

## **Windmills: Noise Issues; Siting and Scoping; and Legal Issues**

*(City Council on December 14, 15 and 16, 1999, amended this Clause by adding thereto the following:*

*“It is further recommended that the communication (undated) from the President, Citizens Concerned About the Future of the Etobicoke Waterfront, be referred to the Commissioner of Works and Emergency Services for further consideration and report thereon to the Works Committee.”)*

### **The Works Committee:**

- (1) recommends the adoption of the following report (November 18, 1999) from the Commissioner of Works and Emergency Services, entitled “Windmills and Noise Issues in Urban Areas (All Wards)”;** and
- (2) reports, for the information of Council, having received the report dated November 18, 1999, from the Commissioner of Works and Emergency Services entitled “Windmills: Scoping and Siting, Lakeshore-Queensway and East Toronto (Wards 2 and 26)”, and the report dated November 25, 1999, from the City Solicitor entitled “Approval Process for the Siting of Windmills”:**

### Purpose:

To address questions regarding the potential of windmills to cause noise, and recommend standard separation distances and procedures to be followed in respect to noise issues when siting windmills in Toronto.

### Financial Implications and Impact Statement:

There are no financial implications to the City of Toronto resulting from this report.

### Recommendations:

It is recommended that:

- (1) City Council adopt as its approved practice to reduce noise impacts, the use of:
  - (a) a 200 metres separation between windmills and residential low-rise dwellings;
  - (b) a 300 metres separation between windmills and high-rise residential buildings;and

- (c) a 50 metres separation between windmills and sensitive natural areas or sensitive park use areas;

unless lesser distances can be demonstrated to be similarly appropriate in keeping with the spirit and assumptions of this report;

- (2) Council require noise impact assessment statements regarding specific siting proposals for windmills on City lands; and
- (3) City Council require noise compliance monitoring to be undertaken following the installation of windmills.

#### Background:

City Council, at its meeting of October 26 and 27, 1999, approved Clause No. 1 of Report No. 4 of The Works Committee entitled “Approval Process for the Siting of Waterfront Windmills”, with amendments. Recommendation No. B(9) requested that the Commissioner of Works and Emergency Services submit a report to the Committee on noise levels produced by commonly used wind turbines. This report addresses that request.

The issue is that wind turbines are perceived as being noisy and cannot be appropriately located within, or in close proximity to, residential areas, parks or natural areas. This report presents noise levels associated with typically sized wind turbines (660 kW) as have been proposed by Toronto Hydro and TREC for installation on City lands, evaluates the use of commonly employed separation distances around the world, and recommends standards for use within Toronto in respect to residential and park areas (including natural areas).

#### Comments:

Windmills, also known as wind turbines, generate sounds. Unwanted sound can be defined as noise. Noise impacts and their perceived significance vary and depend on the level of intensity, frequency, frequency distribution and the pattern of the noise source; ambient or background noise levels; terrain between emitter and receptor; and the nature of the noise receptors.

The effects of noise on people can be classified into three categories:

- the subjective effects of annoyance, nuisance, dissatisfaction;
- the interference with activities such as speech, sleep or learning; and
- physiological effects, i.e., direct health effects, such as anxiety, tinnitus, or hearing loss.

The sound levels associated with environmental noise generally, including wind turbines specifically, produce potential effects that can normally only occur in the first two categories. Workers in industrial plants and around aircraft can experience noise effects in the last category.

The City should ensure that sound levels as may be created by wind turbines are not intrusive at the nearest residential dwellings, or in any nearby sensitive municipal and public spaces, such as

sensitive natural areas or sensitive park use areas. The amount of disturbance associated with a noise source depends on a number of factors. These factors include the nature of the sound source, the level and type of ambient noise, and the distance of the recipient from the source. More specifically, the evaluation of any potentially intrusive sound level involves an assessment of:

- noise source levels and type (including frequency, time pattern and intensity);
- recipient area ambient noise levels, including location relative to other uses (e.g., roads), land use type (e.g., residential or industrial) and other environmental factors (e.g., topography and wind regime);
- noise decay with distance, shielding and attenuation; and
- noise channelling with topography and its passage or “bouncing” over large water areas or other hard surfaces.

