SURREBUTTAL TESTIMONY

of

THOMAS BRUCE

before the

PUBLIC UTILITIES COMMISSION

DOCKET No. 3674

for

THE TOWN OF CUMBERLAND

September 2005

Q. Are you the same Thomas Bruce who prefiled direct testimony as Finance Director of the Town of Cumberland?

A. Yes.

Q. On page 21 of the Pre Filed Rebuttal Testimony of Christopher Woodcock dated August 23, 2005, Mr. Woodcock stated that in his opinion, what other Rhode Island communities are doing has no relevance before this Commission in this docket. Do you agree with this statement by Mr. Woodcock?

A. No, I do not. I believe that prior decisions of the Commission dealing with other communities are relevant. For example, the Commission rendered a previous decision rejecting a proposed surcharge for the cost of certain pumping stations owned by Providence Water. The pumping stations benefited only Providence Water ratepayers who resided in the Dean Estates area of Cranston and the Greenville area of Johnston. The Commission ruled consistent with what I understand to be traditional utility rate regulation, which insures that ratepayers of the same class who receive a regulated product under substantially similar circumstances and conditions should pay the same rate. I believe that this is why a surcharge has never historically been implemented by the Commission in the State of Rhode Island.

Q. What was the nature of the ruling?

A. In Docket 2048, Providence Water sought to implement a tariff which would allow it to assess an additional charge on customers served by the two special pumping zones. Mr. Thomas Catlin, who testified for the Division in that docket and is testifying for the Division in this docket, rejected the proposed special surcharge and testified that "other customers are not

charged different rates depending on their location, elevation, or other similar factors which may affect the cost of serving them." (Order at 30) Mr. Catlin also testified that the proposed surcharge for the pumping zone customers was unwarranted "in view of the nominal impact spreading the cost would have on all ratepayers". (Order at 30)

Providence Water's Chief Engineer, Richard Rafanovic, testified that it would be "unfair to PWSB's ratepayers to have them pay for water service above the PWSB's hydraulic gradient. Mr. Rafanovic reiterated that only those responsible for this expense ought to pay for it." (Order at 36)

However, the Commission rejected Providence Water's request for a special surcharge for the pumping zones and adopted Mr. Catlin's approach of spreading the cost uniformly across the entire system, ruling as follows:

> "The PWSB has raised a novel rate design issue in this docket. In its filing, the PWSB is requesting that the Commission approve an additional fee for two pumping zones located above the system's hydraulic gradient. These zones were identified as the Dean Estates Zone (Cranston) and the Greenville Zone (Johnston). The PWSB reasons that because most ratepayers do not cause the PWSB to incur pumping costs, only those ratepayers who do should pay for those costs.
>
> The Division rejects this notion for two reasons. First, the Division notes that the PWSB's other customers are not charged different rates depending on their location, elevation, or other similar factors which may affect the cost of serving them. Secondly, the cost impact to ratepayers within a pump zone, under the proposed surcharge, is significant. However, the cost of spreading those costs over the entire body of ratepayers is minimal.
>
> The Commission finds for the Division on this issue. In reaching this finding, the Commission considered the potential consequences that such a precedential decision could generate. For example, if we approved a pumping zone charge, would ratepayers at the far end of the distribution system be the next target for a

special cost surcharge? What about those ratepayers who live closest to the treatment plant, would they be entitled to a rate discount? Furthermore, what about the existing customers being served water above the system's hydraulic gradient, such as the Fruit Hill residents? Will they too have to pay a surcharge, or will they be exempted (perhaps unjustly) from the special pumping zone surcharges? Because of these inevitable questions, the Commission finds that averaging these pumping costs across the entire body of ratepayers would be more reasonable. In short, the Commission believes that all the costs and benefits of the system ought to be aggregately incurred and enjoyed by all ratepayers, equally." (emphasis added)

I believe that, using the same reasoning, the Commission should reject the proposed Cumberland surcharge.

