

ANALYSIS OF
STORMWATER MANAGEMENT

for

Picton Terminals

62 White Chapel Road

In

Prince Edward County

Project 1353

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1. Introduction

Josselyn Engineering was retained by Picton Terminals to evaluate the existing drainage condition for the existing development at 62 White Chapel Road in support of a Zoning By-Law amendment. The purpose of this report is to provide an overview of the existing site conditions and drainage patterns.

The site is an approximately 25 ha and bound by White Chapel Road to the north and Picton Bay Lake Ontario to the south. The current use on the site is unchanged from its historic use as an international import/export shipping port service facility. Facilities and services include docking, stockpiling, crushing/processing, packaging, and hauling. Products prepared and loaded have included road salts, aggregates, farming products, biomass, steel products, recycled scrap steel, wine barrels, and various other local large industry products.

2. Existing Site Conditions and Drainage

The site is currently developed; consisting of an office building, gravel roads, stockpiled material, and landscaped space. From Figure 1, it can be seen that much of the site is undeveloped.

Figure 1 - Existing Condition



The topography of the site ranges from relatively flat to moderately steep along the shoreline. The drainage from the site flows by means of surface drainage to both the White Chapel Road ditch and to Lake Ontario (Picton Bay). A portion of the site drains to a low lying area immediately north of the existing access road at the west limit of the property.

The drainage from the site can be divided into three catchment areas and are described as follows and delineated on Appendix A.

Sub Area 1 - 8.6 ha tributary to the roadside ditch located on the south side of White Chapel Road. The area consists of approximately 70% pervious area (landscaped and undeveloped open space) and 30% impervious area (gravel roads, parking, and storage area)

Sub Area 2 - 2.7 ha tributary to a low lying area located north of the existing site access road. The area consists of approximately 70% pervious area (landscaped and undeveloped open space) and 30% impervious area (gravel road)). There does not appear to be an overland outlet to this area and is presumed to drain by means of infiltration and evaporation.

Sub Area 3 - 14.1 ha tributary to Lake Ontario (Picton Bay). The area consists of approximately 55% pervious area (landscaped and undeveloped open space) and 45% impervious area (gravel roads, parking, and storage area)

The existing vegetation varies throughout the site, with a combination of wooded, overgrown and open space areas. From available soil mapping information of Prince Edward County (Appendix B), the overburden soil type within the site is predominately of clay loam, underlain by limestone bedrock.

Due to the usage of the site a variety of quality control drainage measures are in place in order to ensure runoff from the site is treated prior to discharging to the lake and adjacent properties. These measures include but are not limited to settling ponds, settling basins, specialized grading, sediment controls, and berms. On site activities are also monitored and sediment controls are implemented as necessary to prevent substances from entering the Lake.

3. Site Development

Currently there are no proposals for new development on the site. Most recent works consisted of the construction of the shipping road along the shoreline and reinforcing the existing shipping pier. The associated permits obtained by the owner from the Quinte Conservation Authority describing the proposed works and recommendations for sediment control are attached as Appendix C.

4. Recommendations for Future Development

It is recommended that future development of this site implement stormwater management controls in accordance with the Ministry of Environment's Stormwater Management Planning and Design Manual (MOE 2003) and based on the recommendations and requirements of all approving agencies. A detailed stormwater report shall be required as part of the site plan approval.

As indicated in section 2 of this report a portion of the site drains to the roadside ditch on White Chapel Road. It is recommended that future development tributary to the roadside ditch, delineated as Sub Area 1 refer to Appendix B, implement stormwater control measures both the purpose of quality and quantity control. Post development flows from the site shall be controlled to pre development levels unless it can be demonstrated that the increase in flows can be safely conveyed through the existing roadside ditch. As this drainage is ultimately tributary to Lake Ontario an enhanced level of protection, 80% total suspended solids removal, is to be achieved.

Should the area within Sub Area 2 be developed, the drainage should be directed to Lake Ontario (Picton Bay). Stormwater management for the purpose of quality control, and enhanced level of protection, would be required. Quantity control would not be a requirement as there is adequate capacity in the Lake for the increased flows. These requirements would also apply to the drainage area within Sub Area 3, quality control only.

5. Conclusions

This report provides an overview of the site conditions and drainage patterns which exist currently at 62 White Chapel Road and provides stormwater management recommendations for future works in support of a Zoning By-Law amendment.

APPENDIX A

Storm Drainage Area Map

APPENDIX B

Soil Map

APPENDIX C

Quite Conservation Permits