteraceae	<i>Eupatorium altissimum</i>

Asteraceae	Gaillardia suavis
Asteraceae	Liatris cymosa
Asteraceae	Pyrrhopappus grandiflorus
Asteraceae	Rudbeckia triloba

## **4.2 Management Standards**

Management standards for Conservation Areas are designed to protect the conservation value of these areas for the Houston toad.

### **4.2.1 Conservation Area Management Plan**

The subdivision applicant must submit a management plan for the Conservation Area at the time of filing the application for final plat approval. The Conservation Area Management Plan must be approved prior to the recording of the subdivision plat. The restrictive covenants applicable to the subdivision plat must make reference to, and incorporate, the Conservation Area Management Plan, and require compliance. The Conservation Area Management Plan may be amended from time to time. The County of Bastrop will require that the Subdivision Applicant record the Conservation Area Management Plan. A qualified environmental consultant must prepare the Management Plan. The goals of management activities shall be to create and maintain as much quality habitat for the Houston toad in the Conservation Areas as is practicable and minimize any negative impacts to the toad from compatible secondary uses. To accomplish these goals, the Management Plan must identify management practices and an appropriate schedule for implementation that work towards creating conditions consistent with the management standards for Conservation Areas identified in the following sections. The Conservation Area Management Plan must also address the minimization of impacts from any utilities crossing through the Conservation Area of the subdivision.

Updates to the Conservation Area Management Plan are permissible and encouraged by the subdivision applicant, his/her successors, the Property Owner's Association, or individual landowners, with the assistance of a qualified biologist. The County of Bastrop shall retain the right to amend a Conservation Area Management Plan pursuant to the adaptive management section of the LPHCP (Section 7.3). It is anticipated that new scientific information will result in refinements to management actions, requiring revisions to Management Plans. It is the intention of these guidelines to facilitate incorporation of new management strategies into all relevant management plans, with a minimal development cost. If applicable, updates approved as a component of one Management Plan may be included in other management plans, at the request of the management entity (POA or conservation easement holder). Periodic updates to the Management Plan will help incorporate new

information on the management of the Houston toad as it becomes available. The LPHCP Administrator must review and approve all modifications to a previously approved Conservation Area Management Plan prior to implementation.

#### **4.2.2 Houston Toad Habitat Standards**

Conservation Areas should be managed to create or maintain a vegetative community consistent with high-quality Houston toad habitat (see Section 3.0 of the LPHCP). Landowners, POA's, and other managing entities, as applicable, are encouraged to restore marginal Houston toad habitat (e.g., open pastures, old croplands, etc.) in the Conservation Area to a loblolly pine woodland/forest vegetative community. The management plan for the Conservation Area should include easy-to-use guidelines for the restoration of these areas. Management practices used within Conservation Areas must conform to either the Forestry Management Guidelines in Appendix E or the Wildlife Management Guidelines in Appendix F of the LPHCP.

#### **4.2.3 Management of Secondary Uses**

##### **Recreational Uses**

Low-impact recreational uses of Conservation Areas are allowable and include hiking, jogging, bicycling, horseback riding, and similar activities. The recreational use of motorized vehicles, such as dirt bikes, all-terrain vehicles, and other off-road vehicles is not allowed within Conservation Areas, whether individually or commonly owned. The use of vehicles on designated trails or to aid with the management and maintenance of the Conservation Areas is allowable, but soil disturbance from such motorized vehicles must be minimized to the greatest extent practicable, including keeping vehicles on access roads or trails as much as practicable in keeping with the goal of managing and maintaining the Conservation Area. To avoid unnecessary damage to the Conservation Area, vehicle use should be avoided during wet weather. This does not preclude the use of vehicles and machinery, as allowed in the agricultural, forest, or wildlife management guidelines of the LPHCP.

For Conservation Areas within higher density, clustered subdivisions, access to the Conservation Area must be limited to residents and guests accompanied by a resident. Recreational use should be limited to designated, unpaved trails less than 16 feet wide. Trails may occupy no more than 0.5 percent of the total Conservation Area acreage. During the emergence period of the Houston toad (March 1 through June 30), access should be limited to land management personnel only, as identified in the Conservation Area Management Plan.