Specific noise levels are usually “estimated” as an alternative to monitoring which would require a considerable time sequence to capture all the possible permutations among different wind speeds, wind directions, air density, precipitation, air stability, and air temperature. Sound meters cannot be operated under very windy conditions. Wind turbines, however, are more likely to be perceived as intrusive under calm rather than stormy conditions.

A noise impact statement, as is generally required by the City of Toronto in the context of a development proposal review, typically addresses the above in respect to particular sources or developments from three perspectives:

- what is the impact of the source on the environment?
- what is the impact of the environment on the source? and
- what is the impact of the source on the source?

Municipal Standards:

Wind turbine siting related local land use planning standards attempt to deal with the complexity of noise in specific local situations. Site selection criteria are often based on “distance from” criteria whereas more detailed assessment is based on “noise received at” criteria. Evidence suggests that it is noise levels at potentially impacted dwellings rather than distance from wind turbines that should drive final siting and planning decisions.

For example, local government requirements in nine California counties indicate a variety of wind turbine related standards that have been adopted in respect to noise. All but one county established a maximum permitted dB(A) level. These vary from “not to exceed 65 dB(A)”, to “not to exceed 45 dB(A) for more than five minutes in any hour or to exceed 50 dB(A) for any period within 50 feet of a home, school, church, hospital or public library”. The ninth county establishes a simple requirement of “not closer than 1000 feet in an upwind direction from any dwelling, nor closer than 300 feet in any other direction”. An equivalently simple, and prudently cautious, guideline of “not-closer-than 300 metres” has been adopted in Great Britain by the British Wind Energy Association in respect to residential dwellings. The standard reflects the normally rural and hilly siting of wind turbines in Britain.

Indeed, most wind turbines have been located in rural areas and siting separation standards reflect this. But, rural areas are typically quieter than urban areas, and the distances may be more cautionary than is necessary. Knowledge of noise transmission, attenuation and channelling characteristics suggest that simple distance standards may be over cautionary in low-density urban areas of high ambient noise, but under protective in denser urban areas composed of high rise developments. This relates to noise attenuation in low-density urban and suburban areas provided largely by trees and other ground cover, and the bouncing and mixing effect of sound waves from wind turbine hub sources from higher elevations, in high density areas.

#### Perceptions:

Perceptions are often historically based rather than currently supported. This is seemingly also the case for wind turbines. Early wind turbines in Europe were often promoted as inaudible. They were not. But neither did they create noise levels “equivalent to that of a helicopter at take-off”, as was suggested in the European press. However, much of the presently accepted perception of noise levels is based on early installations in Europe.

Those that were built two decades or so ago, as in Wales (U.K.), generated considerable local antagonism that was focused in perceptions of noise impacts. Today, the older technologies have been updated and current state of the art installations generate substantially lower sound levels. Recent direct drive turbine developments are purported to be more efficient and almost inaudible as they do not have gearboxes. However, the noise and vibration associated with standard wind turbines should not be regarded as insignificant, and appropriate safeguards need to be taken.

#### Technical Appendix:

The attached appendix provides technical information used directly in support of the conclusions reached in developing this report. It includes discussion of windmills as a source of various sound types, typical ambient sound pressure levels (i.e., noise levels) experienced in residential areas (from quiet suburban to very noisy urban), and sound level decay with distance.

#### Noise and Windmill Siting in Toronto:

Given that the quietest “quiet suburban” residential ambient noise level according to the US-EPA is approximately 45 dB(A) and the quietest experienced (as measured by City staff) residential ambient level in Toronto is typified as approximately 45 dB(A), and given that manufacturers measurements indicate that this is normally achieved at a distance of 200 to 250 metres, a policy of prudent avoidance would suggest 250 metres separation between a wind turbine and a residential dwelling. However, within the wind related waterfront areas indicated under other siting criteria adopted by Toronto Hydro and TREC, the ambient noise level in the vicinity of residences is typically higher, and a prudent value of 200 metres would not be inappropriate.

In high rise dwelling areas, noise will be less likely to be attenuated in all cases. Wind turbine hub noise could travel directly from point source at 50 metres elevation to apartments at the same elevation with significantly less attenuation. Therefore, a logical and reasonable rule of thumb

would be to ensure as part of an initial scoping exercise to separate wind turbines from residential property by a buffer separation of 200 metres for low-rise dwellings and by 300 metres for high-rise dwellings.

