

**AECOM**

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February 24, 2009

Project Number: 108120 - 80720

Mr. Tom Goodeve  
Planner  
City of Oshawa  
50 Centre Street South  
Oshawa, ON L1H 3Z7

Dear Mr. Goodeve:

**Re: Peer Review of EIS of Farm Tech Ethanol Facility**

We are pleased to provide a peer review of two environmental reports prepared by Jacques Whitford Limited in support of a proposed ethanol production facility by FarmTech Energy Corporation on a property on the west side of Oshawa Second Marsh in the City of Oshawa.

These reports are:

- a) Environmental Impact Study, FarmTech Ethanol Facility, Oshawa, Ontario (March 2008); and
- b) FarmTech Ethanol Facility, Oshawa, Ontario Environmental Impact Assessment (July 2008).

Both reports document the existing environmental conditions and attempt to assess the impacts of the proposed facility. The Environmental Impact Study (EIS) was structured to address the *Environmental Impact Study Guidelines* from the Durham Region Planning Department, while the Environmental Impact Assessment (EIA) was prepared to specifically address the Canadian Environmental Assessment Act (CEAA).

The objective of the peer review is to evaluate and report on the methods, results and conclusions of both the EIS and EIA to ensure that the existing environmental conditions have been properly documented, and that the anticipated environmental impacts are adequately assessed.

We assume that the application applies only to a corn based ethanol production facility. Ethanol can be produced by other materials such as soy beans or cellulose which may have different impacts (e.g. need for auxiliary power production).

## Environmental Impact Study

The EIS makes little reference to planning context or requirements except it states that the report “is structured to meet the guidelines set out by the Durham Region Environmental Impact Study

Guideline". There is no reference to the Provincial Policy Statement (PPS) which should be addressed in any development proposal. The objectives of the EIS are to:

- Identify and describe existing biophysical features
- Assess potential impacts of proposed project on those features
- Recommend measures to reduce impacts

Secondary sources of information are listed in sections 1.1 and 1.2. This includes standard sources for obtaining information on species at risk and species data, as well as site specific information from other consultant reports. Field surveys were conducted on two site visits in the autumn. The report acknowledges that further studies may be required in the spring and summer breeding / growing season.

Figures 1 and 2 show a preliminary site layout in the context of the 22.3 ha property and the local assessment area. The EIS maps the 'Local Assessment Area' as the subject property only. General baseline environmental conditions based on literature sources describe climate, physiography, geology, soils, hydrogeology and land use in sections 2.1 and 2.2.

## Baseline Environmental Conditions

Species lists are provided of mammals, reptiles and amphibians based on literature, while the bird list is based on the autumn site visits. It is not clear from the bird list which species were recorded on the subject property and which were in adjacent Second Marsh. A total of 71 species were observed over 2 site visits indicating the importance of the site for bird migration. This is not surprising given its location along the Lake Ontario shoreline and beside Second Marsh. The EIS lists birds recorded from the Breeding Bird Atlas square but does not mention the large amount of information on Second Marsh birds (e.g., Canadian Wildlife Service, CLOCA, Marsh Monitoring Program).

Section 2.3.4 mentions the fish that are present in Harmony – Farewell Creeks watershed, however there is no description of that portion of Farewell Creek that lies immediately adjacent to the subject site.

The vegetation description provided in section 2.3.5 is very scant. All it states is that the property is mostly in agricultural production and there are some trees on Gifford Hill. In fact there is a hedgerow, old field and possibly meadow marsh on site which are not mentioned. There is no figure showing vegetation that is present on site or on immediately surrounding lands. A vegetation map is standard in any EIS. The vegetation occurring within at least 120 m on adjacent lands should also be mapped and described, particularly in the highly significant Oshawa Second Marsh wetland that lies immediately to the east.

Section 2.3.6 discussed species at risk and other provincially significant species reported from within 10 km based on the Natural Heritage Information Centre database. The EIS states that six significant wetland bird species are not likely breeding on the subject lands but has no discussion on their presence in the immediately adjacent Second Marsh. In fact, the Threatened Least Bittern is a

regular breeder in Second Marsh and has been recorded in 2007 in the southwestern portion (i.e., near the subject site) during breeding bird surveys by CLOCA (Satu Pernanen, *pers. comm.*). The EIS also states that the Threatened Blanding's Turtle has not been recorded anywhere in Durham Region since 1990 and therefore is unlikely to occur. I have personally observed Blanding's Turtle in Second Marsh in 2003, and another was reported by CLOCA in 2008, therefore there is potential that it could be using the subject site as a nesting area.

