Report Urges Milton Annexation

(Continued from Page Nine)

From 1947 to 1953, the Annual rate of increase was approximately 68 persons per year. From 1953 to the present time, the annual rate of increase has been approximately 500 persons per year. The sudden change of rate from 68 to 500 persons per year can possibly be explained by the fact that Milton, in common with other towns in this area, became a dormitory suburb for employees at Avro, Orenda, Ford etc., with the numbers increasing in almost direct proportion to the increase in staff at these plants.

It is possible that yet another trend will emerge due to the opening of the St. Lawrence Seaway and completion of Highway 401 through to this point, which will counter the effect of the reduction in work force at Avro and Orenda and provide a rate of increase at least as great as over the past six years.

Then the expected population in 1969 will be at least 10,500 persons and if growth is properly planned during that period, we should arrive at a much more favorable balance of assessment than at the present time. On this basis, Milton will need at least twice its present residential acreage. However, the present population density of 5.9 persons per assessed acre is approaching twice the average population density of towns similar in character to Milton. Working on a population density of, say, 3 persons per acre and a figure of 10,500 in 1969, the total acreage requirement would be approximately 3,500 acres. But, as has already been shown, the population trend could easily jump to seven times its present rate and an estimate of twice the required acreage working on the present rate of increase is not unreasonable.

SECTION 4

Sewage

The present sewage disposal plant has a capacity for 7,000 persons based on a per capita requirement of 83 Imperial Gallons per day.

The plant also permits enlargement to cater for an additional 4,000 persons, thus having a total capacity for 11,000 persons. This would cater for the projected population of 10,500 in 1969.

However, the location of any new sewage enlargements would depend upon the direction of the planned development of the town and it may be more advisable to locate any further extensinos in other areas of the town, due to the necessity for catering for topography of the land.

We recommend that a detailed layout of the sewage system be drawn up for reference purposes during town planning.

SECTION 5

Vacant Lands

From Section 3 "POPULATION", it will be seen that the population of Milton could increase to a figure of 10,500 or more by the year 1969. If the ratio of industrial to residential assessed acreage is to be preserved, this increased population will require a residential area plus complementary industrial, commercial and parks areas.

The following figures were supplied by Mr. Frank McNiven, the Town Assessor, as to the present status of vacant lands in Town.

1. 165 Vacant registered residential building lots.
2. 30 acres Vacant acreage zoned residential
3. 145 acres Vacant industrial land
4. 5 Vacant registered commercial lots
5. 20 acres Vacant zoned commercial.

Let us now consider the 145 acres industrially zoned land. Of this total, 89 acres belong to parties who have expressed their intention to hold this property for future expansion; 26 acres are owned by parties who will likely impose a condition of sale due to inaccessibility of the land and the necessity of selling in conjunction with land outside the Town boundaries; 20 acres are unsuitable due to the character of the terrain; and there are 5 acres upon which no information is available.

This leaves a total of 5 acres which are suitable for industrial location and the owners have expressed their willingness to sell.

Examining the vacant residential land, and assuming a figure of 3.7 persons per building lot, and 15 persons per acre, the present vacant residential land could support a population increase of 1,060 persons, or would suffice for a period of 2 years at the present rate of growth of the town.

The important point here is that, while we have some vacant residential land, we have comparatively no industrial land, either to complement the expected residential increase or improve the already unfavourable balance.

If 100 gallons of water per day is allowed for the increased population, this results in an increased demand of 106,000 gallons per day. This almost uses the surplus arrived at in Section 6 on WATER.

There are thus three alternative courses of action.

1. Allow no further residential development.
2. Allow further residential development and take steps to augment the water supply.
3. Encourage industrial development, by annexing additional land into the town; allow limited residential development and take immediate steps to augment the water supply.

Step No. 3 is the only course of action which will improve the present unfavorable situation.

SECTION 6

Water

Some facts and figures on the present water supply are as follows.