Q. On page 21 of the Pre Filed Rebuttal Testimony of Christopher Woodcock dated August 23, 2005, Mr. Woodcock stated that surcharge request should not be denied simply because it is novel or may affect future rate filings and cost of service studies. Do you agree with this statement by Mr. Woodcock?

A. I do not agree with this statement. I believe that the Commission has consistently insured that ratepayers in the same class who receive a regulated product under substantially similar circumstances and conditions pay the same rate. I believe that the Commission's previous ruling in Docket 2048, regarding a similar requested surcharge where only one geographic area benefited, was correct. I also believe that the Commission, if it were to impose the Cumberland surcharge, would indeed open up a Pandora's box. There are numerous examples in water systems (and probably in other utilities as well) that would generate requests for surcharges and rate differentials.

Q. On page 10 of the Pre Filed Rebuttal Testimony of Thomas S. Catlin from July, 2005, Mr. Catlin stated that "I agree that it is appropriate to recover the property taxes assessed

by Cumberland on tangible property in the Town of Cumberland from customers in the Town." Do you agree with this statement by Mr. Catlin?

A. No, I do not agree with this statement. I believe that ratepayers of the same class who receive a regulated service under substantially similar circumstances and conditions should pay the same rate. Moreover, the cost associated with the Cumberland tangible tax and the real property tax and PWSB property should be subject to distribution in a fair and equitable manner to all ratepayers, not just Cumberland ratepayers. The PWSB assets which are being taxed are all located in Cumberland and are a component of the entire production, transmission, and distribution system of PWSB.

Q. Was the valuation analysis attached as Exhibit 1 to your prefiled direct testimony the complete valuation analysis prepared by the Cumberland Tax Assessor?

A. Unfortunately, due to a copying error, the valuation analysis attached as Exhibit 1 to my direct prefiled testimony was incomplete. In order to correct and complete the record, I have attached as Exhibit 1 to this surrebuttal testimony the complete valuation analysis that supports the tangible taxation imposed by the Town of Cumberland.

Q. Do you have any comments with regard to your experience as a Municipal Finance Director as it relates to water rates and charges?

A. I am not offering my opinions as a PUC regulatory expert. I do not hold myself out as such an expert. However, I am a financial expert and I am offering my opinions as a financial expert and as the Finance Director of the Town of Cumberland. My resume is attached as Exhibit 2. My background includes working with the water departments in both Cumberland and

Woonsocket in terms of the annual rate setting process and multiple year rate studies. In addition, I have supervised the installation and support functions related to water reading, billing and collections systems in the City of New Bedford, MA; the Town of Burlington, MA; and the City of New London, CT. In terms of my financial education, qualifications, knowledge, experience, and training with regard to water system administrative processes, I believe that I am qualified to express my opinion as a financial expert regarding issues in this filing that pertain directly to the Town of Cumberland. Pawtucket Water's request to strike my testimony would effectively deny Cumberland, which is a full party intervenor and both a wholesale and retail purchaser of water from PWSB, the right to be fully heard in this matter.

Q. Please explain the difference between the Superior Court process and the current Commission process regarding the tangible taxes levied on Pawtucket Water by the Town of Cumberland.

A. As Finance Director I know that the Rhode Island taxing statute, 44-5-26, is the only manner in which an aggrieved party may contest a tax assessment. The taxpayer is given an appeal to the Cumberland tax assessor, then to the Cumberland Tax Board of Review, and if still unresolved, to Superior Court of the State of Rhode Island. If there is still no resolution, the matter could then go to the Supreme Court of the State of Rhode Island. This is the only method by which an aggrieved party may contest its tax liability. The process before the Commission is a separate process entirely, and I believe that Pawtucket Water is trying to utilize the Commission process to evade responsibility for payment of taxes on property it owns in Cumberland. I ask that the Commission examine and apply its past rulings that are similar in circumstances. The Town of Cumberland, for many years, has taxed Pawtucket Water in terms

of both real estate and tangibles. Certainly the practice of equal cost distribution for real estate tax involves fair and equitable treatment of all of the tax payers in the PWSB System. The outcome of the current Superior Court process may result in a change of classification of many of the assets from tangible to real estate. So, indeed, there is relevance in terms of the Court process with regard to the rate making treatment of the tax.

