

## **THE REGIONAL MUNICIPALITY OF NIAGARA**

REPORT TO: Chair and Members of the  
Public Works and Utilities Committee

SUBJECT: Update on Follow-Up Actions Regarding  
the Wainfleet Servicing Class  
Environmental Assessment (EA)  
In the Township of Wainfleet

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### **RECOMMENDATION(S)**

This report recommends to Regional Council:

That the consulting firm of Hydromantis Inc. be retained to provide value engineering services for the Value Analysis Exercise (VAE) to be undertaken in connection with the water and sewer servicing of the Wainfleet Township lakeshore community.

That the engineering fee be calculated on a time plus expenses basis estimated at an upset limit of \$189,789.00.

That the costs associated with this project be charged against Parent Project ZSW0010.

### **PURPOSE**

The purpose of this report is to apprise members of Public Works and Utilities Committee (PWUC) of the steps taken by Public Works and Public Health staff to implement the action plan developed for the Wainfleet Servicing Class Environmental Assessment (EA). The report also requests authorization to retain value engineering consulting services to review Wainfleet water and sewer servicing alternatives in connection with the Wainfleet Servicing Class EA process.

### **BACKGROUND**

On November 9 2004, Public Works staff presented the PWUC with a status report on the Wainfleet Servicing EA. The EA was undertaken to address significant public health

concerns associated with failing septic systems and contamination threats to private wells. Details of the status of the project were provided in PWP 61-2004.

At the November 9, 2004 PWUC meeting, staff also outlined an action plan to be implemented over the upcoming winter months. The action plan was developed to improve communications with area residents, collect additional technical information, and identify a suitable and affordable solution that protects the public's health. Follow-up actions included:

- Implementing a comprehensive communications plan,
- Forming and meeting with the Wainfleet Lakeshore Public Advisory Committee,
- Undertaking additional water quality testing,
- Examining the carrying capacity of properties for on-site sewage disposal based on physiographic factors, and
- Re-assessing alternative servicing solutions.

Regional staff advised PWUC members that the concluding steps of the Class EA would be temporarily suspended to accommodate these additional actions. This report is provided to update the PWUC on each of these supplementary activities.

## **REPORT**

Steps taken by Regional and Wainfleet Township staff in connection with follow-up actions associated with the Wainfleet Servicing Class EA are summarized below.

### Wainfleet Community Outreach Plan

The Wainfleet Community Outreach Plan is an internal document, co-operatively developed by Corporate Communications, Public Health and Public Works staff. The Plan sets out objectives, strategies, key messages, target audiences, tactics, and critical timelines to improve community awareness and understanding of the Class EA process.

The Plan identifies various consultation and communications elements that will assist in moving the infrastructure planning process forward to appropriately address Wainfleet's serious contamination concerns and water and wastewater servicing issues.

An important element of the Plan is the preparation of a community newsletter. The newsletter will inform affected Wainfleet lakeshore residents of actions that are planned or currently underway. The first edition of the newsletter has been completed in draft form. Entitled "Healthy Water/Healthy Environment", this newsletter will be printed and

distributed to property owners during the week of December 6, 2004 and updated over subsequent months.

#### Wainfleet Lakeshore Public Advisory Committee (PAC)

On November 10 2004, members of the Wainfleet Lakeshore Public Advisory Committee (PAC) met with Regional and Township staff to discuss their involvement as community representatives in the Class EA process. A list of PAC members is provided in Attachment A.

PAC members discussed the Region's action plan and expressed their support and desire to be involved in its implementation; particularly, the Phase II Water Well and Septic System Survey, the Value Analysis Exercise (VAE) and the development of public communication materials. Regional and Township staff will meet monthly with the Wainfleet Lakeshore PAC to discuss the status of follow-up actions and related community concerns.

#### Additional Water Well Testing

The Region engaged MacViro Consultants to undertake the second phase of the "Wainfleet Groundwater Impact Assessment, Water Well and Septic System Survey" (November, 2002). This Phase II survey is designed to provide additional water quality information, primarily for properties not previously surveyed. Private water wells will be sampled and analysed for total coliform, e-coli, ammonia, pH, and anions (e.g. nitrates, chloride, bromide, phosphates, etc.)

Letters will be mailed to lakeshore residents during the week of December 6, 2004 soliciting voluntary participation in the water testing program. Information on the Study's purpose and methodology is contained in the Regional "Healthy Water/Healthy Environment" newsletter. At the inaugural November 10<sup>th</sup> meeting of the Wainfleet Lakeshore PAC, members of the newly-formed committee expressed their support for the survey and committed to promoting community involvement.

#### Feasibility Study of On-Site Sewage Disposal

The Region engaged the services of AMEC Earth and Environmental to undertake a desk-top examination of individual, on-site disposal systems within the context of their physiographic conditions (e.g. soil type, water table, presence of rock, etc.). The study will determine if lots within the lakeshore study area can accommodate the sewage generated by residential use.

The feasibility study will confirm minimum on-site sewage disposal design requirements for each soil zone and determine if current Building Code standards can be met. Work is currently underway and will be completed by the end of January 2005.

### Re-assessment of Alternative Servicing Solutions

Regional staff is currently assembling a team of specialists to participate in a team-based, value engineering workshop. Participants will be selected based on their expertise in water and wastewater systems, facility operations, construction practices, hydrogeology and cost estimating.

“Value engineering” is an approach that uses a variety of resource expertise to achieve the best design solution for large scale engineering projects. The process explores all options and ideas for consideration and development, follows a prescribed methodology and is conducted by an accredited value engineering professional.

