The market valuation of submerged lands

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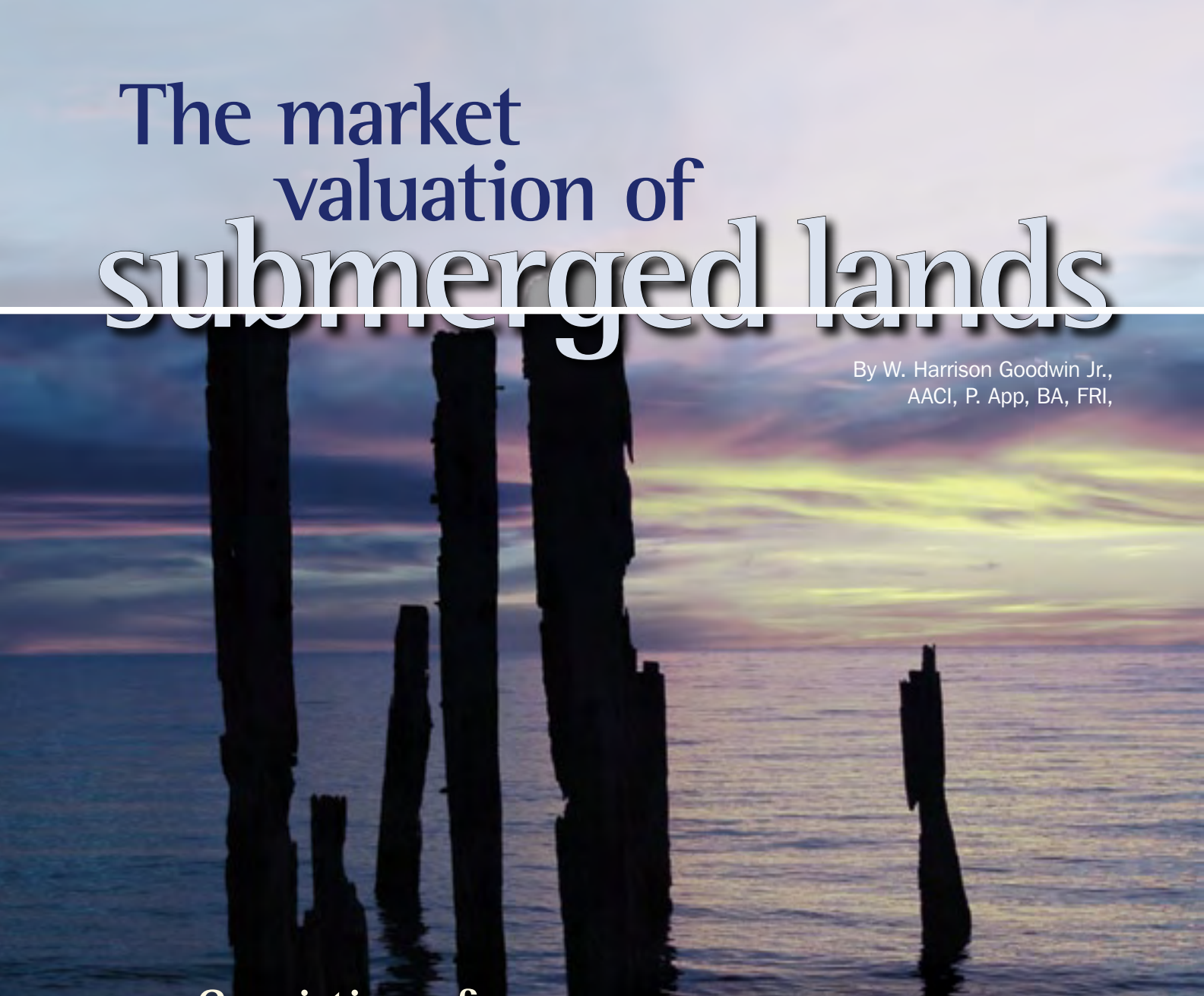

Consisting of New Brunswick (NB), Nova Scotia (NS), Prince Edward Island (PEI) and Newfoundland, Canada's Atlantic region defines itself by the Atlantic Ocean. Its various forms of coastline (on salt water, 'the littoral'), consists of bays, tidal inlets, rivers, and other streams connecting land to sea. All of the provinces are 'maritime' in the sense that they are directly connected by coastal frontage to the sea. The littoral, to the mean high water mark on the shore front, is within the jurisdiction of the federal government and applies to all tidal shorefronts.

