



Conservation Plan for the Illinois Chorus Frog (*Pseudacris [streckeri] illinoensis*) and the Ornate Box Turtle (*Terrepenne ornata*)

- Description of the impact likely to result from the proposed taking of the species that would be covered by the authorization including:

1. Legal description or detailed description of area: The project involves the proposed commercial development consisting of the installation of a sanitary sewer pump station and infrastructure, commercial building, associated parking, and four lakes/detention basins on an approximately 113-acre site (see attached Figure 1 – Vicinity and Topographic Map). The project is located northeast of the intersection of Interstate 255 and Interstate 270 in Edwardsville, Madison County, Illinois, and it is owned by TriStar Companies, LLC. More specifically, it is found immediately to the east of and adjacent to Interstate 255, north of Chain of Rocks Road, and west of Sand Road. The project area consists of agricultural land. Legal locality information for the project site, taken from the Edwardsville, Illinois (7.5' series, 1954 edition, Photo Revised 1991) United States Geological Survey topographic quadrangle map is as follows: Section 25, Township 4 North, Range 9 West. The approximate latitude and longitude for the site are 38.7678 and -90.0377, respectively.

2a. Biological data on the Illinois chorus frog: The project poses a high probability that Illinois chorus frogs could be incidentally taken during the excavation and construction of the sanitary sewer pump station, associated infrastructure, as well as the commercial building, parking lots and lakes. Associated with sandy soils, these frogs usually occur above the 100 year floodplain, but they may be found in higher upland areas where there is both favorable geology and hydrology. This small amphibian (adults rarely exceed 1.5 inches in length) has a fossorial habit, spending nearly all of its life underground, deep in the soil below the frost line, but the depth at which it burrows is unknown, as is how extensive an area one individual's burrow may be during a year. While breeding ponds comprise the essential reproductive habitat for this species, it spends very little of its time in them.

The species is most easily identified in late winter and early spring after dark, when it emerges from sandy burrows and travels to nearby ephemeral vernal pools soon after ice-out, in late February or early March. Males then sing to attract mates, thus comprising the "chorus" from which the species derives its name. After a few weeks, adults return to their dispersed burrowing areas. If the vernal pools last long enough, tadpoles metamorphose and disperse, leaving no trace of the species until the following breeding season. Such pools frequently are farmed wetlands and may be difficult to identify outside the breeding season or in drier years. In many places, roadside ditches may be an important component for successful breeding and recruitment.

Dispersal distances of around one kilometer (3,280 feet) have been reported, but few attempts to measure this activity have been made because of the cryptic nature of this species. The relative density of populations is also unknown. Their diet is believed to be mainly earthworms and soil insects.



The excavation of sandy soils can directly kill or injure frogs whose burrows are located within the excavation areas. Chorus frogs may prove sensitive to the underground transmission of noise and vibrations from construction activities, and the movement of vehicles and machinery may compact soils and inhibit frog's movements to the ground surface and their ability to travel to and from breeding ponds. The species primary prey may be sensitive to noise and vibrations as well, resulting in alterations of the size and locations of suitable habitat actually occupied. Grading and spoil disposal may inadvertently fill or destroy breeding ponds and ditches, and frogs can also be directly killed by being run over by vehicles and machinery.

2b. *Biological data on the Ornate Box Turtle:* The project poses a high probability that ornate box turtles could be incidentally taken during the construction of the sanitary sewer pump station, associated infrastructure, commercial building, parking areas, and lakes.

Many populations have been adversely affected by prairie habitat conversion to agriculture and development, road-kills, and over-collection for the pet trade. There is a recent record of this species close to the project footprint, but since it is a relatively small turtle (less than six inches), this animal can easily escape notice.

From late September through mid-April, the ornate box turtle hibernates (brumates) in burrows as deep as three feet underground. Such burrows are far from obvious to humans, so that for more than six months of the year, this species is not subject to easy observation. This species spends significant portions of each day underground, either in burrows or shallow excavations near the surface called "forms". Hatchlings spend most of their time underground during their first two or three years of life. Excavation of soils and pipeline trenching activities in potential habitat during the above-noted timeframe run the risk of killing or injuring unobserved turtles.

The ornate box turtle's daily pattern consists of an early morning emergence, followed by basking to raise its body temperature. When the right temperature for activity is achieved, it forages across its range for several hours, feeding, until temperatures become too high, then it seeks shelter beneath vegetation, in a burrow, or in a 'form.' It remains inactive until late afternoon or early evening, when temperatures allow a second foraging period. Before darkness falls, it retreats to its burrow, except for females during the nesting period (May and June), when eggs are laid at night.