## **Agricultural Uses**

Keeping domestic livestock is part of the rural tradition of Bastrop County and may be allowed in low density, large-lot subdivisions. However, overstocking the land frequently degrades wildlife habitat, particularly the vegetation, soil structure, and breeding features needed by the Houston toad. These management standards are designed to help ensure that secondary agricultural uses of Conservation Areas does not negatively impact Houston toad habitat.

Grazing or keeping domestic livestock or exotic ungulates (e.g., cattle, horses, goats, sheep, llamas, antelope, and similar animals) on individually or commonly owned Conservation Areas is allowable, if stocking rates do not exceed those recommended for Bastrop County by the Natural Resources Conservation Service (NRCS). Landowners that do not own sufficient acreage to graze domestic animals without exceeding the NRCS recommended stocking rate may pen and keep animals within the development area of a lot, if permitted by the subdivision restrictions. However, any grazing or pasturing of domestic livestock or exotic ungulates in the Conservation Areas at stocking rates higher than that recommended by the NRCS for Houston toad habitat is not allowed. Horses may be used for recreational purposes within the Conservation Area, but must be penned, fed, and watered within the development area of the lot if sufficient acreage is not available for grazing. The LPHCP Administrator will continue to work with the Bastrop Central Appraisal District (BCAD) to educate owners of lots too small to graze livestock on in accordance with NRCS guidelines for managing the Conservation Area for wildlife.

On land being restored to suitable Houston toad habitat (e.g., reforested or similar activities specified by the Conservation Area management Plan), livestock grazing must not impede the enhancement of toad habitat, such as trampling or stripping young trees, degrading pond edges, or hampering the regrowth of native grasses. The Conservation Area Management Plan must address all proposed agricultural uses by minimizing and avoiding negative impacts to the Houston toad and Houston toad habitat.

In all cases, domestic livestock are to be excluded from primary habitat areas. Domestic livestock must also be removed from Conservation Areas during the breeding season and emergence period of the Houston toad (January 1 through June 30). Domestic livestock may be kept within the development area of each lot throughout the year.

## **Forestry Uses**

Forestry practices are allowed within Conservation Areas, according to the Forest Management Guidelines in Appendix E of the LPHCP. Forestry practices that manage forested areas into mature forests are encouraged. However, timber harvests must be limited

to single-tree selection or shelterwood cuts (as defined in Appendix E of the LPHCP). Group selection and clear-cutting are not allowed within Conservation Areas.

## **5.0 Property Owners' Association and Community Education**

Except for developments that remain under a single owner, such as an apartment complex, subdivisions developed under these guidelines shall have a POA, and membership in the POA shall be required for all property owners in the development and their successors. The POA shall have the obligation, responsibility, and authority to monitor and enforce compliance with restrictive covenants, and will function as a liaison between the LPHCP Administrator and the POA members. Additionally, the POA will be responsible for maintaining signs at all entrances to the subdivision that identify the subdivision as managed for the Houston toad and that deed restrictions apply. The POA, with the assistance of the LPHCP Administrator, will distribute information about the use and management of the Conservation Area and other community programs. Owners of apartment complexes are similarly required to enforce compliance with the restrictive covenants and distribute information to tenants and staff about the use and management of the Conservation Area, and other community programs.

The LPHCP Administrator will assist the owner or POA in developing incentives and education programs for residents of conservation subdivisions. The owner or POA will also help distribute information to tenants or property owners about the Houston toad, the LPHCP, and other conservation opportunities, such as information regarding TPW's Wildscapes Program, the National Wildlife Federation's Backyard Wildlife Habitat Program, and other financial or technical assistance programs.

The POA will provide information about the use and management of the Conservation Area (including a copy of the Conservation Area management plan, LPHCP IPM Plan, restrictive covenants, and similar documents) to all new tenants or landowners in the conservation subdivision to ensure that future landowners or tenants are aware of the information in these guidelines. The POA will give new owners a list of invasive and non-native landscaping plants to avoid (Table 1). This information will be provided to each new landowner within one year of their purchase of the property or prior to any construction activities on the property, whichever occurs earlier.

