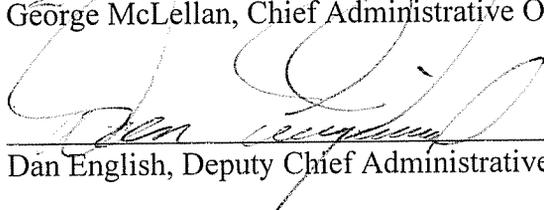

Halifax Regional Council
March 26, 2002

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:


George McLellan, Chief Administrative Officer


Dan English, Deputy Chief Administrative Officer

DATE: March 20, 2002

SUBJECT: Proposal Call # 01-346 Nine Mile River Assimilation Study

ORIGIN

Halifax Regional Council of October 30, 2001.

RECOMMENDATION

It is recommended that Halifax Regional Council award Proposal Call #01-346, Nine Mile River Assimilation Study, to Dillon Consulting for a cost of \$43,025 plus net HST + 10% for unforeseen works for a total cost of \$50,400 with funding available from approved capital account CDS00101 as per the Budget Implications section of this report.

BACKGROUND

Commissioned in 1982, the Beechville-Lakeside-Timberlea WCPC was intended to ultimately service a population of approximately 30,000 within the defined serviceable boundary. The requirement for a central collection/treatment system arose as a result of widespread malfunctioning of on site and small mechanical treatment systems which contributed to serious pollution of waterways and wells in that community. The N.S. Departments of Health and Environment Certificate of Approval required an enhanced secondary level of treatment with nitrification and phosphorus removal. At that time no baseline or receiving water studies were performed. NSDOE required that the initial plant design include a provision for future tertiary treatment.

Presently the facility is serving a population base of 7,000. Once a population level of 10,000 is reached, a new provincial Certificate of approval and plant expansion/upgrade will be required. It is expected that land development will take place at an intensified level as indicated by recent proposed developments. The present plant enhanced secondary treatment process consists of grit removal, screening, primary clarifiers, rotating biological contactors, secondary clarifiers, chlorination and post-aeration, biological nitrification and phosphorus removal. To date this plant has continually met or exceeded NSDOEL permit requirements.

At Halifax Regional Council on October 9, 2001, Planning and Development presented a staff report attached to the plan amendments and draft development agreement to accommodate the Westgate development located in Timberlea, District 22. This agreement restricts new development on the Westgate lands to 900 units until the upgrading/expansion requirements for the Lakeside-Beechville-Timberlea Water Pollution Control Plant have been approved by the N.S. Department of Environment and Labour. The plan amendments were approved by Halifax Regional Council on October 30, 2001.

It was noted that the original assumptions regarding ultimate plant capacity may no longer be valid therefore it was recommended that an assimilative capacity study of the Nine Mile River be commissioned.

The main purpose of this study is to determine the assimilative capacity of the Nine Mile River as the receiving water for the Timberlea WPCP in relation to future projected population growth. This study is not intended to be a requirement for an immediate NSDOEL Certificate of Approval but to serve as a guide for long term HRM environmental and development purposes.

A waterbody's dilution/assimilative capacity for wastes depends on waste characteristics and a host of physical, chemical and biological factors, such as the flow or volume of the waterbody, and the volume/composition of plant waste discharges, dispersion of effluent, depth and width of the waterbody, type of substrate, algal growths, benthic deposits, organic sludges and other factors. A waste assimilation study is the mechanism to be used in estimating a waterbody's assimilative capacity and establishing effluent guidelines to meet the Provincial Water Quality Objectives.

The study Terms of Reference requires the consultant to provide a detailed Nine Mile River Receiving Water Study and Modeling in relation to projected WPCP effluent discharge outputs servicing a projected population base of 30,000 in conformance with Nova Scotia Department of Environment and Labour policy guidelines. The consultant will assume present secondary effluent parameters until a 10,000 population or 1.0 mgpd level is reached. At that stage the plant will be expanded and upgraded to produce a tertiary level effluent. Population increases will result in further staged plant expansions until a maximum sewage flow of 3.0 mgpd. (approximate population 30,000) is achieved. In consultation with the Nova Scotia Department of the Environment and Labour, the consultant will be required to identify the maximum acceptable plant effluent loading on the Nine Mile River in order to maintain a healthy aquatic environment and allow full public recreational use of the Nine Mile River system.

There is a possibility that the future maximum design capacity of the treatment facility may be decreased or increased as a result of NSDOEL's interpretation of the study data. This may result in more or less than 3.0 million gallons per day (treated) or 30,000 population serviced as originally projected.

DISCUSSION

Only one proposal, Dillon Consulting, was received in response to the Terms of Reference for the Nine Mile River Assimilation Study. It is likely that the absence of submissions from other engineering/environmental firms was related to: (a) high level water assimilation studies are rare and specialized expertise is required, or (b) the present degree of company work load. Two consulting firms, CBCL and EDM Environmental were asked not to respond due to their consulting relationship with present and proposed developments within the Beechville-Lakeside-Timberlea area.

An evaluation committee consisting of staff from Planning and Development and Public Works and Transportation has reviewed the Dillon proposal and concluded that all requirements of the Terms of Reference have been met. The Nova Scotia Department of Environment and Labour has been and is continuing to act in an advisory role related to this project. Dillon has subcontracted Loucks Oceanography for receiving water modelling services and has retained a limnological advisor. This study will take 10 -12 months which is necessary to develop river test data and flow rates throughout

all seasonal periods.

The price quoted by Dillon Consulting is reasonable for high level assimilation studies and work requirements as contained in the HRM Terms of Reference for this study.

BUDGET IMPLICATIONS

Funds in the amount of \$50,400 are available in the 2001/02 Capital Budget in account CDS00101, Capital Cost Contribution Area Studies (Gross Budget, \$500,000, Available, \$437,068). This has been confirmed by staff of Finance.

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

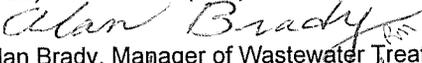
This report complies with the Municipality's Multi-Year Financial Policy, the approved operating Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

The results of the Nine Mile River Assimilation Study will assist in future Council development decisions related to the Beechville-Lakeside-Timberlea area and long term financial planning as related to future plant expansions.

ALTERNATIVES

There are no recommended alternatives.

Additional copies of this report and information on its status can be obtained by contacting the Office of the Municipal Clerk, at 490-4210 (TEL) or 490-4208 (FAX).

Report prepared by:  Alan Brady, Manager of Wastewater Treatment, 835-9566.

Approved by:  Kulvinder Dhillon, P.Eng, Director of Public Works & Transportation