This species also demonstrates high fidelity to brumation sites, often returning to within a yard of where it spent the winter the previous year. If a brumation site is located where work is being conducted, it is unclear how a turtle will respond.

Noise generated by excavation and trenching activities may interfere with animal communication and may hinder reproductive success, depending on its length and intensity. Vibrations from construction activities may pose another risk factor since reptiles are very sensitive to vibrations transmitted through the ground, as are earthworms and soil organisms, part of this turtle's diet. Further, compaction of sandy soils can make it difficult or impossible for turtles to exit their burrows.

Because this species finds movement through dense vegetation difficult, it prefers areas where vegetation is sparse or absent. Roads satisfy this desire for easy movement, as do tilled fields, which also provide basking areas where temperatures may rise more quickly in the morning or during cooler weather. The majority of IDNR's observation records for this species are



adjacent to roads or are recorded road-kills.

3. Description of the activities that may result in taking: The proposed action requires the construction of a sanitary sewer pump station and associated infrastructure, a large commercial building with associated parking lots, and four lakes (Figures 3a, 3b, and 3c). Figure 3a depicts the overall site that is owned by Tristar. Figures 3b and 3c depict the proposed project area for which this plan was prepared. The construction associated with the placement of the sanitary sewer pump station and its appurtenances, the building, and lakes may result in the take of Illinois chorus frogs and ornate box turtles in the areas of construction. Activities such as grading as it pertains to the construction of a commercial building, associated parking and infrastructure, the construction of detention lakes, culvert placement, road construction to facilitate property access, and the installation of utilities will occur. Heavy equipment will be used for the development of the site. Excavation of soils is required to create the lakes. Heavy trucks will be present on the site to bring in building materials. Parking lots will surround the large commercial building, and four lakes to serve as detention basins will be constructed around the parking lots and entrance to the site. The ditch that the access road will cross will be removed of sediment buildup and widened to accommodate stormwater management (Figure 3b).

4. Explanation of anticipated adverse effects on the species/quantification of take: It is difficult to predict the number of individuals of both species that may be “taken” by this project, as the size of the species is so small and the population of the frog remains underground during the vast majority of the year. Permanent habitat modification or degradation may lead to the death or injury to the listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. The project site is within the area which includes most of the known records for these species in Madison County, Illinois. Studies have been conducted at the mitigation site for the Illinois chorus frogs which is located approximately 2,400 feet to the northeast of the project site.

- Measures to be taken to minimize and mitigate the impact on the species, and the funding that will be available to undertake these measures

Plans to minimize the area affected by the proposed action, the estimated number of endangered individuals to be taken, and the amount of habitat to be affected: Since the Illinois chorus frog and the ornate box turtle are known to exist near the project area, an Incidental Take Authorization (ITA) is requested. It is extremely difficult to estimate the number of individuals that may be taken due to the species’ fossorial habitat and small size. Approximately 113 acres of potential frog and turtle habitat will be taken by the proposed project. The footprint of the site is approximately 113 acres, including the area of the proposed four lakes. Funding for all recommendations to be implemented will be provided by Tristar Companies, LLC.

The recommendations listed below were stated in the November 3, 2014 letter from the IDNR regarding the proposed development. At that time, the IDNR recommended that the ITA apply to a 652-acre site which is owned by Tristar, in which this 113-acre site is located, and not just to the installation of the pump station, commercial building, parking areas, and four lakes. Additional correspondence with the IDNR determined that the ITA should only involve the actions that are currently proposed. An ITA will be required for any actions that are proposed subsequently for the overall project site.



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650 Pierce Boulevard
O'Fallon, Illinois 62269
618-624-6969 Fax 618-624-7099
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Recommendation #2: Exclusionary fencing will be in place before construction begins and maintained through September. Daily inspections will be conducted during the construction period to ensure that the fencing is installed properly and to check for the presence of the ornate box turtles.

Recommendation #3: Trenches and excavations dug as a result of this project will be covered at the end of each work day. Before starting work each day, trenches and excavations will be routinely inspected to ensure no frogs or turtles have fallen in and become trapped.

Recommendation #4: All on-site personnel involved in the project will be educated on how to recognize these species. Color photos and educational materials will be distributed, discussed at pre-construction meetings, and displayed at work zones. The Illinois chorus frog is usually only seen above ground during the spring breeding season (February – April). Illinois chorus frogs prefer to be below ground from May to January. The ornate box turtle is usually only seen above ground from mid-April to late September, outside of its brumation season.