For open spaces and park spaces, a buffer separation would also seem prudent but there is no precedent for this either in respect of human or ecological functions. A range of functions is fulfilled within parks. These vary from the active sports activities (e.g., as on soccer pitches or baseball diamonds) that may be more tolerant of noise, to the more sensitive use areas in parks that provide solitude (e.g., as in ornamental gardens or along nature trails), where noise is more likely to be an issue of concern.

Urban park areas that offer “quiet solitude” are not noise free. The same ambient urban noise level ranges will be measurable in such spaces as in residential areas even though the perception may be that such space is noise free. No standard sound level or separation distance has been identified in respect to sensitive natural areas or sensitive park use areas and noise sources.

As a surrogate standard, the Province of Ontario’s standards regarding noise in “Outdoor Living Areas” [as provided in “Noise Assessment in Land Use Planning: Requirements, Procedures and Implementation” (MOE, May 1997)] can be examined. In simple terms, the standard suggests that for road noise sources no control measures are required if the day time sound level is less than or equal to 55 dB(A), and for rail noise sources no control measures are needed if day time sound levels (outside bedroom windows) are less than or equal to 60 dB(A). If sensitive park use areas and outdoor living places are equated as equal to “outdoor living areas”, the standard of 55 dB(A) can be recommended. For wind turbines this translates to a separation distance “rule-of-thumb”, based on a normalized wind speed of 28.8 km/h (8m/s) at 10 metres above the ground surface, for turbines equivalent to the Tacke TW 600, of 53 dB(A) at 50 metres, and of 56 dB(A) at 25 metres. To best ensure prudent compliance with the outdoor living standard of 55 dB(A) a distance of 50 metres separation between sensitive natural park areas and sensitive park use areas and the siting of a wind turbine appears sufficient.

#### Noise Impact Statements:

Prior to final site selection and approval, the wind turbine proponents should undertake a noise impact statement, subject to the satisfaction of City Council, if the selected site is within 250 metres of a low-rise dwelling or within 350 metres of a high-rise dwelling. The noise impact statement need not address the impact on the environment on the wind turbine, or the effect of the wind turbine on itself, as no office or dwelling space is to be included (this would not hold true if a wind turbine were to be sited on top of a building), and need only address the impact of the wind turbine on the environment external to the wind turbine. Further, the noise impact statement should also address the site specifics of impacts on nearby park uses within 50 metres distance.

#### Post-Installation Monitoring and Compliance:

Wherever a wind turbine is installed, it would be prudent at that time to ensure its compliance with noise standards through appropriate monitoring and analysis. This could be made a

condition of a lease arrangement should a wind turbine be sited on City land. Any subsequent complaint resulting from mechanical deterioration or blade damage, that renders the wind turbine noisier than at the time of installation, should be investigated under the City's Noise By-law and appropriate action enforced where necessary.

#### Conclusions:

Though seldom established in dense urban areas, there is no apparent reason to exclude modern wind turbines based on noise issues provided that reasonable separation distances are adhered to or amended on a site-specific basis.

A separation of 200 metres from low-rise residential and 300 metres from high-rise residential buildings appears to be prudently adequate. A separation of 50 metres from sensitive park use areas also seems prudent.

Any final site selection should provide a Noise Impact Statement to the satisfaction of the Commissioner of Works and Emergency Services prior to final site approval in keeping with the spirit of this report. Further, post construction monitoring should establish a base line of actual on site noise data from source to nearest receptors to confirm compliance with the Noise Impact Statement, and to offer a benchmark against any future adverse change of the sound level caused by equipment deterioration.

Staff representing the Commissioners of the Economic Development, Culture and Tourism Services Department and the Urban Planning and Development Services Department were consulted in preparing this report.

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## TECHNICAL APPENDIX

#### Sound Source Levels:

Sounds created by wind turbines come from several sources which result in several sound types including: broadband noise from the blades; tonal noises from fans, generators, pumps and gearboxes; infrasonic noise due to tower shadow; and impulsive noises from brake clamping/release, limit stops and general creaks. Wind turbines create noise from within the outer casing, or nacelle, that houses the turbine generator and the bearings that link to the rotating blades. The noise levels immediately outside the nacelle are considerably less than the levels inside. These are seldom measured. The point source noise level measurements are

typically provided as a manufacturer's specification derived from factory floor testing within 1 metre of the equipment rather than noise levels on the outside of the nacelle casing.