Regional staff proposes a modified value engineering approach for the Wainfleet servicing project. Whereas a value engineering team is traditionally comprised of design engineers, facility operators and contractors, the Wainfleet project team would be expanded to include Regional Public Health staff, Township staff, local politicians, PAC members and interested community observers. This broadly-representative project team will be better equipped to identify and analyse all feasible design alternatives, from both a technical and non-technical perspective, and select the “best value” solution for the community.

This modified approach, known as a Value Analysis Exercise (VAE), offers the best opportunity to identify the optimal solution at the lowest cost. The VAE approach is considered to be appropriate to the Wainfleet servicing project for the following reasons:

- High capital costs – Capital costs for the interim, preferred water and wastewater servicing solutions for Wainfleet have been estimated to be in excess of \$40 million. In recent years, many municipalities have applied value engineering techniques for projects of this scale. Based on the experiences of municipalities in Ontario and other jurisdictions, capital and operational cost savings equivalent to 5-20 times the value engineering workshop cost could be realized. Recently, such workshops have been conducted for Regional projects as the High Rate Treatment Facility in Niagara Falls and Welland Water Treatment Plant Upgrade.
- Limitations of Conventional Class EA Processes – The provincially-legislated Class EA approach to municipal servicing is intended to identify the most suitable infrastructure alternative in the context of predictable environmental effects and

standard mitigating measures. However, this process often does not identify the “best value” solution in terms of cost-effectiveness, consideration of all feasible alternatives or stakeholder acceptability because the required level of technical expertise is generally not applied at such an early point in the development process.

A true “best value” solution takes advantage of the focussed impact of experienced professionals representing a broad range of technical disciplines. Such resources are frequently not available to consultants following the Class EA process. A value engineering approach requires a significant effort, not normally associated with Class EA projects.

- Involvement of Stakeholders in Identifying the Preferred Solution – Although public consultation requirements prescribed in the provincial Environmental Assessment Act were fully satisfied and, in fact, exceeded in the Wainfleet Servicing Class EA, many residents questioned the integrity of the process and were dissatisfied with its outcome. The VAE workshop provides the opportunity for stakeholders, including members of the Wainfleet lakeshore community, to influence the direction of the project design and suggest appropriate alternatives.

The VAE approach will allow area PAC representatives to witness the VAE team’s deliberations and scrutinize team judgements and recommendations. The VAE workshop will enhance the potential for a higher level of community acceptance of the preferred solution.

The VAE process will involve the intensive, uninterrupted and short-term focus of project team members in a workshop format over a four-day period. As directed by a licensed facilitator, VAE team members will be required to prepare briefs on project details and potential solutions, and co-operatively and critically examine alternatives and their underlying assumptions. During the VAE workshop, participants will analyze all feasible options and promising ideas, and convert the best ideas into sound and workable VAE solutions. The workshop will include the following phases:

- Information phase - VAE participants will become fully aware of project details and objectives.
- Creative phase - Team members will suggest design improvements or modifications to proposed alternatives.
- Judgement phase - Team members will decide on the relative merits of suggested improvements.
- Development phase - Feasible concepts will be developed into recommendations, and costs and implementation schedules will be prepared.

Workshop ideas will be formulated into recommendations and documented in greater detail, together with associated savings or estimates of improved project functionality. These will form the basis of the Value Analysis Exercise Report. Recommendations from the report will be considered, presented to the public and incorporated into the Class EA process, where appropriate.

The VAE workshop is tentatively scheduled for February 8-11, 2005. Documentation of the process will be completed over the remainder of the week and a wrap-up session held on February 16, 2005. A copy of a preliminary draft agenda is appended to this report as Attachment B.

Regional staff has prepared a generic list of potential participants in the VAE workshop. Workshop roles include team members, presenters and observers. VAE participants will be selected based on their expertise, professional experience and local knowledge, according to categories set out below.

- Value engineering process facilitation
- Civil engineering expertise in pumping, pump stations and sulphide control
- Construction cost estimating
- Sanitary Systems Inspector
- Township PW & servicing
- Community planning
- Environmental assessment process
- Public health issues
- Environmental regulations
- Regional W&WW operations
- Lawyer/legal issues
- Community representatives (PAC)
- Small on-site systems and community W& WW systems
- Local politicians
- Private alternative options
- Construction contractor
- On-site treatment and disposal systems
- Biologist/natural environmental expert
- Funding/cost sharing
- Septic system installer
- Construction contractor
- Hydrogeologist/water well expert

The VAE exercise captures requirements that otherwise would be addressed and reflected later in capital project delivery. This, therefore, represents mandatory work, although enhanced and in advance of normal project sequence.

### Budget Considerations

An estimate for the VAE workshop and associated preparatory work, calculated on a time plus expenses basis is \$189,789.00. At this amount, sufficient funds would be available to undertake a Value Analysis Exercise in connection with the Wainfleet Class EA Servicing project.

## SUMMARY

This report updates members of the PWUC of recent steps taken in connection with the Wainfleet Servicing Class EA project. These include implementation of elements of the Wainfleet Community Outreach Plan, formation of the Wainfleet Public Advisory Committee (PAC), undertaking the Phase II Water Well and Septic System survey, carrying out a Sewage Disposal Feasibility Study and preparing for a Value Analysis Exercise (VAE) to be held in February 2005.

In addition, it is recommended that Hydromantis Inc. be engaged to provide professional engineering consulting services in connection with the VAE workshop at a cost of \$189,789.00. The associated costs will be charged against Parent Project ID ZSW0010, which has sufficient funds to accommodate this work.

Submitted by:

Approved by:

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Ian Neville, MPA, P.Eng.  
Commissioner of Public Works

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Mike Trojan  
Chief Administrative Officer

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*This report was prepared by Bob Steele, MA, MCIP, RPP, Project Manager and reviewed by Chado Brcic, M.Sc., P.Eng., Director Water & Wastewater Services Division.*