



Illinois Department of Natural Resources

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<http://dnr.state.il.us>

Pat Quinn, Governor
Marc Miller, Director

April 27, 2012

Mr. Gary Niebur, Mayor
City of Edwardsville
City Hall
118 Hillsboro Avenue
P.O. Box 407
Edwardsville, IL 62025

Ms. Adrienne Eilers
Crawford, Murphy & Tilly, Inc.
Gateway Tower
One Memorial Drive, Suite 500
St. Louis, MO 63102

**Re: East Well Field Raw Water Transmission Main, City of Edwardsville
Endangered Species Consultation Program
Project Number: 1200926
County: Madison**

Dear Mr. Niebur and Ms. Eilers:

The Department received a submission via the Department's Ecological Compliance Assessment Tool (EcoCAT) website, submitted by Crawford, Murphy & Tilly, Inc., on behalf of the City of Edwardsville, regarding this project located in Sections 7, 18, and 19, Township 4 North, Range 8 West and Sections 13 and 24, Township 4 North, Range 9 West for consultation in accordance with the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

The project involves the proposed installation of approximately 8,900' of a 20" diameter raw water transmission main, 1,690' of 16" finished water main, 2,200' of 8" finished water main, 945' of 6" 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. Trenches will be 5' wide and at a minimum of 7' deep.

The project is within the vicinity of extensive records of the State-listed threatened **Illinois Chorus Frog**, *Pseudacris [streckeri]illinoensis*, and a recent record for the State-listed threatened **Ornate Box Turtle**, *Terrepenne ornata*. A portion of the proposed project is directly across from state-owned (IDNR) property that contains appropriate frog and turtle habitats and is a mitigation site for Illinois Chorus Frogs.

Note: Between June 2009 and June 2010, archaeological studies and excavations were conducted by Illinois Historic Preservation Agency staff at the two well sites. Construction of the two wells, east of this project site, began in May 2011 on approximately 30 acres of SIUE property and were completed November 2011. These two wells were constructed without going through the endangered species

consultation process, therefore, the Department was not able to make recommendations to the City to minimize or avoid potential impacts to listed species. Because of this, it is not known whether impacts to Illinois Chorus Frogs or to Ornate Box Turtles occurred. Much of the time spent reviewing this project was due to figuring out differences between the initial well project that was not submitted to consultation, and the current water main project.

The Department has completed its review of the project and determined that the action is likely to have an adverse impact on Illinois Chorus Frogs and on Ornate Box Turtles. To minimize these impacts, the Department recommends that the following measures be implemented by all contractors involved with this project and incorporated in the City's project authorization.

Illinois Chorus Frogs

This project poses a high probability that Illinois Chorus Frogs could be incidentally taken during the excavation and construction of the extensive watermain. Associated with sandy soils, these frogs usually occur above the 100 year floodplain, but 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; how deep 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') 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 Department is concerned that 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.

Recommendation #1. The Department would like to stress that if Illinois Chorus Frogs are encountered during the construction phase, or during maintenance activities, due to work and equipment adjacent to records, there is the potential for incidental take to occur. 'Take' means, in reference to animals and animal products, to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. If a population of the Illinois Chorus Frog is confirmed within or near the project, work must immediately stop and the City of Edwardsville should

consider obtaining Incidental Take Authorization from the Department's Office of Resource Conservation, pursuant to 520 ILCS 10/5.5.

Recommendation #2. If any Illinois Chorus Frogs are encountered on or near the project's footprint, immediately contact Mark Phipps, IDNR District Heritage Biologist, (618/462-1181, ext. 137) or Dr. Paul Brunkow, SIUE, 618/650-2976, keeping in mind it is a criminal act for anyone to handle a listed species unless Incidental Take Authorization has been permitted. Personnel on site should watch the species until the proper authority arrives to handle the situation.

Recommendation #3. If work is to be conducted in early spring during this frog's breeding season (February – April), then the Department recommends that wetland delineations be conducted to determine the extent of ephemeral breeding ponds and a qualified Biologist be present to handle potential adult and juvenile frog encounters.

Recommendation #4. Equipment staging areas should 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 should 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); they prefer to be below ground from May to January.

Recommendation #6. Trenches and excavations dug as a result of this project should be covered at the end of each work day. Before starting work each day, trenches and excavations should be routinely inspected to ensure no frogs have fallen into, and become trapped, in them.

Recommendation #7. Vehicles and machinery should 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 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 (or turtles) from emerging, thus entombing the species in this area. If fencing is going to be placed around the well field site, plans should 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. Data should be provided to clarify whether the future drawdown will adversely impact water levels in these breeding ponds-if they are groundwater fed.

Ornate Box Turtles

This species was listed by Illinois as threatened in October 2009. Many populations have been adversely affected by 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.

This 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 could 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, and also provide basking areas where temperatures may rise more quickly in the morning or during cooler weather. Most of the Department’s observation records for this species are adjacent to roads or are recorded road-kills.

Recommendation #1. The Department would like to stress that if Ornate Box Turtles are encountered during the construction phase, or during maintenance activities, due to work and equipment adjacent to records, there is the potential for incidental take to occur. If a population of the Ornate Box Turtle is confirmed within or near the project, work must immediately stop, and the City of Edwardsville should consider obtaining Incidental Take Authorization from the Department’s Office of Resource Conservation, pursuant to 520 ILCS 10/5.5.

Recommendation #2. If any Ornates are encountered on or near the project’s footprint, immediately contact Mark Phipps, IDNR District Heritage Biologist, (618/462-1181, ext. 137) or Dr. Paul Brunkow, SIUE, 618/650-2976, keeping in mind it is a criminal act for anyone to handle, or move, a listed species unless Incidental Take Authorization has been permitted. Personnel on site should watch the species until the proper authority arrives to handle the situation.

Recommendation #3. All on-site personnel involved in the project should be educated on how to recognize this species. Color photos (of adults and juveniles) and educational materials should be distributed, discussed at pre-construction meetings, and displayed at work zones. This species is usually only seen above ground from mid- April to late-September, outside of its brumation season.

Recommendation #4. Trenches and excavations dug as a result of this project should be covered at the end of each work day. Before starting work each day, trenches and excavations should be routinely inspected to ensure no turtles have fallen into, and become trapped, in them.

Recommendation #5. Vehicles and machinery should stay off any soils that are defined as sandy and use matting as additional compaction avoidance.

Consultation on the part of the Department is completed. In accordance with 17 Ill. Adm. Code 1075.40(h), the City of Edwardsville must notify the Department of its decision regarding these recommendations, whether they will:

- Allow the action to proceed as originally planned;
- Require the action to be modified per Department recommendations (please specify which measures if not all will be required); or
- Forgo the action.

This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resources review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected species are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.

Cordially,



Kathi Davis
Division of Ecosystems and Environment
Impact Assessment Section
Office of Realty & Environmental Planning
217-785-5500

Enclosure

cc: Mark Phipps, IDNR/Region IV/Natural Heritage
Kent Boyles, IDNR/District 23/Wildlife
Scott Ballard, IDNR/Herpetologist
Joe Kath, IDNR/Office of Resource Conservation
Joe Phillipe, Illinois Historic Preservation Agency
John Tucker, Illinois Natural History Survey
Paul Brunkow, SIUE