Section 2.3.7 lists natural areas occurring within 6 km of the site. The PSW located at the mouth of Oshawa and Montgomery Creeks only 600 m west of the subject site has been overlooked.

Sections 2.4, 2.5 and 2.6 do not relate to natural environment and therefore are beyond the scope of this peer review. The section 2.7 briefly discusses municipal planning but makes no reference to the PPS.

## Assessment of Environmental Impacts and Mitigation

In section 3.3.1 EIS states that it is expected there will be minimal impact from construction to wildlife on the local assessment area (site). The construction impacts will largely be due to noise, dust and human presence. The prevailing winds are from the west. With the openness of the site and nearby Lake Ontario, strong winds are often present and there is high potential of dust being blown into Second Marsh when there is a lot of bare exposed ground. Erosion and sediment controls such as silt fences need to be implemented as recommended in section 3.3.2 but they also need to be regularly inspected and repaired as necessary. Sediment and erosion measures often fail during storm events

The EIS recommends that construction take place outside the breeding bird season. Both Second Marsh and the area of Lake Ontario immediately south of the site are very important for large numbers of staging waterfowl during migration, and in the case of Lake Ontario, in winter also. Waterfowl are highly sensitive to human presence and will abandon the area if there is too much disturbance. This has not been identified.

During operation of the facility potential impacts of air emissions, noise, odour, lighting and effluent discharge have been identified. The EIS states that a certain level of sensory disturbance to wildlife has already resulted from existing industrial, agricultural and recreational activities. Currently Second Marsh is being impacted by surrounding land uses, but the nearest noisy industries are at least 300 to 500 m away from Second Marsh. The proposed Ethanol plant would be a lot closer and therefore a greater disturbance factor would be expected. The proposed berms will help somewhat but they are only 3 m high and therefore may not attenuate all of the noise and dust. Noise is a particular concern because the southwest area of Second Marsh is the farthest removed from Highway 401 and the CNR, and therefore relatively quieter than other areas of the marsh. The ethanol plant would become a noise source on the southwest corner. Odour may also hinder appreciation of Second Marsh by public users of the nearby Waterfront Trail.

Lighting is discussed in section 3.4.3.5 in the context of nearest neighbourhood and adjacent land uses. Lighting can also disturb wildlife in nearby Second Marsh. Lighting needs to be designed and directed so there is no light illuminating Second Marsh.

The visual impacts discussed in section 3.4.3.6 neglect to mention the view from the east across Second Marsh, which is where many visitors to the marsh would view the ethanol facility.

A stormwater management pond is proposed in the 120 m naturalized buffer. Given the sensitivity and significance of the adjacent marsh, the stormwater pond should be located outside of the buffer, since the pond also functions as an emergency spill receptor and containment system in the event of an accident in the plant. In addition there appears to be suitable area to accommodate a stormwater pond outside of the buffer.

## Conclusion

The EIS concludes that in their expert opinion the proposed ethanol facility is not expected to cause significant or irreversible effects on the natural environment provided that appropriate mitigation measures are implemented. The Mitigation measures need to be clearly stated in a separate section because currently they are cryptically stated throughout the text of section 3.0. A clear discussion of the proposed naturalized buffer would be useful.

On careful inspection of the Preliminary Site Plan Layout (Figure 2 in EIS), it appears that the overall footprint of the facility does not make the best use of available space. It shows a ring road with required lighting immediately next to the wetland buffer, while there appears to be a fairly large open area between the ring road and the main buildings to the west.

Overall we believe the EIS has not sufficiently described the natural environmental conditions of the site and immediately surrounding lands. The vegetation description is inadequate. The importance of waterfowl staging in the adjacent part of Second Marsh and Lake Ontario needs to be assessed. Two provincially and nationally Threatened species (Least Bittern and Blanding's Turtle) do occur in the nearby portion of Second Marsh and they have not been adequately addressed.

## Environmental Impact Assessment

The EIA is a substantially larger document than the EIS consequently it goes into greater detail and encompasses additional field investigations. The report is more structured to meet the CEAA and Ontario Environmental Assessment Act (OEAA). The overall objectives of the EIA are the same as the EIS. Under CEAA and OEAA, environmental features are regarded as 'valued environmental components' (VECs). The VECs identified in the EIS are:

- Soil
- Land Use

- Wildlife
- Aquatic Environment
- Vegetation
- Local Community

Background documents examined in a literature review are listed in sections 2.2 and 2.2.1.