The federal government has dominion over the waters and the submerged land under the water extending from the coastline to agreed lines between provinces and other countries, notably the US and France, and as far out as 200 miles into the sea.

Tides throughout the Atlantic region ebb and flow twice in 24 hours, and thus are described as being 'semi-diurnal.' Saint John Harbour, NB, on the Bay of Fundy, has a tidal range of up to 52 feet at high tide, making it one of the greatest tidal ranges in the world, along with other NB and NS Bay of Fundy ports, and the Mersey River in England. The height of the range is an indication of its power, in that the speed of ebbing and flowing tides can reach up to six knots, the hull speed of many small ocean-going sailing yachts. The tidal range and power within a harbour or river may render certain uses either impractical, such as a small craft marina in the case of Saint John Harbour, or economically unfeasible for certain uses for which a demand might otherwise exist.

Rivers, such as NB's Miramichi River, are tidal for several miles upriver, and thus, regulatory control over the development and use of the upland comes within both federal and provincial jurisdictions. In such instances, federal jurisdiction usually trumps provincial, especially if the use of property is allowed by the province, but not allowed by the federal ministry having jurisdiction. This is especially true in environmental matters or uses affecting fish habitat. Inland rivers, lakes and streams which do not empty into salt water are within the jurisdiction of the province to regulate and police.

'Riparian rights' refer to the banks along an inland water course and, technically, do not include the banks of an inland lake. Prior to Confederation, riparian rights were often conferred by the English Crown Ad Medium Filum Aquae (to the middle thread of the river), which actually conveyed the ownership of the submerged land extending that far from the river bank, in much the same way that a water lot may convey a right to use a defined area of water only, or the same defined area of land submerged under the defined area of water.

'Accretion,' or extension of the useable area of land into the sea, does not count as upland amelioration unless the accretion has occurred as a natural process over time. When one improves property to extend into the water from the existing bank, unless a water lot and the right to improve it with a permanent structure (including surcharging) already exists, the right to do so must be acquired from the government having jurisdiction over the water body and real property in question.

Before and during the 1980s, especially for commercial or industrial developments adding to the economic base of the local or regional economy, the federal government, in particular, always encouraged such developments by (1) charging only a nominal lease rate, and (2) negating property tax, which is the jurisdiction of the provinces only, and, until the 1980s, did not include federal leaseholds for property tax purposes. One suspects that many developments that took place would have otherwise been prohibited from doing so because of economic infeasibility.

For a time during the 1980s, developments into urban harbours could take place precisely because the development would be devoid of annual property tax payments. Complexes of office buildings, hotels, shopping centres, condominiums, marinas and others were initiated because of this economic advantage. Of course, the issue had surfaced in the NB courts in the 1970s and in assessment appeal cases elsewhere in Atlantic Canada.

Curiously, many seashore developments in the Atlantic region have been on Glebe land and other privately owned surplus farmland, where the land only was assessed to the owner and the leases tended to have token rents because of the non-profit nature of the ownership. The leases were long-term, and, in many instances, there were fully functioning permanent houses on the lands, with the residential owner paying no property taxes.

In NB, the *Assessment Act (14.7.2)* was amended to provide for the owners of the residential improvements namely, the land lessees, to be considered owners of the land for tax purposes, if the term of the lease was of duration at or in excess of five years. The *Act's* subsequent clause14.8 provided for lands leased from the federal government to be assessed and taxed in similar fashion.

Typically, in this region, water lots in various forms are used for the mining of petroleum products in the ocean; for the leasehold improvement of water lots, including uses such as wharves, transit sheds, office buildings, hotels, grain terminals, marinas, and other ocean front uses; inland riverfront marinas with floating docks in water lots; private salmon angling facilities, which are worth much less if there are no historically productive natural fish holding pools in the water; spring-fed man made lakes for fishing trout and other game fish species; cranberry bogs; sphagnum peat bogs; saw mills; etc.