Recommendation #5: If Illinois chorus frogs and ornate box turtles are encountered during construction activities, work will cease and an IDNR District Heritage Biologist will be contacted at (618) 462-1181, per the attached letter from the Department. Tristar Properties, LLC will follow the recommendations given by the IDNR District Heritage Biologist regarding how to respond to the confirmed presence of the species.

Recommendation #6: Since construction activities are likely to occur in summer of 2015, a wetland delineation was conducted for the proposed project site in December 2014. The wetland delineation figure is attached (Figure 3a). No wetlands were identified on the subject site.

Recommendation #8: It is not known whether potential impacts to breeding ponds used by Illinois chorus frogs in the vicinity of the project may occur as a result of proposed construction activities; however, it is unlikely that the development of Lot 7, which contains 113 acres, will negatively affect breeding ponds or the agricultural ditches that exist within the overall area. A hydrologic study to determine if development of the project area will impact any breeding ponds has not been conducted at this time. A mitigation site for the Illinois chorus frog is located approximately 2,400 feet to the northeast from the proposed project. This project should have no impact on known breeding ponds at the mitigation site. Wetland delineations conducted for this project and surrounding property to the north, east, and south identified several ditches located along the edges of the agricultural fields, in addition to the channelized County Ditch that traverses along the northern boundary of the subject site. The area contains a high water table, which is unlikely to be affected by the development of this 113-acre site.

Recommendation #9: This recommendation pertains to the installation of curbing around areas subject to vehicular traffic. Exclusionary curbing will be installed around any areas subject to vehicular traffic to keep turtles out. Additionally, the lakes/detention areas will surround the structures, creating a natural buffer for the turtles.

Recommendation #10: Light fixtures that direct downward so that light is not visible from outside of the development site will be installed. Perimeter parking lot lights will shine back toward the buildings, as municipal regulations require.

Recommendation #11: Debris that may potentially be blown from the site should be captured by



the use of temporary fencing and the silt fence that will be installed.

Recommendations unable to be implemented for the proposed project

Recommendation #1: Due to the nature of the proposed project, this recommendation cannot be followed for every portion of the development. Recommendation #1 pertains to the breeding seasons of the Illinois Chorus Frog and the Ornate Box turtle and states that work should not occur during the breeding seasons (February 1 to June 30) of the species. However, depending on when construction activities commence, the installation of the sanitary sewer pump station and associated infrastructure, the commercial building, parking areas, and the four lakes will be able to avoid the breeding season of the Illinois chorus frog, as work would begin in summer of 2015 and be completed before February 2016.

Recommendation #7: The current development plan entails the construction of a pump station, associated infrastructure, a large commercial building, parking areas, and four lakes/detention basins on approximately 113 acres. The overall site owned by Tristar consists of 652 acres. Currently, there are no proposed development plans for any property other than Lot 7 (113 acres). At this time, Tristar cannot commit to allowing Lot 2 to exist as open space or as a potential mitigation area, as it does not contribute to the cost-effectiveness of the overall project. However, Lot 2 and the majority of the overall site may not be developed for ten years or more, allowing the current land use to remain unchanged. This is further explained below in the Alternative #2 description.

1. **Plans for management of the area affected by the proposed action that will enable continued use of the area by the species:** If measures are taken to minimize compaction of sandy soils in potential areas, such as near the proposed lakes, frogs may still inhabit the area. Due to the agricultural use of the property, the presence of the frogs and turtles on the site may be limited. If measures are taken to minimize compaction of sandy soils in some areas, such as near the proposed lakes and undisturbed areas, frogs could still inhabit portions of the project site. Turtles would not likely benefit from the lakes, since the slopes would be greater than required by the turtles. Additionally, if turf/sod grass is not planted in some areas that will not be developed, frogs may still be able to emerge from and burrow into the sandy soils.
 1. **Description of all measures to be implemented to minimize and mitigate the effects of the proposed action on the species:** Many of the recommendations listed above will be implemented to minimize the effects of the proposed action on the species.
 2. **Plans for monitoring the effects of measures implemented to mitigate and minimize the effects of the proposed action on the species:** The Illinois chorus frog exists underground for the majority of the year, and is, therefore, extremely difficult to monitor. The ornate box turtle is typically active between April and September. If required, Tristar will contract a biological consultant to monitor the site for turtles after construction is completed. Drift fences will be installed in undeveloped areas or around the lakes, depending on the recommendations of the biological consultant. A detailed monitoring plan will be prepared and submitted to the IDNR for approval.
 3. **Adaptive management practices that will be used to deal with changed or unforeseen circumstances that affect the effectiveness of measures instituted to minimize or mitigate the effects of the proposed action on the species:** Due to the nature of the



project, Tristar does not anticipate any changed or unforeseen circumstances. However, if these species are encountered during construction activities, as stated above, an IDNR biologist will be contacted immediately and all work will cease.