The source-noise pressure level inside a turbine nacelle of a 600 kW wind turbine, varies with the wind speed at hub height and blade rotation speed but is typically between 95 dB(A) and 100 dB(A) for wind speeds in their normal operating range between 14.4 km/h (4 m/s) and 36 km/h (10 m/s). A 600 kW Tacke wind turbine has been installed by Ontario Power Generation at Tiverton near the Bruce Nuclear Power Station and is similar in size to those being considered for use in Toronto by TREC and Toronto Hydro. The Tacke 600 installation has a technical noise-source specification of 98.6 dB(A). Wind speed varies naturally but blade rotation speed is artificially held constant, as on the Tacke 600 at either 18 rpm or 27 rpm through breaking devices that create different noise levels in consequence of different breaking requirements. Changes of rotation speed, including the extremes of starting and stopping, typically create additional noise.

There is also noise created by the rotation of the blades themselves. The noise varies with the speed of rotation and blade design. The leading edge of the blade is of considerable importance. Current leading edge technology is attempting to duplicate the design of the leading edge of an owl's feathered wing (owls as hunters benefit from their "silent wings") on the leading edge of a turbine blade. However, the noise of the blades alone is typically a barely audible "swoosh" (as detected at 50 metres from turbine base) as a blade passes in front of the tower. This obviously varies as the nacelle and blades are designed to operate in upwind or downwind directions.

Noise levels also vary with the number of wind turbines installed. Obviously, "wind farms" comprised of many wind turbine units are noisier than single turbine installations.

#### Ambient Noise Levels:

Ambient, or background, noise levels vary by land use in general and by other specific site factors in particular. Residential and rural areas are more sensitive to noise intrusions because of their relatively low ambient noise level.

The US Environmental Protection Agency and other sources have developed dB(A) ranges for a variety of common noise sources and typical residential locations.

<u>Residential</u> <u>Description</u>	<u>Typical Sound</u> <u>Pressure Level dB(A)</u>
Quiet Suburban	45 – 52
Normal Suburban	53 – 57
Urban	58 – 62
Noisy Urban	63 – 67
Very Noisy Urban	68 – 72

Experience has shown that typical residential values in Toronto run the gamut from quiet suburban equivalent to very noisy urban equivalent and vary from 45 dB(A) to 75 dB(A).

A further complication is that quantitative sound pressure level measurements may not reflect everyone's qualitative assessment. For example, one person's "deafening" may be another's "silence". (For example, "deafening" complaints, when field investigated by City staff some times, do not even register on the City's sound meters.)

**Distance Decay:**

In essence, sound pressure levels diminish with distance from a point source at a rate of approximately 3 dB(A) for every doubling of the distance from the point source. The accuracy of the first distance and noise measurement is critical if this assumption is going to be relied upon to predict noise decay from a point source. As noted above, manufacturers' specifications are typically equivalent to levels inside the nacelle not immediately outside or beyond. Certain inherent dangers are associated with taking measurements one or two metres beyond the nacelle at operating height except under the calmest of conditions, but that is when the turbine does not normally operate as wind speed is too low (i.e., less than 4 m/s). Consequently, few (if any) point source measurements external to the nacelle are available.

However, manufacturers' measurements of ground level noise levels, averaged for different wind speeds and taken in downwind directions, as for installations of a Vestas V47 turbine and a Tacke 600 turbine reveal some interesting similarities and implications. The data has been normalized for a wind speed of 8 m/s (28.8 km/hr) and a height of 10 metres above ground (weather station wind anemometer readings are normally taken at this height).

