

BEDFORD WEST SUB-AREA 10 SERVICING REVIEW

July 2015



1.0 INTRODUCTION

As part of the planning application for this project, a review of the local servicing infrastructure was completed. This included a review of the as-built or proposed water, wastewater, and storm water systems. In addition, the servicing capacities for the area were also discussed with Halifax Water. The following sections describe the review completed for the water and wastewater services as well as for the local stormwater system. Further servicing details are provided in servicing schematic included in the Appendix.

2.0 WATER AND WASTEWATER SERVICES

Based on our preliminary review of the servicing that has been completed and with the recently installed water and wastewater infrastructure along Kearney Lake Road, there is adequate servicing capacity for this project.

Municipal water and wastewater were recently installed along Kearney Lake Road and will provide service to the proposed developments within Sub-Area 10. New public water and wastewater systems are not proposed for this project. Private laterals for water and wastewater are proposed to be connected to the recently installed mainline pipe system.

2.1. Water System

The water system includes a 400mm watermain in Kearney Lake Road that directly connects to the 1200mm main transmission line from Pockwock Lake that serves Halifax near Hogan Court. The 400mm watermain was recently installed to provide water service to Sub-Area 10. The system has available capacity for this development.

Based on discussion with Halifax Water, the system is within the Bedford West Intermediate Zone and has a hydraulic gradeline of 355' (108m). Based on ground elevations ranging from 44m to 80m, this results in static pressures of approximately 91psi and 40psi. It is expected that water booster pumps may be required for some of the sites (depending on final elevations and building heights). The proposed infrastructure for this development includes individual private services only (i.e. water laterals for domestic and fire flow demands). No additional public water infrastructure is proposed. The anticipated water demands for the site are included in the following table:

Table 1 – Anticipated Water Demands (Parcels 1-12)

DEMAND SCENARIO	POPULATION	DEMAND (L/S)
Average Day*	2001	9.5
Maximum Day*	2001	15.7
Maximum Hour*	2001	23.7
Fire Flow**	-	270

*Based on Halifax Water guidelines and a density of 27 ppa (74.1 acres).

** Based on Fire Underwriters Survey (1999) for a 100,000 sf (total area) residential building with sprinkler.

The water system recently installed along Kearney Lake Road anticipated development in this area and has adequate capacity for the development of Sub-Area 10.

2.2. Wastewater System

Halifax Water recently installed wastewater infrastructure along Kearney Lake Road that will provide service to this development. This infrastructure includes 250-450mm gravity mains, a pumping station, and twin 600mm forcemains along Kearney Lake Road. The new pumping station that is centrally located on Kearney Lake Road will deliver the wastewater from this site to the existing system on the east side of Highway 102. It is our understanding that wastewater allowances that were included in the infrastructure design of the recently installed system were based on 75% residential (20 ppa) and 25% commercial (50 ppa). The following table outlines the allowable population based only on wastewater flows.

Table 2 – Allowable Population based on Wastewater Flows (Parcels 1-12)

Total site area (ac)	74.1
Assumed Commercial (%)	25%
Assumed Commercial Area (ac)	18.5
Remaining Residential Area (ac)	55.6
Commercial Density (ppa) – as per MPS	50
Residential Density (ppa) – as per MPS	20
Commercial Population	926
Residential Population	1112
Total “Equivalent” Population (Permitted)	2038

A population of 2038 equates to an equivalent density of 27.5 ppa (based on 74.1 acres of total site).

Based on discussions with Halifax Water, it is our understanding that the wastewater system capacity, based on the calculations above, can accommodate up to 27.5 persons per acre on Sub-Area 10 (Parcels 1-12).

The recently installed wastewater system along Kearney Lake Road anticipated development in this area and has adequate capacity for the development of Sub-Area 10 (subject to the allowable flows and densities).

3.0 STORMWATER SYSTEM

Kearney Lake Road has an open ditch storm system that discharges to Kearney Lake in various locations. It is proposed that each development would include an independent storm water discharge to either the roadside ditch or to an adjacent watercourse. Also, each site will be required to provide stormwater management measures such that post development flows are limited to the pre-development flows as per Halifax Water and NSE requirements. This will be accomplished by various methods, for example, storm water ponds/engineered wetlands,

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naturalized storm water areas, underground storage chambers (such as oversized pipes or arch chambers), or rooftop storage. Details of these systems will be determined as part of the detailed design.

The stormwater system in this area has adequate capacity for the development of Sub-Area 10 (subject to appropriate privately owned on-site stormwater management systems to control post-development flows).

4.0 CLOSING

We trust this servicing review is satisfactory. If you require anything further or have any questions, please feel free to contact Andrew Forsythe at 902-832-5597 or andrew.forsythe@designpoint.ca.

5.0 APPENDIX A – PRELIMINARY SERVICING SCHEMATIC