Therefore, the most important consideration in the appraisal of the market value of submerged land is its highest and best use. The determination of optimum use, by systematically answering the criteria of the principle, i.e., the one use or group of associated uses that is (are) physically possible, legally permissible, financially feasible and maximally productive, will determine the approaches to value that one should try to employ, in order to reflect the actions of lessees/lessors, buyers and sellers of the subject property in the market place.

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As with the appraisal of many other income-producing, investment real estate properties, such as lodging facilities, restaurants, golf courses, etc., that are labour intensive and involve capital personal property components such as furnishings, fixtures and equipment, without which the business of real estate cannot function, and with a significant entrepreneurial component, all of which contribute to the profits of the enterprise, the appraisal will initially focus upon the business(es) that will be carried on at the site.

The Business Enterprise Valuation Technique (BEVT) is necessary for the determination of the financial feasibility of the development, as well as the determination of its maximal productivity. It will also be used for the income approach to value, in conjunction with the cost approach and the sales comparison approach, so that each will hopefully have sufficient information to be employable.

The BEVT is not a business valuation, the purpose of which is to value the shares of a company or a business that may also include investment assets and liabilities other than the subject property and its actual or hypothetical development and specifically related profit centres.

If the purpose of the appraisal is to estimate the market value of the submerged land, with or without the upland component of the enterprise, then, applying the principle of surplus productivity, the land component of the enterprise can be isolated from the other components of wealth production, i.e., capital, labour and entrepreneurship.

In the 1989 appraisal of an intended waterfront industrial wharf site at the Town of Chatham, NB on the Miramichi River, for its expropriation in 1983, the methodology of the appraisal was explained in my report as follows:

i. Describe the market and participants of the market for wharf/transit shed facilities in the Atlantic region where the products to be shipped will be used in the global market place. (The buyers, sellers and financiers of such facilities are often stevedore outfits such as LOGITEC or Seaboard Stevedores Inc. or shipping companies, many of which are publicly traded companies. The market area is limited to the locations of competitive properties that would serve the likely shippers or users of the subject site as if improved.)
ii. Estimate the demand for a marginal wharf facility with a 100,000 square foot, 31-foot high transit shed for the storage of hot packaged ground wood pulp (the improvements as having been determined from a productivity analysis and intended project development described by an independent professional engineer in a report to the owner in 1981, the size of the facilities is determined by the sizes of vessel, i.e., 15,000-tonne (gwt), and the annual throughput of all commodities to be shipped to and from the subject site as if improved);
iii. Identify and quantify the sources and amounts of annual revenue production;
iv. Describe competitive wharf/transit shed facilities and estimate the capture rate for the hypothetical subject property development in light of the actual and anticipated competitive facilities (this may involve the investigation of available similar wharf sites on other rivers within a competitive travel distance to the subject property, i.e., its market area);
v. Project and evaluate the cost of constructing the hypothetical intended development as if in situ for the production of those estimated revenues;
vi. Describe and quantify all sources of revenue and operating expenses (build a chart of accounts) to be incurred in the annual operation of the hypothetical project as if developed;
vii. Provide an Income & Expense Pro Forma Statement based upon mature amounts developing going concern earnings before interest, depreciation, amortization and taxes (EBIDAT); Capitalize the incomes attributable to the real estate that is the submerged land and its hypothetical improvements, capital and entrepreneurship using separate and applicable capitalization rates from evidence in the wharf/transit shed real estate submarket. If it is not possible to separate the incomes attributable to each agent of production, then include their costs as line item expenses and capitalize the combined net operating incomes at an overall rate for the entire enterprise. Note that labour is typically handled as a line item expense. Sometimes, incomes and capitalization rates can be attributed separately to the real estate, capital and entrepreneurship components of the four agents of production. (In NB, the *Employment Standards Act* states wage rates for all types of labour, while the *Crown Contracts Act* states the rental rates paid by the province for the rental of all types of machinery and equipment used in construction, transportation and distribution.)
viii. Subtract all of the project development costs that have not been capitalized or expensed separately from the total property value estimate to indicate the market value of the submerged land.