The POA of a low density, large-lot subdivision must also have the authority and obligation to review construction and landscaping plans for all improvements to individual lots regarding the gross area and placement of these improvements. The landowner must submit such plans to the POA for review and approval prior to the construction or installation

of such improvements. This review will help ensure that no more than 20 percent of the lot is used for development purposes.

The owner or POA of a higher density, clustered subdivision has the responsibility of protecting and managing the Conservation Area according to the Conservation Area Management Plan. The owner or POA shall have lien authority to ensure the collection of dues from all members to fund on-going management of the protected habitat.

## **6.0 Restrictive Covenants**

All lots within the conservation subdivision shall be subject to restrictive covenants that must be recorded with Bastrop County in conjunction with the recording of the subdivision plat. The restrictive covenants are designed to reduce the impact of initial construction of the subdivision, the initial construction of structures, and the ongoing use of the property as Houston toad habitat. Restrictive covenants for conservation subdivisions shall include:

1. No further subdivision of lots is permitted.
2. The amount of development use area to be allowed on each lot or the amount of developed area within a clustered subdivision is identified on the subdivision plat, and all clearing, construction, and non-native landscaping activities related to the development of improvements, including the use of construction equipment, or improvements associated with secondary uses of the Conservation Area must be contained within the development area, except that portions of road rights-of-ways and utility rights-of-ways may be included in the Conservation Areas as long as they are designed, constructed, and maintained as habitat. For example, the entire width of a road right-of-way does not need to be cleared.
3. Prior to any development within a lot, the lot owner must designate the development area by an instrument to be recorded by the LPHCP Administrator. See Section 3.1 of this guideline.
4. All activities related to the use, management, and maintenance of Conservation Areas must follow the Management Plan for the Conservation Area.
5. The use of pesticides will follow the recommendations of the LPHCP/Bastrop County Integrated Pest Management Plan (IPM Plan) coordinated and maintained by the LPHCP Administrator.
6. The POA or the holder of any conservation easement, and its assigns shall have a reasonable right of entry to inspect for compliance with covenants or the terms of the conservation easement relating to conservation measures for the Houston toad. Reasonable conditions for inspections shall include notification of the property owner

at least 10 days in advance, limitation to a time convenient to the property owner, and limitation to only those areas covered by the covenants or easements.

7. The covenants pertaining to Houston toad conservation measures may not be amended without the approval of the County of Bastrop.
8. Bastrop county is granted an easement to enter the Conservation Area for purposes of compliance with this guideline and biological monitoring.

## **7.0 Roadway and Infrastructure Design**

Conservation subdivision applicants are encouraged to minimize the length of roads and utility corridors within conservation subdivisions, since these corridors often create barriers to Houston toad movement. Applicants are encouraged to avoid construction practices that would unnecessarily create barriers for the Houston toad. Clustering residential lots and placing residential clusters near existing roadways can minimize the length of road and utility corridors required.

The applicant must prepare and implement a strategy for roadways and other infrastructure corridors within the conservation subdivision that minimizes their impact on the connectivity of Houston toad habitat to the maximum extent practicable. This minimization strategy must be prepared and approved by the LPHCP Administrator prior to subdivision approval.

As part of this minimization strategy, street rights-of-way and pavement widths may not exceed the minimum specified in the County of Bastrop Subdivision Regulations (Sections 5.4.6, 5.4.7, and 5.4.8) for the applicable type of subdivision (rural, suburban, or urban) based on the average lot size (excluding the Conservation Area in clustered subdivisions). The subdivision applicant must also prepare an erosion and sedimentation control plan and revegetation plan for all infrastructure improvements, which must be approved by the LPHCP Administrator prior to the start of construction. Plants listed in Table 1 may not be used to revegetate or landscape rights-of-way or common areas within the subdivision. These non-native and invasive plants may escape cultivation and spread throughout natural areas, particularly along creeks, streams, and drainages, and can have a negative impact on native vegetation. The use of other non-native plants is discouraged.