Wells

Well No. 1—13 ft. deep—spring fed. Pumping 135 gallons a minute. Water level drops in continuous dry spells—subject to pollution and requires chlorination. This well is generally not used since chlorination equipment has to be rented.

Well No. 2—90 ft. deep—metered—pumping 440 gallons a minute.

Well No. 3—90 ft. deep—metered—pumping 540 gallons a minute. Same aquifer as Well No. 2.

Note:

In addition to wells No. 2 and No. 3, there is a further well apparently using the same aquifer, owned by the Leaver Company.

Water Storage

(a) 50,000 gallon surge tank. Water flows from this concrete ground tank by gravity to the Town. The elevation of this tank is 850'.

(b) 1,000,000 gallon reservoir constructed on the site of the old reservoir at an elevation of 850', with an 8" line connecting to the 12" main at the junction of Bronte Street and Given Road. Water also flowing by gravity to the Town.

The elevation of Milton is 625' - 650'.

The result of a test run by the International Water Supply Ltd., during which the results were confused by the uncontrolled operation of the Leaver well, indicated that a safe minimum perennial yield of 700 Imperial G.P.M. would be obtained. This amounts to a total of 1,008,000 gallons per day.

However, since this test was performed, a meter has been fitted to Well No. 3, and daily pumping records have been kept. These records which consist of two readings per day, include the rate of pumping while the pumps are in operation, the level of the water, and the pump running times. A series of records from February 1959 to the present time were examined. They indicate that pumps No. 2 and No. 3 are operating at 440 G.P.M. and 540 G.P.M., respectively, with no appreciable change in water level from the winter reading to the readings during the present dry spell. Although the pumps would have to be running continuously to provide an acceptable figure, it will be realized that 700 Imperial G.P.M. is a somewhat conservative estimate. We will, nonetheless, use this figure in subsequent calculations.

The Town Foreman, Mr. McKerr, has said that the present pumping rate is 800,000 - 900,000 per day.

The limitation at the present time appears to be that the 12" main is not capable of passing the required volume of water without a significant pressure drop. For example, if 900 gallons a minute is passed through 5 miles of 12" diameter pipe, the resulting head loss is approximately 80' (40 P.S.I.) and, considering the elevation of Milton with respect to the reservoir, there is an available head of 175' - 225'. Thus the net pressure head at the entrance to the town is reduced to 85' - 135' (38 P.S.I. - 60 P.S.I.), or even lower in the poorly serviced portions of the town.

The new 1,000,000 gallon reservoir should be able to relieve this situation considerably, and, provided the water level in the wells is maintained, the town should be able to count on at least 1,200,000 gallons per day without an appreciable head loss.

The Ontario Steel Plant's demand for water averages 200,000 gallons per day, with a peak of 300,000 gallons per day. In 1958 during the Ontario Steel Plant shutdown, the water consumption of the balance of the town was observed to be approximately 400,000 gallons per day. This produced a figure of 90 gallons per day per capita consumption.

Estimated Future Demands

The School for the Deaf will probably require	30,000 G.P.D.
Milton and District Hospital probably require	12,000 G.P.D.
	42,000 G.P.D.
Estimated present consumption for population of 5,100, @ 100 G.P.D.	510,000 G.P.D.
Ontario Steel (Peak use)	300,000 G.P.D.
Giving TOTAL of	852,000 G.P.D.
Excess in terms of safe perennial yield and conservative estimate of use in immediate future is therefore	156,000 G.P.D.

It will thus be seen that there is an apparent surplus of 156,000 gallons per day, based upon a conservative estimate of the supply, the present use, and the future requirements of two relatively large users in the area.

However, the following facts should be borne in mind. The supply will only suffice for a few moderate industrial users and at the same time, at a population increase of 500 per year, there is an annual increasing domestic requirement of 50,000 gallons per day.