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It was not possible to use the sales comparison approach. A quantity survey cost estimate for the entire projected development was supplied to the owner in 1983 by a professional engineer, who provided it for this appraisal prepared for litigation purposes.

The foregoing methodology describes a development approach to value, and includes all of the fundamental steps to be taken in the appraisal of any income producing property by defining the market area and participants, and estimating and describing the factors of supply and demand for the most probable and maximally productive use of the site, i.e., a market analysis. This is followed by a marketability analysis to answer the question of 'how the subject property would perform operating against the existing and anticipated competition,' followed by the feasibility analysis and maximal productivity, assuming that the physical location and market characteristics of the subject property will have defined the sizes of the (hypothetical) facilities to be developed.

THE SUBJECT PROPERTY

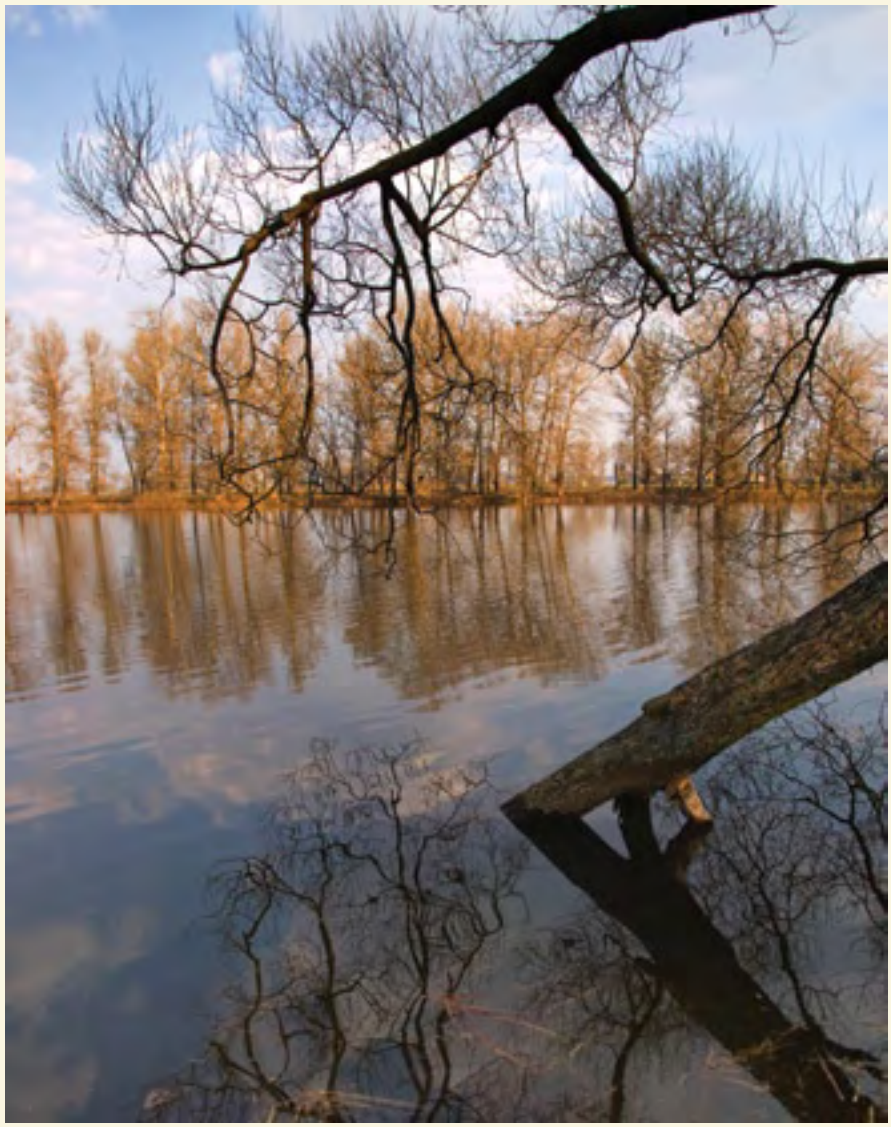
The subject property consisted of a peninsula of upland extending from the shoreline. It contained about eight acres, with a significant depth of compacted sawdust from a mill that had burned years before, and an adjoining water lot containing about four acres, in which the ruins of a 120-year old wharf remained.