Q. On page 5 of Mr. Catlin's testimony, he states that the purpose of the surcharge is to "recover the tax assessed on tangible property in the City of Cumberland, which is not assessed by any other taxing jurisdiction within PWSB's service territory." As a long time Finance Director, can you explain why you believe tangible property taxes are not assessed against PWSB in the remainder of its service territory?

A. Yes. PWSB's service territory consists of the City of Pawtucket, the City of Central Falls, and the Town of Cumberland. From a financial standpoint, PWSB is an enterprise fund of the City of Pawtucket and the City and Pawtucket Water are essentially the same entity. As a result, the City of Pawtucket has not imposed taxes on its own property. Taxes are imposed on the non-exempt property of others located within a City or Town. A City or Town does not usually tax its own properties. With regard to Central Falls, PWSB does not own the distribution pipes in Central Falls. Those pipes are currently owned by the City of Central Falls. Central Falls is therefore not be able to assess tangible taxes against the City of Pawtucket on pipes the City of Central Falls owns. However, with regard to Cumberland, PWSB has substantial non-exempt tangible property located in the Town of Cumberland, and by law the Town of Cumberland is authorized and directed to tax all such tangible property located within the Town. Accordingly, I believe that the fact that PWSB is not assessed tangible taxes by any other taxing jurisdiction

within PWSB's service area is simply a function of the fact that PWSB apparently does not have any tangible property located in the City of Central Falls and the tangible property that is has which is located in the City of Pawtucket would not normally be taxed by the City of Pawtucket, because it would only be taxing itself.

Q. Do you agree with Mr. Catlin that "the assessment of taxes on PWSB tangible property is unique to Cumberland." as he stated on page 9?

A. No. As I testified in my prefiled direct testimony, the Commission learned through data requests in the previous docket involving PWSB's attempt to impose a surcharge that the assessment of taxes on tangible property (specifically pipes) owned by water utilities subject to PUC jurisdiction is not unique to Cumberland. Providence Water, United Water, and Newport Water are all taxed by certain cities and towns on their pipes. Other water utilities such as the Kent County Water Authority are statutorily exempt from such taxation. Pawtucket Water's attempts in the legislature to become tax exempt have failed.

Q. Do you agree with Mr. Catlin's statement on page 9 of his testimony that "the purpose of this surcharge would be to recover the property taxes assessed on tangible property within the Town of Cumberland."

A. No. As Cumberland's Finance Director, I believe the purpose of this surcharge is to attempt to shift the legal burden of paying the property taxes from the owner of the property (PWSB) to the Town of Cumberland. In other words, property owners are required to pay taxes on property they own. In this case, the appropriate amount of those taxes will be determined by the Superior Court. If the Commission imposes the requested surcharge, it will have relieved PWSB of its

obligation to pay taxes on property it owns in other jurisdictions, and will have improperly imposed those taxes on the water ratepayers (wholesale and retail) in the Town of Cumberland. All taxpayers should pay the taxes they owe. The Commission should not allow itself to be used by PWSB to avoid paying its taxes. PWSB has invoked its right to appeal the amount of the taxes to Superior Court, and the amount of taxes (as well as the amount of any refunds) will be determined in Superior Court, but whatever amount the Superior Court decides is appropriate must be paid by the owner of the property (i.e. PWSB).

Q. Do you agree with Mr. Catlin's statement on page 10 of his testimony that "the tangible property upon which the Town of Cumberland assesses property taxes consists almost exclusively of distribution pipes located in the Town."