Other minimization strategies may include some, or all, of the following.

1. Minimizing the length of roadways and other infrastructure corridors needed within the subdivision.
2. Reducing pavement width to less than the current requirements, if approved by the County of Bastrop.

3. Using permeable paving materials, such as gravel or “grasscrete” (a concrete grid with openings filled with gravel or plants).
4. Reducing speeds on roadways, where practicable, by posting lower nighttime speed limits that will help drivers avoid hitting toads crossing roadways (recommended 25 mph).
5. Incorporating toad crossing tunnels into the design of the roadway, particularly when roads are bordered by suitable Houston toad habitat (for examples see the “Critter Crossings” website by the Federal Highway Administration ([www.fhwa.dot.gov/environment/wildlifecrossings](http://www.fhwa.dot.gov/environment/wildlifecrossings)), and similar sources).
6. The roadway and utility corridor minimization strategy must include specifications for the revegetation of ground surface disturbed by construction activities. The use of invasive non-native plants in revegetation (Table 1) is prohibited, including KR bluestem (*Bothriochloa ischaemum*), bahiagrass, and ryegrass (*Lolium spp.*). Roadside and utility corridor maintenance must be tailored to the needs of the native plants within the area (e.g., mowing schedules must be suitable for maintaining native grass cover). Maintenance schedules must also avoid mowing during the breeding season and emergence period of the Houston toad (January 1 through June 30) and must be planned as necessary to maintain safe sight distances. Maintenance required for human health and public safety may be conducted at any time.
7. Avoid initiating construction during the breeding season.

Utilities may be installed in the Conservation Area, provided construction occurs during daylight hours between July 1 and December 31 (avoiding the breeding and emergence period of the Houston toad). All trenches shall be backfilled loosely with native materials during the nighttime hours. All clearing shall not exceed 16 feet in width. Vegetation shall be cleared by hand or with a backhoe, cut from aboveground and not pushed over. All disturbed areas shall be reseeded with non-sod forming, native grasses, such as little bluestem. Provisions to minimize the negative impacts of these corridors in Conservation Areas, such as vegetation management and fire ant control, must be addressed in the Conservation Area Management Plan.

## **8.0 Incentives for Special Situations**

Subdivision applicants are encouraged to conserve as much Houston toad habitat as possible and to mitigate for potential impacts to the Houston toad beyond the specifics of these guidelines. The County recognizes that these guidelines may not account for special situations or the possible details of all potential conservation subdivisions. If a subdivision applicant wishes to develop a conservation subdivision that fulfills the intent of these guidelines, but differs in minor respects from the specific requirements, the applicant may

request the LPHCP Administrator to prepare a variance request to be submitted to the Service as a minor amendment to the LPHCP (see Section 9.2.1 of the LPHCP). The LPHCP Administrator will prepare such request with the assistance of the subdivision applicant. The Service will respond within 30 days.

## **9.0 Literature Cited<sup>2</sup>**

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- U. S. Army Corps of Engineers (USCE) 1987. Corps of Engineers wetlands delineation manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. NTIS No. AD A176 912.
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## **10.0 Definitions**

**100-year floodplain** – The 100-year special flood hazard zone, referred to as the “100-year floodplain” for all purposes related to this HCP only, is that area designated in the

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<sup>2</sup> Documents cited in the text provide the source of information contained within these guidelines and are for reference purposes only. These documents are not part of the Conservation Subdivision Guidelines or the LPHCP.

Federal Emergency Management Agency Flood Insurance Rate Map dated August 19, 1991, as “Special Flood Hazard Areas Inundated by 100-Year Flood.”

**Conceptual Plan** – An initial plan for the proposed subdivision, based on the Natural Resources Inventory.

**Conservation Area** – Protected areas within a Conservation Subdivision that are to be managed for the benefit of the Houston toad.

**Developed area** – the area(s) designated for residential or small-scale commercial uses in a low density, large-lot subdivision..