An irregular quadrilateral in shape, the western boundary was just under 5,000 feet long entirely along the full depth of the natural river channel, which, at the time, could accommodate 'Panamax draught' vessels (26 feet at low water, with room to spare). The river had been dredged to accommodate 15,000-tonne (gross weight) vessels, and ice breaking service was provided each winter by the federal government.

The distance from the shore line to the channel was about 1,000 feet, but the channel depth was encountered about 500 feet from the mean high water mark. There was room for a protected anchorage, a bonus for the type of shipping that would be carried on at the site.

The site was down river from two vehicular bridges and one rail bridge, had frontage on a paved road and on a railroad from which a spur could have been built, and had electricity, telephone, water and sewer.

The air draught of the first bridge was insufficient for the freight ship users of facilities upriver from it. As a political decision had been made to establish the wharf facility in Newcastle, a few miles upriver; 10,000-tonne vessels needed to lay over for a day in order to take down the funnel and upper equipment of the ship, and then wait for slack tide at low water in order to proceed to the Newcastle wharf/transit shed facility. If the pilot encountered a flood tide in the course of moving upriver, which was sometimes the case; there was a danger of hitting the second bridge. Also, in order to berth and moor under that circumstance, the vessel would occasionally drop anchor to swing itself in the opposite direction to face down river. This was a tricky manoeuver with a fully laden freighter, and one that would have been unnecessary had the wharf and transit shed been built down river at the subject site in Chatham.



Considering the superior location and physical characteristics of the subject property to all other likely competitive sites, (including the one chosen in Newcastle), as if before the expropriation in 1983, all other criteria of the highest and best use led to the conclusion that the owner's intended use as a 1,200 foot marginal wharf, complete with a 100,000 square foot, 31-foot high transit shed and related office building, was the optimum one.

The market analysis had revealed that a demand existed for such a facility at the subject property site to handle and ship the following goods:
Wood pulp: 300,000 tonnes;
Lumber: 17,000,000 board feet;
Wafer boards: 6,000 tonnes;
Utility poles: 9,000 tonnes;
Peat moss: 400,000 bales;
Salt cake: 16,000 tonnes;
Fish: 5,000 tonnes;

Revenues to the wharf/transit shed owner/operator are categorized as follows:

1. *Berthage*: a charge on a vessel while occupying a berth, or not moored, but loading or unloading by lighter to and from the wharf. A berthage charge is based upon the deadweight tonnage of a vessel per day. In 1983, this charge averaged $100.00 per 10,000 tonnes (dwt); the existing normal eight hour, 5.5 day ship loading work week is used;
2. *Wharfage:* means a charge on all goods that:(i) pass over, onto or under corporation property; (ii) are trans-shipped between

vessels in the harbour; (iii)are unloaded over side from a vessel to the water or loaded over side to a vessel from the water at a harbour; or, (iv) are landed from or placed in the water at the wharf corporation property; in 1983, the wharfage charge averaged $1.03 per tonne;

3. *Throughput:* refers to the amount of material put through a loading/storage process, and is charged by the wharf/transit shed owner as a net rent for the use of the real estate. In 1983, the throughput charge was $3.00 per tonne;
4. *Handling**: a terminal operator receives up to 25% profit from handling services. In this case, the profit averaged $1.00 per tonne handled;
5. *Receiving** (tailgating): connotes the process of unloading the trucks onto the terminal property. The amount used was $3.00 per tonne, or ($4.00/T less $1.00/T handling);
6. *Demurrage* (storage): may be charged for goods placed inside or stored outside of the transit shed on the terminal property and is charged (1983) at a rate of $.50 per tonne per week or any part thereof after the first 30 days on site;
7. *Delivery:* refers to the transfer of the goods to be shipped from the transit shed or other area of the terminal property's storage area to the loading station on the wharf apron. The charge for this part of the handling service is $5.00 per tonne of which the wharf/transit shed owner would be paid $1.25 per tonne by the handlers for being able to work on the property;
8. *Stevedoring:* this aspect of handling refers to the loading/unloading of the vessels, and, in 1983, was $5.00 per tonne, with the property owner receiving 25% of the charge or $1.25 per tonne;