A. Absolutely not. As I stated in my prefiled direct testimony, the tangible property upon which the Town of Cumberland has assessed the tangible property taxes is extensive and varied. Only part of it consists of PWSB's distribution pipes in Cumberland. For example, the tangible tax is being assessed against a 23 million gallon aeration basin, a 500,000 gallon clearwell, a 17 million gallon settling basin, floculators, a dam, two large below surface pumps, 6 and 12 million capacity pumping stations, a 1 ½ mile, 4 foot transmission pipeline that carries water from PWSB's treatment plant to Cumberland, lab equipment, and various miscellaneous tangible assets such as furniture, computers, and other machinery and equipment. The PWSB distribution pipes are only a portion of the property upon which the Town is assessing the tangible taxes.

Q. Do you agree with Mr. Catlin's statement on page 10 that "it was appropriate to recover the property taxes assessed by Cumberland on tangible property in the Town of Cumberland from customers in the Town."

A. No. For the reason stated above, these property taxes are the legal obligation of PWSB, who is the owner of the property, and it is not appropriate for PWSB to use the Commission to try to transfer its legal obligation to pay these taxes to the Cumberland ratepayers. Moreover, just by looking at the items I itemized above, it becomes clear that these items are all utilized for the general benefit of all customers of PWSB. There can be no good faith dispute that the aeration basin, clearwell, settling basin, floculators, dam, below surface pumps, pumping station pumps, lab equipment, transmission pipeline, furniture, computers, etc. benefit all customers of PWSB. To claim, as Mr. Catlin stated on page 10, "that property is in place to serve the customers in Cumberland" is simply not true. The only property that primarily serves the customers in Cumberland are the distribution pipes, and the distribution pipes make up only a portion of the taxable property. However, there are distribution pipes in Pawtucket, and there are distribution pipes in Central Falls. It is undisputed that PWSB owns the distribution pipes in Cumberland and that it is legally obligated to pay whatever taxes the Court decides are appropriate on those pipes.

Q. Mr. Bruce, do you believe there is a general benefit to PWSB from maintaining its distribution pipes in Cumberland?

A. Yes, of course there is a general benefit. These distribution pipes provide PWSB with the ability to service approximately 2,748 retail customers in Cumberland. These additional retail

customers of PWSB allow PWSB to spread its many and varied costs out over a larger customer base, which provides a general benefit to the entire system.

Q. Are there any other general benefits to PWSB from its relationship with the Town of Cumberland?

A. Yes. The Town of Cumberland is currently PWSB's only wholesale customer. These wholesale sales provide additional benefits to PWSB in terms of spreading the costs of its entire system out over a larger customer base. Moreover, as explained in more detail in the testimony of Christopher Collins, the Superintendent of the Cumberland Water Department, PWSB utilizes the Cumberland Water Department distribution pipes, a pumping station, and a storage tank to provide water service to approximately 350 PWSB retail customers that PWSB could not otherwise serve. PWSB's use of the water distribution pipes of the Town of Cumberland, as well as Cumberland's pumping and storage of the water, is provided by the Cumberland Water Department at no cost to PWSB. This is a significant general benefit to PWSB, in my opinion.

Q. Mr. Bruce, are you prepared to answer questions on cross-examination relating to Pawtucket Water's and the Division's first set of data requests to the Town of Cumberland?

A. Yes. I discussed these responses with Mr. McElroy and/or provided input to him regarding the responses. In some cases, as indicated on the responses, input was also provided by the Town's former Tax Assessor, Michael O'Leary, and/or Christopher Collins of the Cumberland Water Department. I am prepared to answer questions on cross-examination regarding these data requests.

