

## Conservation Plan for the Illinois Chorus Frog (*Pseudacris [streckeri] illinoensis*)

- 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 installation of approximately 8,900 feet of a 20-inch diameter raw water transmission main, 1,690 feet of 16-inch finished water main, 2,200 feet of 8-inch finished water main, 945 feet of 6-foot finished water main, and all fittings, valves, hydrants, and accessories to connect to existing and finished water mains that will convey raw groundwater from the two wells recently constructed, located at the East Well Field, to the existing water treatment plant. The finished water mains will be installed in a common trench with the raw water transmission main. Trenches will range from five feet to nine feet wide and be a minimum of five feet deep. The project is located along Sand Road in Edwardsville, Madison County, Illinois, and a portion of the project is located directly across from state-owned (IDNR) property that contains appropriate frog habitat and is a mitigation site for Illinois chorus frogs. The project area contains residential, agricultural, and undeveloped land. Legal locality information for the project site, taken from the Edwardsville, Illinois (7.5' series, 1954 edition, Photo Revised 1991) USGS topographic quadrangle map is as follows: Sections 7, 18, and 19, Township 4 North, Range 8 West, and Sections 13 and 24, Township 4 North, Range 9 West.

2. **Biological data on the Illinois chorus frog:** This project poses a high probability that Illinois chorus frogs could be incidentally taken during the excavation and construction of the extensive water main. 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.

It 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 and digging of trenches can directly kill or injure frogs whose burrows are located within the excavations. Chorus frogs may prove sensitive to the underground transmission of noise and vibrations from the activities; 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; their primary prey species 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.

**3. Description of the activities that may result in taking:** The proposed action requires the trenching of 8,900 feet (note: only 8,900 feet of trenching since the finished water main and raw water main will be installed in a single trench), or approximately 1.69 miles, for the placement of water main. The construction activities have the potential to temporarily contribute to groundwater degradation. The construction associated with the placement of the water mains and its appurtenances may result in the take of Illinois chorus frogs in the area of construction.

**4. Explanation of anticipated adverse effects on the species/quantification of take:** It is impossible to predict the number of individuals that may be "taken" by this project, as the size of the species is so small and the population remains underground during the vast majority of the year. Temporary 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.

- 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 is known to exist near the project area, and due to the frogs' fossorial habitat and small size, an Incidental Take Authorization is requested. The number of individuals that may be taken cannot be estimated. Construction limits for the proposed project have been reduced to the smallest area possible, in an effort to minimize impacts to the frogs and their habitat. Additionally, construction activities will cease during the frog's breeding season (February through April). If Illinois chorus frogs are encountered during construction activities, Mark Phipps (IDNR District Heritage Biologist, 618/462-1181, ext. 137) or Dr. Paul Brunkow (Southern Illinois University, 618/650-2976) will be contacted, per the Illinois Department of Natural Resources' (Department) *Recommendation #2*, (attachment). Since construction activities will stop from February to April, wetland delineations, as mentioned in *Recommendation #3*, will not be conducted.

**Recommendation #4:** Equipment staging areas will be provided to the Department to ensure that they do not adversely impact frog populations. Staging areas should be located outside of sandy soils or drainage ditch areas.

**Recommendation #5:** All on-site personnel involved in the project should be educated on how to recognize this species. Color photos and educational materials will be distributed, discussed at pre-construction meetings, and displayed at work zones. This species is usually only seen above ground during the spring breeding season (February – April), during which time construction will cease. Illinois chorus frogs prefer to be below ground from May to January.

*Recommendation #6:* 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 have fallen in and become trapped.

*Recommendation #7:* Vehicles and machinery will attempt to stay off any soils that are defined as sandy and use matting as additional compaction avoidance.

*Recommendation #8:* Future archaeological work by Illinois Historic Preservation Agency staff, on behalf of the City, should not commence until, and unless, consultation staff are made aware of the proposed work sites. Turf/sod grass should not be planted over the well field site as this would prevent frogs from emerging, thus entombing the species in this area. If fencing is going to be placed around the well field site, plans will be forwarded to the Department for approval first.

*Recommendation #9:* The Department is not clear whether potential impacts to breeding ponds used by Illinois chorus frogs in the vicinity of this project could occur from the drawdown of groundwater to meet water usage demand in the area.

Many residential properties in the project area, as well as a sod farm, use private wells for their water supply. Existing data which would clarify whether the future drawdown as a result of the subject project will adversely impact water levels in these breeding ponds, if the ponds are groundwater fed, is not available.

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 the area, frogs should still inhabit the area. Additionally, if turf/sod grass is not planted, frogs should still be able to emerge from and burrow into the sandy soils. Because the alignment traverses existing residential and agricultural property, where existing landscape and turf/sod grass is disturbed by the placement of the water main, the landscaping and grass will be replaced following construction. Turf/sod grass planting is not planned for areas where none exists currently.
2. **Description of all measures to be implemented to minimize and mitigate the effects of the proposed action on the species:** The recommendations listed above will be implemented to minimize and mitigate effects of the proposed action on the species.
3. **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.
4. **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, the City does not anticipate any changed or unforeseen circumstances. The water main installation will be completed and no additional work will likely be necessary afterwards.
5. **Assurance of funding to support and implement all mitigation activities described in the conservation plan:** The City will assure all funding necessary for the implementation of the mitigation activities.

- **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 install water main to connect the two recently-constructed wells to the existing water treatment plant. Additional water capacity is needed during the peak demand season next year (2013). The No Action alternative would not provide additional raw water capacity to the City’s water treatment plan, and it would result in the ineffectiveness of the two new wells. Therefore, this alternative was abandoned.
  2. Another alternative consists of the realignment of the water main. However, the proposed route of the water main is the shortest alignment, which provides the most cost effective option for the City. The alignment also falls within existing right of ways, where possible, with additional permanent easements being obtained where needed. Where it is possible to stay within the existing right of way, the main is being installed along the edge of existing roadway pavement. Moreover, other alignments within the general vicinity could also traverse through potential frog habitat. Therefore, a realignment alternative of the proposed project was abandoned.
  3. The preferred alternative requires the trenching of 8,900 feet, or approximately 1.69 miles, for the placement of water main and associated fittings, valves, hydrants, and accessories to connect to existing and finished water mains that will convey raw groundwater from the two wells recently constructed, located at the East Well Field, to the existing water treatment plan.
- **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 project’s linear nature, other areas of frog habitat in the project’s vicinity will remain untouched.
- **The implemented agreement, which includes:**
  1. **Names and signatures of all participants in the execution of the conservation plan**

Mr. Gary Neibur, Mayor  
City of Edwardsville

Crawford, Murphy & Tilly, 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. The City is responsible for all biological clearance coordination and recommendations related to the project.

At this time, the deadline for completion of activities to install the water main is July 14, 2013, which requires construction to begin in August 2012. Construction will cease from February to April 2013.

Crawford, Murphy & Tilly, 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 the City of Edwardsville through local enterprise funds. 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**

The City 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.**

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*) is considered an animal under the Endangered Species Act