<u>Distance Turbine</u>	<u>From Vestas V47 (660 kW) Noise Levels dB(A)</u>	<u>Tacke TW 600 (600 kW) – Noise Levels dB(A)</u>
@ 100 m		49.9
@ 200 m	46.5	44.3
@ 250 m	44.4	
@ 300 m	42.7	39.0
@ 400 m		35.6
@ 500 m	37.4	

**The Works Committee submits the following report (November 18, 1999) from the Commissioner of Works and Emergency Services, entitled "Windmills: Scoping and Siting, Lakeshore-Queensway and East Toronto (Wards 2 and 26)":**

Purpose:

To place before the Committee, documents as prepared by the proponents and as requested by Committee and Council members, that describe the environmental assessment process including the public consultation process, and the siting process including recognition of preferred sites.

Financial Implications and Impact Statement:



There are no financial implications to the City of Toronto resulting from this report.

Recommendation:

It is recommended that this report be received for information.

Background:

City Council at its meeting of October 26 and 27, 1999, in addressing Clause 1 embodied in Report No. 4 of the Works Committee, entitled "Approval Process for the Siting of Waterfront Windmills", approved the Clause with further amendments.

This report addresses the following recommendations as amended and approved by Council.

Specifically Council amended the Clause by:

- (1) amending Recommendation No. B(4) of the Works Committee to read as follows:  
  
“(4) Toronto Hydro and TREC, in consultation with the Commissioner of Works and Emergency Services, be requested to report back to the Works Committee for its meeting of December 1, 1999, if possible, on at least one preferred site in the City of Toronto where windmills could be located, and report back within three months, on other potential sites throughout the City of Toronto where windmills can be located, with specific attention to the former stockyards and rail corridors, brown field sites, Hydro corridors and other potentially suitable sites.”:
  
- (2) adding to Recommendation No. B(6) of the Works Committee the words “such report to include parkland/open space” so that such recommendation shall now read as follows:  
  
“(6) the question of not siting on lands zoned G, GR or GM, be referred to the Commissioner of Works and Emergency Services for a report back to the Committee when dealing with the specific siting, such report to include parkland/open space;”:
  
- (3) deleting from Recommendation No. B(7) of the Works Committee the words “Wychwood yards on Christie Street”, so that such recommendation shall now read as follows:  
  
“(7) notwithstanding Recommendation No. (6), TREC, in consultation with Works and Emergency Services Department staff, be requested to examine the following locations and report back to the Committee on these sites as part of the site selection process:  
  
- 43 Junction Road;  
- south embankment of EarlsCourt Park;

- 115 Wiltshire Boulevard and northern property;
- 640 Lansdowne Avenue;
- Union Street north of Turnberry;” and

Council further amended the Works Committee Recommendation No. (3) to read as follows:

“(3) that City staff be requested to report further in the event that City owned or leased lands are identified as preferred site locations through the environmental assessment process, and to clarify what, if any, additional approvals, leasing agreements, or zoning amendments would be required, and how best obtained, at that time”.

The Works Committee had also added the following Recommendation No. B(5) which reads as follows:

“(5) the Commissioner of Public Works and Emergency Services be requested to report to the Works Committee on a public consultation process that could be undertaken in the evaluation of such potential sites”.

This report addresses most but not all components of the above recommendations.

#### Comments:

In essence, the request to report back to the Works Committee for its meeting of December 1, 1999, on at least one preferred site, triggers the need to also address several other report requests at the same time. However, not all aspects of all the requests can be fully addressed at this time and further reports will be required and will be provided in the New Year.

Specifically, the request “to identify at least one preferred site” makes it is necessary to report on “not siting windmills on lands zoned G, Gr or Gm, when dealing with the specific siting”, and “to report further in the event that City owned or leased lands are identified as preferred site locations through the environmental assessment process, and to clarify what, if any, additional approvals, leasing agreements, or zoning amendments would be required, and how best obtained, at that time”.

In order to avoid the potential of invalidating the spirit, if not the specific wording, of the environmental assessment process, (which might thereby put the windmill project at risk) by identifying preferred sites prior to completing the environmental assessment process, it is imperative that the identification of preferred sites be clearly identified and accepted as part of the environmental assessment process. That process must also include a clear and accepted public consultation component.

To that end, TREC and Toronto Hydro have engaged Dillon Consulting and prepared the report “Wind Turbine Environmental Assessment: Scoping/Terms of Reference, November 1999”. This document outlines the assessment process that TREC and Toronto Hydro are undertaking

and includes an outline of the public and public agency consultation process that the proponents have undertaken to date, that is ongoing, and that is proposed for the future.