**Development** – The construction or reconstruction of a building, road, or the placement of any other structure on land; the excavation, mining, dredging, grading, or filling of land; the clearing or removal of vegetation from land; or the deposit of refuse, waste, or fill on land. The following activities are not development, as that term is used in the LPHCP:

1. Lawn and yard care, including mowing, gardening, tree care, and maintenance of landscaped areas;
2. Any maintenance of a Conservation Area that is approved under the applicable Conservation Area Management Plan; and
3. Activities undertaken pursuant to the attached management guidelines for agriculture, wildlife and forestry.

**Higher density, clustered development** – A conservation subdivision design that clusters small lots into groups and/or includes multi-family housing, and which designates large tracts for conservation use (70 to 80 percent of the total subdivision area).

**Home business** – A business conducted from a home within a subdivision developed under these guidelines. Such home business must be confined to the selected residential area within each lot. It is specifically prohibited to place, park, display, or store inventory, equipment, supplies, vehicles or any other items of any nature whatsoever in the Conservation Area of any lot within the subdivision either temporarily or permanently, whether or not such items belong to the owner of the lot(s)

**Incidental take** – Take (e.g., harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct) of any federally endangered or threatened wildlife species that is incidental to, but not the purpose of, otherwise lawful activities.

**Integrated Pest Management Plan** – A strategy for pest control that emphasizes activities that reduce pest problems and controls pests using non-toxic or least-toxic methods.

**Low-density, large-lot development** – A low-density subdivision design that incorporates Conservation Areas into individual properties.

**Natural Resources Inventory (NRI)** – A report and maps describing and identifying the natural resources within a proposed subdivision that is used to help determine the location of Conservation Areas, residential lots, developed areas, roads, and other subdivision infrastructure.

**Paved** – Ground that is surfaced with impervious cover, such as asphalt or concrete. Graveled surfaces are not considered paved.

**Plan Area** – The 124,000-acre permit area of the LPHCP representing potential Houston toad habitat in Bastrop County.

**Primary habitat areas** – Features within the proposed subdivision that were in existence prior to subdivision development (e.g., not constructed as part of the management program for the Conservation Area) and are potential breeding habitat for the Houston toad. Primary habitat areas include (1) the 100-year floodplain, as defined herein, or buffer zones of at least 200 feet from both sides of the centerline of all perennial or intermittent waterways with a watershed greater than 64 acres, whichever is greater; and (2) permanent or ephemeral wetlands or ponds existing prior to development, as designated on National Wetland Inventory (NWI) maps or meeting the criteria for wetlands under the U. S. Army Corps of Engineers (USCE) wetland delineation manual (USCE 1987), and, (3) a buffer zone of at least 200 feet around these features. Primary habitat areas may not be altered by development, unless approved by the County of Bastrop.

**Qualified environmental consultant** – A person with a B.S. or B.A. degree from an accredited college or university with specialization in ecology, wildlife science, wildlife management, wildlife ecology, or directly related field of natural resource conservation and two years of experience with evaluating wildlife habitat and mapping natural resources.

**Residential use area** – the area of a lot in which all buildings, impervious surfaces, lawns, gardens, decks, and similar improvements associated with the human use of the property must be contained (applicable to low density, large-lot subdivisions).

**Roads** – Roads installed as part of the infrastructure of the subdivision. Private driveways on individual lots are not considered roads.

**Secondary habitat areas** – Important habitat features for the Houston toad that should be included in the protected area of a conservation subdivision to the maximum extent feasible. However, these features are generally too common on the landscape to warrant complete, mandatory protection. For the purposes of protecting Houston toad habitat, secondary habitat areas are principally described as forested land cover (particularly large, contiguous blocks of forest cover) over deep sandy soils.

**Subdivision applicant** – Person or entity developing a subdivision through the County of Bastrop Subdivision Regulations.