Q. Does that conclude your surrebuttal testimony?

A. Yes, it does.

EXHIBIT 1

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org

(401) 728-2400
Sandra St. Laurent x–13
Shirley Pemberton x–14
Fax (401) 475-1851

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

TABLE OF CONTENTS

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org

(401) 728-2400
Sandra St. Laurent x–13
Shirley Pemberton x–14
Fax (401) 475-1851

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

REPORTING HISTORY FOR ACCOUNT # 16-1047-50

Enclosed in Section I is a copy of the reporting history for the Tangible property owned by Pawtucket Water Supply Board. The Annual Tangible Declaration Form is sent out every December to all Tangible property owners according to R.I. Law 44-5-15. The records show that concerning the 1995 PWSB Tangible Property the Assessor calculated and priced out the dams. The 1995 Tangible value was raised from $1,137,802 in 1994 to $9,755,040 in 1995 and PWSB.In 1996 there is a limited filing showing acquisitions from 1988 to 1995 but there was no mention of deletions in the file and PWSB did not appeal the value. The 1996 value was lowered to $8,408,390 from a value of $9,755,040 in 1995 with no explanation of this reduction in the Town of Cumberland's documentation. In 1997 the value was lowered to $7,534,277.In 1998 the value was lowered or rounded to $7,530,200 There is filing information in Section I and it looks like it was during 1998 but there is no descriptive information explaining that years value. In this appraisal this 1998 information is referenced and priced out in Section II as I attempted to piece together an asset list.

During the 1999, 2000, and 2001 years a penalty was assessed for not filing the Annual Tangible Declaration Form and there was no accounting of the assets owned by PWSB during these years and no evidence of any appeals of these values.

TANGIBLE v. REAL PROPERTY

The International Association of Assessing Officers states, in Section V, in the supporting documentation: **"Personal Property means identifiable, moveable, and tangible items that are not classified as real estate."** There are no existing State codes for utility distribution systems in the CAMA Systems that are used to value property for tax purposes in the State of Rhode Island.

Enclosed in Section II is the: "**Survey of Tangible Taxing Practices**" which was created when I contacted twenty-five Assessor's and asked if the non-exempt underground water distribution systems were valued and taxed as Tangible Property. Seven municipalities had non-exempt underground drinking water systems and all seven were taxing their systems as Tangible Property. All twenty-five municipalities were taxing the underground natural gas distribution systems as Tangible Property.

NINE NOT SEVEN

During the 2003 Assessment Board of Review hearing, the Board on 1/9/2003 requested a listing of assets, in Section I, and Pawtucket Water Supply Board submitted the enclosed filing for $217,423.30 on 2/13/2003 the Board reviewed this filing and denied the appeal.

Is it reasonable to assume that the assets went from $9,755,040 to $217,423.30 from 1995 to 2002?

In order to price all the utility property as Tangible in the Town of Cumberland, I needed an asset listing for each utility's property for the 2002 tax year in order to answer the above question. I field checked Pawtucket Water Supply Board and all the other utilities tangible properties in the Town of Cumberland during the fall of 2001. Alan Champagne, the engineer for PWSB, accompanied me on my inspection and provided the much needed detailed information on most of the assets for the water supply system.

The next step was to price out the new asset list and determine if the current value of $8,500,000 was a reasonable figure. In Section III the research develops values for the PWSB assets discovered on the field review. I determined that the range of value as new for the Pawtucket Supply Boards current water purification and distribution system was in the $40,000,000 to $60,000,000 range. I used a 50% depreciation rate, Section V, because of the observed condition of the assets on my field inspection. Also I have observed over the last fifteen years of valuing utilities for tax purposes that because of "public safety" most utility equipment is the best quality when purchased and well maintained to minimize the potential danger to the water supply. The depreciated range of value for the above-mentioned assets is $20,000,000 to $30,000,000 but because of the absence of reporting information I chose the lower end of the range, which is an estimate of value of $20,000,000 as of 12/31/2002.

ASSESSOR'S OPINION

In my opinion I think all tangible property owners have a legal responsibility to be forthcoming with asset reporting in order to give the Assessor a reasonable opportunity to verify the values of the assets owned for the year in question. This report also allows the adjustment of assets no longer in use and all new acquisitions for that year. The owner of the personal property should be willing to cooperate with this effort. If the property owner does not cooperate, the Assessor is responsible to field check the assets to discover new assets, list the important information of existing assets and assign observed depreciation for each asset in the jurisdiction. **The Assessor has the responsibility to assign a full and fair case value based on the observed and available information of the assets, contractors estimates of similar installed assets, current values of similar existing properties in cost publications, construction or contracted cost new of similar properties and convert all this data using the established approaches to value, Section II, explained below.**

