



Illinois Department of Natural Resources

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www.dnr.illinois.gov

Pat Quinn, Governor
Marc Miller, Director

July 10, 2014

Mr. Joe Evers, City Engineer
Engineering Division
1900 Holmes Road
Elgin, IL 60123

**RE: Capital Corporate Center, Elgin, Kane County
Endangered Species Consultation Program
EcoCAT Review #1412503**

Dear Mr. Evers:

The Department has received a submission from Spaceco, Inc., for a proposed action which requires consultation with the City of Elgin 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* Parts 1075.

The Capital Corporate Center entails development of a business subdivision south of Mason Road. This area is in the watershed of Tyler Creek, which supports an extensive population of the state-listed threatened **Slippershell Mussel**, *Alasmidonta viridis*. The discharge of stormwater from the business park poses the risk of adverse modification of the Slippershell's essential habitat through raising the average temperature of the stream, siltation and sedimentation of the streambed substrate, and the discharge of pollutants collected from the project's drainage area, which may include landscaping chemicals (fertilizers and pesticides) and automotive pollutants such as fuels, fluids, polycyclic aromatic hydrocarbons (PAHs), and heavy metals.

The City of Elgin (Public Works), the Illinois Environmental Protection Agency, the Illinois Department of Transportation, the Illinois Department of Natural Resources, and the developers of residential subdivisions on either side of Tyler Creek have already invested heavily in measures to minimize or avoid adverse modification of these essential habitats and to promote conservation and recovery of the Slippershell Mussel. Past projects have entailed the relocation of a portion of Tyler Creek's channel and bridge replacement to improve traffic safety at the railroad crossing on Big Timber Road; the construction of a new municipal wastewater treatment facility with an enhanced wetland discharge treatment train, and state-of-the-art stormwater management trains in the respective residential subdivisions. These measures over the last decade and more have maintained or improved the numbers of Slippershells in Tyler Creek.

The drawings of the stormwater management facilities for the Capital Corporate Center submitted by Spaceco for the Department's review indicate the project will make use of pre-existing stormwater detention basins, which apparently discharge to an underground storm sewer that eventually transfers waters to an open ditch tributary to Tyler Creek.

The detention basins reviewed by the Department have a bottom depth one foot lower than the outfall structure. The retention of water in this zone permits the growth of emergent vegetation, the infiltration of a portion of storm waters, while plants provide a substrate for bacteria and invertebrates. All three (plants, bacteria, and invertebrates) aid in removing excess nutrients and automotive pollutants, but only for that portion of storm water retained. But when the bottom area is mostly full, virtually 100% of the storm runoff will quickly exit the basin with little or no treatment. While this configuration is superior to a standard dry basin, its benefits are limited.

Recommendation #1. All inflows should be routed to the upper end of each basin, as far as practicable from the outfall. This will maximize treatment time in the basin.

Recommendation #2. Pervious tributary areas should be landscaped using native plants to the extent feasible. Attractive mesic prairie seed mixes are available which, once established, require a minimum of maintenance, thus avoiding use of fertilizers and pesticides which often find their way into storm water. Native plants are generally deeply-rooted and facilitate infiltration of overland flows, while the high concentration of organic matter created by their root systems provides numerous carbon sites which capture harmful pollutants.

Recommendation #3. If stone check dams in perimeter ditches are proposed, consideration should be given to replacing them with a series of small rain gardens. Stone check-dams are prone to failure because such dams are often improperly installed. Improper installation may consist of failing to assure the lowest point on the check-dam is in the center, or in using stones that provide voids too large or too small between stones. If the lowest point on the crest is not in the center, over-topping flows are forced to one or both sides, causing erosion of the swale wall, often resulting in complete by-pass of the structure and additional sediment loading downstream. Improper void size either promotes turbulence around the stones which cause erosion of the swale floor or walls when voids are too large, or promotes void clogging when the voids are too small, which causes routine over-topping which can erode the swale floor at the toe of the check-dam as well as the side-slopes.

Small rain gardens in series also slow the rapid flow of water while cleansing it of pollutants and can permanently capture and retain water during smaller events. Though typically constructed with underdrains, this need not be the case.

Recommendation #4: Consideration should be given to routing a portion of roof run-off to an underground distribution system. Formal lawns and landscaping often require frequent watering for maintenance, placing additional demands on municipal water supplies which may become more frequently stressed as climate change produces warmer summer temperatures. Directing roof run-off to an underground distribution system retains a significant portion of site runoff while providing deep root watering for turf, shrubs, and trees, and also reducing any irrigation costs.

Though seemingly minor, these measures can make significant contributions to the quality of waters entering Tyler Creek and thus minimize any adverse effects to the Slippershell Mussel, without requiring major modification of the existing stormwater management system.

Consultation on the part of the Department is closed, unless the City of Elgin desires additional information or advice related to this proposal. In accordance with 17 Ill. Adm. Code 1075.40(h), the City should notify IDNR of its decision regarding these recommendations, whether it will:

- Proceed with the action as originally proposed;
- 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 which was not previously considered; or the proposed action is significantly modified; or additional species, essential habitats, 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 resource review primarily reflects the information existing in the Illinois Natural Heritage Database at the time of this consultation, 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 resources are encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations. Also, note that closure of consultation does not imply IDNR's authorization or endorsement of the proposed action.

Thank you for your consideration of these recommendations. Please contact me if you have questions regarding this review.

Sincerely,

Keith M. Shank
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cc: Irene Wiczowski, Spaceco Inc.