The recommendations to address zoning matters as included as part of Recommendation No. B(6) and required zoning amendments as part of Recommendation No. A(3) are not addressed here, but will be addressed in a subsequent report when specific siting locations are identified. At this point, TREC and Toronto Hydro have prepared the report “Siting Windmills in Toronto” which does not identify preferred sites on G or similarly zoned lands. The associated staff report regarding “Windmills and Noise Issues in Urban Areas” (November 18, 1999) recommends a separation of 50 metres distance between a windmill and a sensitive natural park use or a sensitive human activity function in a park; thus the potential conflict of permitted uses within or near to public parks is avoided.

Questions surrounding the possibility of Official Plan, and/or Zoning By-Law amendments, and/or the tests of the use being a minor variance are still being examined and will be reported on subsequently, as will other legal aspects relating to leasing arrangements, following the identification of a specific location within the larger more encompassing areas of the preferred sites. At the present stage of investigation, the questions do not appear to lend themselves to one consistent answer for all of the preferred sites identified below, nor indeed, in two cases, to one consistent answer across all of the same sites.

In the report “Siting Windmills in Toronto”, the proponents have identified potential sites across Toronto and the essential and comparative criteria by which they have identified preferred sites. The most significant and limiting criteria relate to wind power and the degree of wind disturbance, rather than wind speed, and to separation from residential dwellings. For example, a 20 percent change in the mean wind speed from 5 m/s to 6 m/s equates to an 80 percent difference in anticipated wind power. Available wind power is the significant factor in determining economic viability. The proponents have concluded that the wind power requirements heavily encourage a waterfront location for such windmills. The need to maintain an appropriate distance from residential dwelling areas also effectively negates the potential to make use of small open lots or spaces as can be found across the City. Their use of a 200 metres separation between windmills and residential dwellings is in keeping with the associated staff report “Windmills and Noise Issues in Urban Areas” (November 18, 1999).

The proponents have also completed a report entitled “Wind Resource Assessment for Toronto: Preliminary Assessment of Six Urban Sites” which addresses the specific locations identified for consideration by TREC and Toronto Hydro in Recommendation No. B(7). All of the sites addressed in this report are located on industrial or park land with residential dwellings in closer proximity than is recommended in the associated staff report dealing with noise or are deemed inappropriate because of proximity to transmission lines.

The proponents have identified the following as being their “preferred sites” at this time:

- Ashbridges Bay Sewage Treatment Plant (formerly the Main Treatment Plant);
- TEDCO lands at Leslie and Unwin; and

- R. L. Clark Filtration Plant.

Further work as to the specific location to be selected and recommended within the preferred sites is being undertaken by the proponents.

Conclusions:

The proponents have provided reports that identify the environmental assessment process to be followed, identify sites examined across Toronto and the criteria used as part of the environmental assessment process to identify preferred sites. Other sites from across Toronto are still to be examined and judged against the same criteria and will be addressed in subsequent reports in keeping with Recommendation No. B(4).

The preferred sites as identified by the proponents, given appropriate specific siting, as will be reported on in detail in a subsequent report, are in keeping with the separation distances recommended in the associated staff report "Windmills and Noise Issues in Urban Areas" (November 18, 1999).

Staff representing the Commissioner of Urban Planning and Development Services were consulted in preparing this report.

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List of Available Reports:

1. "Wind Turbine Environmental Assessment: Scoping/Terms of Reference, November 1999". Prepared for TREC and Toronto Hydro by Dillon Consulting.
2. "Siting Windmills in Toronto" prepared by TREC for TREC Windpower Co-operative and Toronto Hydro, (1999).
3. "Wind Resource Assessment for Toronto: Preliminary Assessment of Six Urban Sites", prepared for TREC and Toronto Hydro by Zephyr North.

Councillors and other interested parties may obtain these reports on request from the office of the City Clerk.

**The Works Committee also submits the following report (November 25, 1999) from the City Solicitor entitled "Approval Process for the Siting of Windmills":**

Purpose:

The purpose of this report is to report to the Committee on the legal issues, as requested by Committee and Council, as contained in Clause No. 1 of Report No. 4 of The Works Committee, adopted by Council at its meeting on October 26 and 27, 1999.