## Environmental Characteristics

The geophysical environment based on literature is described in section 3.1 while the aquatic environment is briefly described in section 3.2. Table 3-2 lists the natural areas in the site vicinity but also does not identify the PSW on the north side of Oshawa Harbour.

Under section 3.3.1, vegetation of the subject site is discussed, however there is no figure showing the distribution of vegetation. Figure 3-3 shows some features but does not adequately depict existing vegetation. Vegetation in immediately adjacent portions of Second Marsh is not mapped or described. A plant species should be provided that lists species on the subject site and immediately adjacent part of Second Marsh to show whether any significant species are present.

Lists of mammals, reptiles and amphibians reported from the general area based on literature sources, are essentially the same as those in the EIS. In Tables 3-5 and 3-6 it is not clear which species were recorded on the subject land and which were recorded at adjacent Second Marsh. A breeding bird survey has been conducted in June of 2008, which is additional to the field surveys conducted for the EIS. The meadow on the east side of property likely supports some nesting waterfowl, which admittedly is difficult to detect without intensive surveys, but should be considered. The importance of Second Marsh for staging waterfowl has not been assessed. From the observation platform near the General Motors office, large numbers of water birds can be seen in the open water of the southwestern part of Second Marsh. This is probably because of the combination of suitable food and habitat in the open water as well as it being quite far removed from human presence and activity. Also the portion of Lake Ontario between Second Marsh and Oshawa Harbour is used by large numbers of migratory and wintering waterfowl. This has not been mentioned or assessed in the EIA.

Sixteen species of potential conservation concern are listed on Table 3-7 and are discussed in section 3.3.2.4. The EIA simply discusses species briefly and generally states that there is no habitat on the subject property but there may be in Second Marsh. The report does not seem to acknowledge that the proximity of the site may have some relationship to Second Marsh. Some of their comments about species at risk are not correct. Specific comments to some species follow:

Trumpeter Swan EIA states that it is not known to breed in the vicinity. In fact Trumpeter Swan does regularly breed in Second Marsh and this is shown in the Ontario Breeding Bird Atlas. There is suitable nearby habitat in the portion of Second Marsh. Trumpeter Swan with young has been recorded in Farewell Creek immediately east of subject site (pers. obs.).

Butternut The health of the single specimen found should be assessed and MNR should be contacted about appropriate mitigation.

Least Bittern This species is only mentioned but no discussion is provided as to its status in Second Marsh or how the proposed facility could affect it. Least Bittern is a regular breeder in Second Marsh and has been recorded in 2007 in the southwestern portion (i.e., near the subject site) during breeding bird surveys by CLOCA (Satu Pernanen, *pers. comm.*).

Blanding's Turtle There are recent records of this species at Second Marsh. The EIA states that there is no suitable nesting areas on the site. Blanding's Turtles nest in open areas such as fields or disturbed ground that may be well removed from the wetland they live in. Snapping Turtle nests have been recorded in the eastern field portion of the site (*pers. obs.*) The potential for Blanding's Turtle to nest should be discussed and investigated. Research has shown that Blanding's Turtles move further out from wetlands to nest than other turtles, therefore a larger naturalized buffer may be needed to sustain them.

## Assessment of Impacts

Impacts have been broken down into three phases: construction, operation and decommissioning. Tables 4-1 and 4-2 identifies the VECs to which an impact may be created by aspects of these phases.

The main mitigation methods that are proposed to reduce potential impacts are identified in Section 4.2.

Section 4.2.1 identifies the potential wildlife impacts during the construction phase as: sensory disturbance, habitat loss and fragmentation, and mortality. Sensory disturbance is perhaps most critical since the proposed development would only remove a limited amount of existing habitat. However its very close proximity to the relatively isolated southwestern portion of Second Marsh will increase noise and human disturbance in that area. This may result in avoidance by breeding birds and in particular by staging waterfowl. The significance of this effect has not been assessed or mitigated. Bird migration is one of the most important attributes of Second Marsh; landbirds as well as water birds. Consequently the impact to the migratory flyway needs to be considered.