**Water management zone (WMZ)** – A buffer area immediately adjacent to stream channels (areas at least 3 feet (0.9 meters) wide where a sufficient amount of water has scoured away the vegetation) or other water bodies, such as ponds, wetlands, springs, or seeps. The purpose of a WMZ is to protect important breeding and emergence habitat for the Houston toad, in addition to protecting water quality. The minimum width for an WMZ is 50 feet (15 meters) from all edges of the buffered feature, with the actual width varying by land use (i.e., agriculture, forestry, wildlife) and type of Conservation Subdivision. A 50 feet wide WMZ applies to low density, large-lot subdivision, and agricultural and wildlife management. A 150 feet wide WMZ applies to forestry management. A 200 feet wide WMZ applies to high density, clustered design subdivision.

. WMZs are not within or adjacent to treed areas. Consult definition of Primary Habitat. Water Management Zones are often referred to as Streamside Management Zones in literature.

## **Contributors**

This document was prepared under the direction of the Bastrop County Stakeholder Workgroup. Assistance was provided by Kariann Sokulsky (KES Consulting), Dr. Michael R.J. Forstner (Texas State University), and Robert J. Kleeman (Hall & Kleeman, P.L.L.C.). Edited by Clifton Ladd and Amanda Hunter (Loomis Austin, Inc.).

**Table 1: Non-native and Invasive Landscaping Plants to Avoid in Conservation Subdivisions.**

Common Name	Scientific Name	Common Name	Scientific Name
<b>Trees and Shrubs</b>		southern crabgrass	<i>Digitaria ciliaris</i>
tree-of-heaven	<i>Ailanthus altissima</i>	goosegrass	<i>Eleusine indica</i>
mimosa	<i>Albizia julibrissin</i>	kleingrass	<i>Panicum coloratum</i>
paper mulberry	<i>Broussonetia papyrifera</i>	guineagrass	<i>Panicum maximum</i>
Chinese loquat	<i>Eriobotrya japonica</i>	bahiagrass	<i>Paspalum notatum</i>
Chinese parasol-tree	<i>Firmiana simplex</i>	johnsongrass	<i>Sorghum halapense</i>
golden rain-tree	<i>Koelreuteria paniculata</i>		
Japanese ligustrum	<i>Ligustrum lucidum</i>	<b>Herbaceous Plants</b>	
wax-leaf ligustrum	<i>Ligustrum quihoui</i>	Japanese honeysuckle	<i>Lonicera japonica</i>
Chinese privet	<i>Ligustrum sinensis</i>	sweet clover	<i>Melilotus albus</i>
chinaberry	<i>Melia azedarach</i>	sour clover	<i>Melilotus indicus</i>
white mulberry	<i>Morus alba</i>	yellow sweet clover	<i>Melilotus offinalis</i>
heavenly bamboo	<i>Nandina domestica</i>	childing pink	<i>Petrorhagia prolifer</i>
red-tip photinia	<i>Photinia serrulata</i>	wild mustard	<i>Rapistrum rugosum</i>
white poplar	<i>Populus alba</i>	castor-bean	<i>Ricinus communis</i>
kudzu	<i>Pueraria lobata</i>	pink clover	<i>Trifolium pratense</i>
firethorn	<i>Pyracantha</i> spp.	white clover	<i>Trifolium repens</i>
Chinese tallow	<i>Sapium sebiferum</i>	Brazilian vervain	<i>Verbena brasiliensis</i>
Siberian elm	<i>Ulmus pumila</i>		
		<b>Aquatic and Wetland Plants</b>	
<b>Grasses</b>		elephant ears	<i>Colocasia</i> spp.
giant reed	<i>Arundo donax</i>	water hyacinth	<i>Eichhornia crassipes</i>
King Ranch (KR) Bluestem	<i>Bothriochloa ischaemum</i>	hydrilla	<i>Hydrilla verticillata</i>
rip-gut brome	<i>Bromus diandrus</i>	yellow flag	<i>Iris pseudacorus</i>
rescuegrass	<i>Bromus unioloides</i>	purple loosestrife	<i>Lythrum salicaria</i>
bufflegrass	<i>Cenchrus ciliaris</i>	German water clover	<i>Marsilea mutica</i>
pampas grass	<i>Cortaderia selloana</i>	parrot feather	<i>Myriophyllum aquaticum</i>
silky bluestem	<i>Dichanthium serviceum</i>		