Financial Implications and Impact Statement:

There are no financial implications to the City of Toronto resulting from this report.

Recommendation:

It is recommended that this report be received for information.

Background:

The Works Committee, at its meeting of October 6, 1999, in considering a report from the Commissioner of Works and Emergency Services, dated September 23, 1999, requested, among other matters, a report from the City Solicitor on the bonusing aspects of allowing the production of a saleable commodity on City-owned property.

City Council at its meeting of October 26 and 27, 1999, in addressing Clause No. 1 embodied in Report No. 4 of the Works Committee, entitled "Approval Process for the Siting of Waterfront Windmills", approved the Clause with further amendments. Council requested the City Solicitor to submit a report to the Works Committee on any legal liability that the City of Toronto may have with respect to the joint venture between TREC, Toronto Hydro and the City.

Comments:

1. Legal liability in Joint Venture between TREC, Toronto Hydro and the City:

A review of the information on the windmill siting project indicates that the proponents of the project are TREC and Toronto Hydro. In adopting the report from the Commissioner of Works and Emergency Services, dated September 23, 1999, Council has approved in principle the siting of windmills on City-owned land or lands leased by the City. The Commissioner's report also contained the recommendation that City staff report further in the event such City lands are identified and, among other matters, to clarify what additional approvals and leasing arrangements would be required.

There is nothing to date to indicate that the City is a part of the joint venture but the reports and recommendations contemplate that the City could be a landlord with the joint venture as a tenant. Given this contemplated relationship, there would appear to be no direct involvement giving rise to potential liability. Any potential lease arrangement would in usual fashion provide for the tenant's use of the property and appropriate indemnities.

2. Bonusing Aspects of Allowing the Production of a Saleable Commodity on City-owned Property:

As indicated above, the details of any potential lease arrangement are to be reported on at the appropriate time as a site or sites are finalized in the process. It is therefore premature to address any bonusing issues that could arise. Section 111 of the Municipal Act sets out the prohibition against bonusing. Subsection 111(1), in particular, states as follows:

111. (1) Despite any general or special Act, a council shall not assist directly or indirectly any manufacturing business or other industrial or commercial enterprise through the granting of bonuses in aid thereof, and, without restricting the generality of the foregoing, the council shall not grant assistance by,

- (a) giving or lending any property of the municipality, including money;
- (b) guaranteeing borrowing;
- (c) leasing or selling any property of the municipality at below fair market value;
- (d) giving a total or partial exemption from any levy, charge or fee.

In respect of the particular matters that are prohibited, they will be addressed as details of any potential leasing arrangement are finalized.

Conclusions:

- (1) There is nothing to date to indicate that the City is a part of the joint venture but the reports and recommendations contemplate that the City could be a landlord with the joint venture as a tenant. Given this contemplated relationship, there would appear to be no direct involvement giving rise to potential liability.
- (2) In respect of the bonusing that is prohibited by section 111 of the Municipal Act, it can only, and will, be addressed as details of any potential leasing arrangement are finalized.

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The Works Committee reports, for the information of Council, having also had before it during consideration of the foregoing matter the following communications:

- (i) (November 23, 1999) from Mr. Cameron Miller, Toronto, Ontario, expressing support for the placement of one or two wind turbines on the waterfront in Riverdale;
- (ii) (November 29, 199) from Mr. Dan McDermott, Director, The OntAIRio Campaign, urging the City of Toronto to approve the siting of the three wind turbines at the identified locations;