In addition, as long ago as 1940, the Canadian Underwriters Association examined the water works system and, in their report, recommended that the reservoir capacity should be increased to 1,000,000 gallons, and that a reliable source be available for filling the reservoir at a rate of 575,000 gallons per 24 hours. In addition, they recommended that the supply main should be duplicated as its diameter was too small to cater for combined domestic and fire supplies in the town at fire pressures.

The standards, as laid down by the Underwriters Association for a population of 5,000 persons, requires that the system must be capable of supplying 4 standard fire streams, in addition to normal supplies of water. This supply must be maintained for a period of 10 hours and the primary supply must be such as to completely refill the reservoir in 14 hours after being drawn up for 10 hours at the maximum rate of flow. This means that in order to satisfy these requirements, there must be an additional 1,200,000 gallons per day on top of the present consumption.

If the supply source is reliable, such as a source which fills the reservoir by gravity and is not subjected to the possibility of mechanical failure, then the size of the reservoir may be reduced and still fulfill the above requirements.

From these remarks, and the need to cater for industrial expansion in the future, it is obvious that we need to commence investigations immediately to acquire alternative primary sources of water supply. A potential of at least 4,000,000 gal-per day should be aimed for, and any of the improvements which are embarked upon as a result of subsequent investigations, should be aimed at catering for this supply. This is particularly true in the case of supply lines where a large amount of the initial cost is in the excavation necessary.

We would then conclude the report on water with the following recommendations which amount, in some cases, to an endorsement of those made by Mr. Deacon in his 1958 Report, and upon which no action has been taken.

1. That an investigation of alternative sources of water be made commencing immediately. The Ontario Water Resources Commission, through their Manager, Dr. Berry, have already assured the writer by letter that they are prepared to help in any way possible to solve this problem.

One possibility in this respect is a supply taken from Crawford Lake.

The writer has already made a superficial examination of this possibility. The Lake is at an elevation of approximately 925 ft. It is approximately 7 acres surface area, and shelves very rapidly to a depth in excess of 35 ft. It is apparently fed by underground springs and has a surface inlet and outlet, the surface inlet being almost dry at this time of the year. It is also completely closed in and free from the possibility of pollution. If connected by a suitable pipeline, it could supply the present reservoir by gravity. The level of the lake does not drop more than a foot even during prolonged dry spells.

Other alternatives include testing for other supplies of ground water in areas adjacent to the existing wells, or other areas within reasonable distance of the reservoir.

On the other hand, it may be more advisable to participate with other municipalities in a scheme for obtaining water from Lake Ontario.

One possibility for obtaining a supply of industrial water is to dam 16 Mile Creek in the natural basin below Parkway Drive in Lot 12 which is within the present town boundaries.

2. We further recommend that a 10 year plan of development and improvement be drawn up to cater for the projected population and industrial increase within the next 10 years.

3. We would endorse Mr. Deacon's statement that the present distribution system is inadequate and would recommend that consulting engineers be engaged to make a study of the system. In addition we would recommend that the distribution system in the Town be drawn up on a detailed plan to show the following:

(a) A comprehensive map of the entire system

(b) A larger scale map showing details

(c) Plats and cards providing information on valves, hydrants and other appurtenances.

4. If the solving of the water problem is likely to impose too great a burden on the Town, we recommend that the Ontario Water Resources Commission be approached for help in this respect.

5. As far as running further tests on the existing wells is concerned, we feel that no useful purpose will be achieved by this, since it is recognized that this source will be inadequate for future requirements.

6. With regard to the installation of meters, we feel that it is a somewhat negative solution to the problem, although it has been proven that some saving of water has been obtained as a result of installing these meters. Some arguments for and against the installation of meters are given as follows:—

For

1. It is only just that the consumer should pay in proportion to the amount he uses.
2. Waste is diminished, resulting in financial saving to all.
3. The poor actually pay more through taxes where meters are not used.
4. Loads on purification plants, pumps, etc., are minimised.
5. Waste surveys are easier to

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