4. **Assurance of funding to support and implement all mitigation activities described in the conservation plan:** Tristar will assure all funding necessary for the implementation of the mitigation activities. The appropriate financial instrument to assure necessary funding will be submitted to IDNR.
- **Description of alternative actions considered that would not result in a take of the species, and the reasons that the alternatives were not selected. A 'No Action' alternative is also described:**
1. The No Action alternative is defined as abandoning the plan to construct the commercial building, sanitary sewer pump station, associated parking and infrastructure, and the four lakes/detention basins. The project area is currently used for agricultural purposes. However, to the west of the site exists the Hershey Midwest Distribution Center. Additionally, Procter & Gamble, Unilever, and Dial have large distribution centers in the area. The project area has been proposed for additional similar types of development, and the interchange off Illinois Route 255 was constructed to assist with this plan for the economic development of the area. The No Action alternative would not contribute to the economic development of the area and would result in the loss of 400 potential construction jobs and 800 warehouse jobs. Therefore, this alternative was abandoned.
 2. Another alternative, which was studied due to its recommendation by the IDNR (*Recommendation #7*), consists of using Lot 2, which is directly west of and adjacent to an IDNR-owned mitigation site for the Illinois chorus frog, as open space or as a potential mitigation area. At this time, there are no development plans proposed for Lot 2. However, Lot 2 is a 52-acre parcel which could allow for the construction of a 574,080 square foot building. The land in the project area currently sells for approximately \$4 per square foot of building, which equals a market value of \$2,296,320. To avoid development of this lot, Tristar would lose approximately \$2.3 million in potential revenue. The future development of this lot provides the most cost effective option for Tristar. The property on the northern portion of the site is of slightly higher elevation than the southern portion, making it practicable to develop. Therefore, the commitment to avoid the future development of Lot 2 cannot be made at this time. However, as stated above, there are no current plans for the development of Lot 2, and Lot 2 will likely remain undeveloped for many years.
 3. The preferred alternative requires the installation of a sanitary sewer pump station and associated infrastructure, the construction of a large commercial building, surrounding parking lots/paved areas, and four lakes/detention basins on approximately 113 acres. The four lakes will surround the development, except in the area of the entrance to the development from the existing roadway. The lakes will be linear-shaped and steeply sloping. They will serve as detention basins. The project area has a high groundwater table, and the basins are required to manage stormwater quantity. An existing drainage ditch will be used to maintain the off-site drainage. The existing ditch which is located along the site's northeast boundary will be removed of sediment and widened to better accommodate stormwater management.



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- **Information to indicate that the proposed taking will not reduce the likelihood of the survival of the species.** If the proposed project is constructed using recommendations from the Department, it is expected that the project will not negatively affect the overall survival of the Illinois chorus frog, due to the remaining amount of undeveloped land that exists in the project area which can be utilized by the species.
- **The implemented agreement, which includes:**

1. **Names and signatures of all participants in the execution of the conservation plan**

Tristar Companies, LLC

Stock & Associates, Inc.

SCI Engineering, Inc.

Illinois Department of Natural Resources

2. **The obligations and responsibilities of the participants with schedules and deadlines for completion of activities included in the plan**

The Illinois Department of Natural Resources is responsible for the review of this Conservation Plan and for subsequent issuance of the Incidental Take Authorization, if so required. Tristar is responsible for all biological clearance coordination and recommendations and funding related to the project.

At this time, construction of the sanitary pump station, the commercial building, the lakes and associated infrastructure is estimated to begin June 2015 and end December 2015. The IDNR's recommendations will be followed to the extent possible on all proposed developments within the project area.

Stock & Associates, Inc. is responsible for the creation of the engineering plans.

3. **Certification that each participant in the execution of the conservation plan has the legal authority to carry out respective obligations**

This project will be funded by Tristar Companies, LLC. There is no state or federal funding being utilized for the construction of this project.

4. **Assurance of compliance with federal, State and local regulations pertinent to the proposed action and to the execution of the plan**

Tristar exclusively abides by the National Environmental Policy Act and all associated state and federal environmental laws in carrying out the mission of performing the most environmentally sensitive methods of planning and engineering.

5. **Copies of any federal authorizations for taking already issued to the applicant.**



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No authorizations have been issued.

- 6. For projects that will result in the taking of endangered or threatened species of plants, copies of expressed written permission of the landowner.**

Not applicable since the Illinois chorus frog (*Pseudacris [streckeri] illinoensis*) and the ornate box turtle (*Terrepenne ornata*) are considered animals under the Endangered Species Act.