- (iii) (November 30, 1999) from Ms. Liz White, Director, Animal Alliance of Canada, recommending the adoption in principle of the three preferred waterfront site locations, and making further recommendations with respect thereto;
- (iv) (November 24, 1999) from Mr. John Mills, Regional Director General, Environment Canada, outlining Environment Canada's involvement in the project to install wind turbines on Toronto's waterfront;
- (v) (November 25, 1999) from Dr. Jim Salmon, President, Canadian Wind Energy Association, expressing support for the proposed installation of wind turbines on the Toronto shoreline;
- (vi) (undated) from Ms. Pat Ciufu, Co-ordinator of Stepstone to the Don, expressing support for the location of windmills in South Riverdale;
- (vii) (November 30, 1999) from Ms. Gillian Flower, Toronto, Ontario, expressing support for the installation of wind turbines on Toronto's lakeshore;
- (viii) (undated) from Ms. Penny Thompson, submitting results of a survey on public attitudes of the proposed siting of wind turbines in the eastern beaches area, Toronto; and advising that an assessment of the survey results reveals an overwhelming support for the TREC and Toronto Hydro project;
- (ix) (undated) from Dr. Barry McGrory, Toronto, Ontario, urging the Committee to support the proposed wind turbines as quickly as possible;
- (x) (October 6, 1999) from Mr. Richard Brault and Ms. Dianne Croteau, Studio Innova Inc., expressing their support for the construction of two wind turbines on Toronto's waterfront;
- (xi) (December 1, 1999) from Ms. Jennifer Morrow, Toronto Atmospheric Fund, recommending that the Works Committee authorize the siting of the TREC wind turbines on the Toronto waterfront;
- (xii) (November 30, 1999) from Ms. Lynn D. Fairweather, Toronto, Ontario, expressing support of the installation of wind turbines on the shores of Lake Ontario in Etobicoke and in the Beach;
- (xiii) (November 30, 1999) from Mr. Ross Harris, M.Sc., Senior Biologist, LGL Limited, environmental associates, advising of the preliminary results of a literature review of birds/wildlife-wind turbine interactions as a background document to the Federal Environmental Assessment, which suggest that impacts on birds and other wildlife will not be significant, and further advising that the literature review is still in progress;

- (xiv) (December 1, 1999) from Ms. Karey Shinn, Chair, Safe Sewage Committee, outlining concerns with respect to the proposed wind turbine project;
- (xv) (December 1, 1999) from Mr. John Carley, Co-Chair, Friends of the Spit, suggesting amendments with respect to separation between windmills and sensitive natural areas or park use areas;
- (xvi) (December 1, 1999) from Ms. Jacqueline Courval, Co-Chair, Friends of the Spit, expressing concerns with respect to the lack of public consultation with respect to the approval process for the siting of waterfront windmills; and
- (xvi) (November 29, 1999) from Ms. Silvia Langer, Program Manager, Greenest City, in support of the site in south Ward 25 for Toronto's first renewable energy generating windmill.

The following persons appeared before the Works Committee in connection with the foregoing matter:

- Ms. Joyce McLean, Manager, Green Energy Services, Toronto Hydro; Mr. Bryan Young, General Manager, Toronto Renewable Energy Co-operative; Ms. Laurie Bruce, Dillon Consultants; and Dr. Ross D. James;
- Mr. John Carley, Friends of the Spit, and submitted a communication with respect thereto;
- Ms. Karey Shinn, Co-Chair, Safe Sewage Committee, and submitted material with respect thereto;
- Ms. Lois Corbett, Toronto Environmental Alliance, also representing Greenpeace Canada, Pollution Probe, Ontario Clean Air Alliance, Sierra Club of Canada, and the David Suzuki Foundation;
- Ms. Liz White, Director, Animal Alliance of Canada, and submitted a communication with respect thereto;
- Ms. Debra Kyles; and
- Ms. Jacqueline Courval, Co-Chair, Friends of the Spit, and submitted a communication with respect thereto.

(A copy of each of the attachments referred to in the aforementioned report headed "Windmills: Scoping and Siting, Lakeshore-Queensway and East Toronto (Wards 2 and 26)" has been forwarded to Members of Council with the agenda for the Works Committee meeting of December 1, 1999, and a copy thereof is on file in the office of the City Clerk.)

*(City Council on December 14, 15 and 16, 1999, had before it, during consideration of the foregoing Clause, a communication (October 19, 1999) from Mr. Robert Bernecky, President, Snake Island Research Inc., addressed to Councillor Bill Saundercook, York Humber, expressing support for the siting of wind turbines in the downtown area.)*

*(City Council also had before it, during consideration of the foregoing Clause, a communication (undated) from Mr. Michael Harrison, President, Citizens Concerned About the future of the*



*Etobicoke Waterfront, addressed to the Commissioner of Works and Emergency Services, providing a list of candidate sites for the potential location of wind turbines in the City of Toronto.)*