* Handling receiving, delivery and stevedoring percentages taken by the owner/operator of the terminal as a license for the labour to operate on the property should be treated as entrepreneurial profit. Because the operator collects the charges and pays the handlers, the entire charge emanating from each activity should be included as revenues to the enterprise, deducting as line item expenses all labour wages, salaries and benefits, and capitalizing entrepreneurial profit at a separate rate if the appraiser chooses to do so.

The estimated annual gross income of the enterprise was over $2,550,000.00. At a time when overall capitalization rates for such industrial real estate were running 12.5 %, the overall business capitalization rates were ranging from 14% to 25 %, with an average rate on well founded, new developments running at a rate of 20%.

I was the fourth appraiser to value this property. The first government appraiser had reached a value conclusion for the property of $17,000.00. There was no discussion in his report about the highest and best use of the subject property. However, the methodology used was the *4-3-2-1 Rule*, which had been sanctioned by a consensus of appraisers attending a water lot appraisal seminar in 1975. The rule unfortunately attributes the highest value of the property to the upland, with the lowest value placed upon the quarter furthest out from land. In this case, the basis of value of the submerged land was precisely because of the depth of water at the outermost boundary of the property from the water to the upland part of the site. It was for this reason that a marginal wharf facility could be developed.

Having rejected this appraisal out of hand, the owner caused a second appraiser to be hired by Public Works Canada. That appraiser also ignored the development of a highest and best use conclusion, and concluded a value of $68,000.00. A generous amount considering the great red flag he had raised in his report concerning the proximity of the town sewerage lagoon and its adverse affect on the eventual use of the property, whatever that might be. It would have had no injurious affect on the operation of a wharf/transit shed facility.

In May of 1975, Public Works Canada in Halifax had convened a conference of appraisers from across Canada to discuss the methodology of valuing submerged lands and water lots. The discussion focused upon valuation techniques and methods, but ignored the principle of highest and best use as a determinant in the approaches to be used to conclude a value for the real estate.

Moreover, the convention among appraisers at the time was that one could not use business enterprise income/expenses to value the real estate. Times have changed. The appraiser hired by the property owner before me had arrived at a conclusion of $475,000.00 for the whole property 'as is, where is,' but without a highest and best use analysis, or a similar development approach, had also produced an unconvincing report, which Public Works Canada rejected. Within two weeks of receiving my report, the owner was paid $800,000.00, which included fees, disbursements and interest from the time of the taking.

Highest and best use analysis begins with a sound market analysis. The Appraisal Institute (Chicago) has a good text on market analysis (by Fanning, Grissom and Pearson), and, in 2004, the Urban Land Institute (Washington, DC) produced *Real Estate Market Analysis* by Schmitz and Brett that also contains complete case studies and a great appendix containing sources of data. There is also the web.

Whether the submerged land appraisal indicates use as a recreational boat marina, wharf, high rise office building, fishing lodge, or something else, there are publications available that will provide information on their operations and how they make money. The subsequent fundamental analysis will then be facilitated by the appraiser who will be informed as to what questions to ask whom.

Especially for litigation purposes, this type of appraising often takes hundreds of hours spread over months. Neither business valuers, who tend to be accountants, nor professional engineers are as well equipped as AACIs for the tasks of performing a fundamental analysis in a market analysis, especially where the end goal is to value the real

estate component of an actual or hypothetical enterprise. Accountants tend to rely entirely on information gleaned from financial statements from other similar enterprises, which will tell them nothing about the nature and quantities of the goods that would be shipped through the hypothetical facility. Engineers are usually poorly informed about direct comparison and income approaches, although, frequently, they are no worse than some supposedly qualified appraisers, who ignore the use of the methods they have been taught, or perform essential methods incompetently. From the position of an expropriated property owner, considering what compensation he may receive based upon an incompetent appraisal, the costs of producing a competent appraisal are well worth it. ❦

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