



Recreational Boating and Tourism Technical Work Group

Synthesis Paper #1 - CA

The Recreational Boating and Tourism Technical Work Group was created to establish water level criteria for recreational boaters and boating related tourism. Boaters unhappy with their access capabilities as a result of high or low water levels have a direct impact on marina owners and the local tourism industry. Typical losses may include the loss of summer and winter storage fees, crane fees, service fees, and, in some cases, retail sales.

This *Synthesis Paper* is part of a series being developed by the Recreational Boating and Tourism Technical Work Group to provide the results of activities conducted as part of the Study. If you would like additional information on the activities of the work group please contact *David White*, 315-312-3042, dgw9@cornell.edu.

For information on the US inventory of marinas and yacht clubs please refer to Synthesis Paper #1 – US.



Field Survey of Marinas/Yacht Clubs and Public Boat Launch Sites – Lake Ontario and the Upper St. Lawrence River

By

CH2MHill and Scott N. Duff Planning, Environment & Research

Introduction

CH2MHill Canada Limited (CH2M HILL), in collaboration with Scott N. Duff Planning, Environment & Research, was retained by the Lake Ontario-St. Lawrence River Study to assist the Recreational Boating and Tourism Technical Work Group in a field survey to collect primary data on the physical characteristics and infrastructure of marinas and public boat launches along the Canadian shoreline of Lake Ontario and the St. Lawrence River. This data will provide baseline information for use by the Work Group in evaluating the potential effects of different water level scenarios on marinas and public boat launches.

Methodology

The study area was defined as Lake Ontario and the Upper St. Lawrence River, from Niagara-on-the-Lake to the control structure at Cornwall. In consultation with the project scientific authority, it was agreed that Kingston would form the boundary point between Lake Ontario and the Upper St. Lawrence River study zones.

The type of specific data to be collected at each site was predetermined by the project's scientific authority at Environment Canada. Fieldwork was

undertaken by a two-person crew between August 27 and September 28, 2001.

The fieldwork for the infrastructure survey was conducted in a manner that encompassed as much of the shoreline area near roadways as was feasible. This approach made it possible to identify a number of additional sites that had not previously been identified in the published documentation. The approach was particularly effective in identifying public boat launch sites.

Findings

Data was collected from a total of 120 marina/yacht club sites. In some cases, marinas and yacht clubs were located at the same site. These sites were not differentiated for data collection; therefore, the data represent approximately 135 businesses and clubs.

Data was also collected from 64 public boat launch sites. These sites are counted in addition to those facilities available at individual marinas and yacht clubs.

Marina/Yacht Club Infrastructure Database

Infrastructure at a total of 120 marina/yacht club facilities was documented as part of this study. Eight additional sites were identified but were not surveyed due to an absence of physical infrastructure, site access restrictions, or inability to gain a correct GPS signal at the site. Seventy percent of the sites surveyed were located within the Lake Ontario study zone.

Two types of docking infrastructure were surveyed: fixed and mobile. Fixed (or permanent) docks are located at a fixed height in the water and are not adjustable relative to the water level. Mobile or floating docks rest on the water surface and are designed to rise and fall with changing water levels. Marinas with mobile infrastructure are therefore better equipped to manage and adapt to fluctuating water levels.

Approximately two-thirds (67.5%) of all facilities visited were equipped primarily or exclusively with floating docks. Three-quarters (75%) of St. Lawrence River facilities and nearly two-thirds (64.7%) of Lake Ontario facilities had floating docks. Only one-third of all the facilities surveyed

relied primarily on permanent docks (25% of St. Lawrence River and 35% of Lake Ontario facilities).

Secondary Docking Infrastructure Type

Not all facilities visited had exclusively fixed or exclusively mobile docking infrastructure. The presence of any secondary infrastructure, fixed or mobile, was also noted.

Twenty percent (24 sites) of the facilities surveyed had secondary infrastructure. A higher proportion of St. Lawrence sites (30.6%) had secondary infrastructure compared to Lake Ontario sites (15.5%). Of those sites with secondary infrastructure, more than half (58.3%) consisted of fixed infrastructure. Sites on Lake Ontario were almost evenly split regarding secondary infrastructure type, while a greater proportion of sites on the St. Lawrence had fixed secondary infrastructure.

Considering both primary and secondary infrastructure types, 75.8 percent of facilities in the study areas possess some of the docking infrastructure necessary to deal with fluctuating water levels, i.e. floating dock infrastructure.

Site Access Conditions

There were no concerns identified with the access condition at any of the sites. All (100%) of the sites surveyed maintained access routes in good and usable condition.

Protection Measures

Over half (55.8%) of the facilities visited had some type of structural protection measure to shield the docking/marina area from wind and wave forces. In most cases, these measures were a variety of rock walls and breakwaters. Sites on Lake Ontario had almost twice the proportion of facilities with protection measures than sites on the St. Lawrence River, which was not unexpected given the different conditions present along the Lake Ontario and St. Lawrence River shorelines. Many sites on the St. Lawrence River were located in naturally sheltered bays and inlets.

Summary

The type of docking infrastructure present at a marina/yacht club facility is a key indicator of the sensitivity of the facility to water level fluctuations (high and low water level conditions). Marinas with mobile/floating infrastructure are generally less sensitive to a reasonable range of water level fluctuations than those that rely on fixed docks. Other factors such as water depth and bottom elevation are also important indicators of a facility's ability to adapt to fluctuating water levels. Approximately two-thirds (67.5%) of all the facilities visited were equipped primarily or exclusively with floating docks. Seventy five percent of St. Lawrence River sites and almost two-thirds (64.7%) of Lake Ontario facilities had floating docks. Only one third of facilities relied

primarily on permanent docks (25% of St. Lawrence River and 35% of Lake Ontario facilities). Considering both primary and secondary infrastructure types, 75.8% of facilities in the study areas have some of the docking infrastructure necessary to deal with fluctuating water levels (i.e. floating dock infrastructure). These observations provide an indication of the relative sensitivity of these facilities to water level fluctuations based on infrastructure type characteristics.

Source

Field Survey of Marinas/Yacht Clubs and Public Boat Launch Sites-Lake Ontario and the Upper St. Lawrence River. Final Report. CH2MHILL and Scott N. Druff Planning, Environment & Research. December 2001.

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