Mitigation identified in the EIS includes additional surveys just prior to construction, limiting access, avoiding the breeding season, specific nest surveys if breeding season cannot be avoided, and a restoration plan for the buffers along Lake Ontario and Farewell Creek. Additional mitigation may be needed to minimize disturbance to staging waterfowl that are highly sensitive to human presence and disturbance.

Table 4-3 describes the anticipated residual effects of construction. It states that sensory disturbances are temporary, that habitat loss will be minimal and that by proper timing mortality will be minimized.

Impacts from operation of the facility fall under sensory disturbance and mortality. Noise, human presence, and lighting have been identified as possible impacts to wildlife. There is risk of collision between birds and structures, particularly tall lighted structures. The site is on a migratory pathway and subject to large numbers of migrating birds because of its proximity to Second Marsh and Lake Ontario. The importance for bird strikes to the taller structures of the proposed ethanol plant should be further investigated. Appropriate mitigations would be needed.

The restoration plan is shown in Appendix B. One of the key components is some increasing in area of the meadow buffer that currently exists on the east side of the site and along Lake Ontario. The fencing as shown on the restoration plan would effectively create a barrier between the meadow and Second Marsh for wildlife such as waterfowl, turtles, and medium-sized mammals. The fence instead should be placed between the naturalized buffer and ethanol facility so as not to restrict wildlife movement between the wetland and adjacent upland since many wildlife depend on this interface. Ideally the stormwater pond should be situated outside of the naturalized buffer.

## Overall Conclusions

The EIA and EIS cover much the same items but the EIA goes into greater detail and includes additional analysis, discussions and mitigations. Items that we feel need to be addressed by the EIA in greater detail can be summarized as follows:

- a) Vegetation communities on site and immediately surrounding portions of Second Marsh needs to be described and mapped in detail to better understand possible vegetation impacts;
- b) Plant and wildlife species lists should be prepared to clearly indicate what is on the site and what is on immediately surrounding lands so as to better understand how the species could be impacted;
- c) Waterfowl migration staging and wintering needs to be examined in adjacent part of Second Marsh and offshore Lake Ontario;
- d) Analysis of possible bird strikes on the structure of proposed facility;
- e) The visual impact of the proposed facility from the east side of Second Marsh where most marsh visitors would see it;
- f) Noise impacts on wildlife needs to be assessed, particularly since the marsh to the east provides significant wildlife habitat, and that portion currently has the lowest noise levels in the marsh. The associated Acoustic Assessment Report essentially only addresses noise impacts to humans; and
- g) More detail on potential impacts to species at risk, in particular Least Bittern and Blanding's Turtle.

Overall I agree that the actual site of the proposed ethanol facility may not be highly significant from an ecological perspective, however, its proximity to the provincially significant Second Marsh as a highly productive and sensitive wildlife habitat cannot be overstated. Second Marsh is not only a provincially significant wetland and Area of Natural and Scientific Interest (ANSI), but it supports a high diversity and number of marsh breeding birds and it is critically important for staging of migrants. Considerable effort and money by several organizations have gone into restoring the ecological function of this wetland, and conditions have significantly improved in the last decade as a result. It is imperative that the proposed ethanol facility does not undermine those efforts. Given the sensitivity of staging waterfowl, potential for migratory bird collision with the structure and the visual landscape as viewed from the east side of Second Marsh, a 120 m naturalized buffer may not be sufficient.

In addition we believe that the guidelines in the Industrial Categorization Criteria (Procedure D-6-1) prepared by the Ministry of the Environment (1995) need to be considered in this application. It states that a minimum separation distance of 300 metres is typically required between Class III industry and sensitive land uses. The proposed ethanol facility would qualify as a Class III Industry. Under MOE Procedure D-1-3, Land Use Compatibility: Definitions, 'Sensitive Land Use' *may* be a part of the natural or built environment including: "(v) bird/wildlife habitats or sanctuaries." Because of the sensitive and significant features of Second Marsh we believe that it could qualify as a 'Sensitive Land Use', These guidelines need to be addressed in the EIS.

Until the identified outstanding issues are addressed, we are unable to concur with the EIS's conclusion that with appropriate mitigation 'it is not anticipated that there will be any residual effect from the development of this project', and we cannot confirm whether the proposed mitigation measures (including buffers) are sufficient.

If you have any further questions of need clarification please contact the undersigned.

Sincerely,  
**AECOM Canada Ltd.**

A handwritten signature in black ink, appearing to read 'James Kamstra', with a long horizontal line extending to the right.

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JK:pc  
Attach.