PURPOSE OF THE APPRAISAL

The following is an estimate of the full and fair cash value for the assets in the Town of Cumberland, owned by Pawtucket Water Supply Board, Account #16-1047-50, using the

Cost Approach as it relates to the unit value, both explained in Section V, of utility property based on: the field discovery of assets; observed depreciation based on age and current condition of assets at the time of discovery and inspection; all established pricing systems, methods and means available; consulting and referencing ranges of value with current participants in utility management and my fifteen years of experience valuing utilities for tax purposes in six different states.

APPROACHES TO VALUE:

The Three Approaches to Value, Market, Income, and Cost, were considered for this opinion of value.

The Market Approach revealed no valid sales of water distribution systems at the time of this analysis.

The Income Approach was considered using the stated income, an average industrial expense rate and a capitalization rate consistent with industrial standards. However this approach relies on the segmented value for the percentage of the assets in the Town of Cumberland based on the assets for the whole company. This segmented percentage is very difficult to verify. Also utility properties are owner occupied and at the time of this report there were no utility property rents available.

The Cost Approach, Section III, considers replacement cost new (not reproduction cost – an exact replica) less depreciation based on original age and condition. This report analyzes the ranges of values for different assets in drinking water systems. For example, the enclosed Potable Water Systems Infrastructure Study done in 1997 by Seigmund & Associates to value the drinking water system owned by the City of Central Falls develops a depreciated value of $661,530 per mile for the drinking water distribution system. This study was done to negotiate a possible lease of this system to Pawtucket Water Supply Board. **Although this system is not an exact replica of the Cumberland system it represents a range of value for a drinking water distribution system in Central Falls the abutting municipality as of 1997.**

RECONCILIATION AND FINAL VALUE ESTIMATES:

The enclosed Consultants Estimates is a compilation of specific value ranges for the assets in the Cumberland drinking water system. The contractors consulted include two experts from the final two vendors in the recent bid to build the new Pawtucket Water Treatment plant. Mr. De Long from Earth Tech mentioned a recent installation of twenty miles of drinking water distribution system in Lawrence, Massachusetts and the cost according to Mr. DeLong was $72,000,000 or $3,600,000 per mile. Mr. DeLong also estimated the value of the current retention ponds (there are three) at the Cumberland plant at $50,000 apiece not lined. He estimated the Aeration System at $300,000, pumps at $500,000 apiece (there are four). Mr. DeLong also described the new Plant which would cost $42,000,000 to install and having the capacity of 35 million gallons a day replacing the current plant which is rated at 28 million gallons a day. This represents a

"construction or contracted cost new" value of $1.20 per gallon to construct a water treatment plant. **The current plant could cost $33,600,000 to build new for a 28 million gallon capacity plant if it was constructed in 2004.** The current selling price for drinking water is at least $.135 per gallon.The other contractors agreed that the values in the Consultant's Estimates report were reasonable although the assets referenced were not exact replicas. The premise of this report is to estimate replacement cost new less depreciation based on the age and condition of the assets.

The Marshall & Swift Analysis is based on available pricing on drinking water distribution systems. The analysis is not a detailed engineering report but provides important insight into the replacement cost new of the distribution system. Marshall & Swift does not have complete pricing information on all the equipment used in pricing a drinking water processing and distribution system. The miscellaneous category is an estimate for the retention ponds (processing pond 15 million gallons, clear well 500,000 gallons, settling basin 17 million gallons, aeration basin 23 million gallons) the aeration system and the purification equipment used in the processing of drinking water. The estimates of the four dams are based on the limited information gathered during the field check.This information was gathered (listed in the PWSB THE PLANT) by on sight inspection and phone conversations with Engineers Alan Champagne, Bill Mazick & Tom Ducette.

The condition of the equipment was determined during field inspection to be average for its age and condition and currently supplying drinking water to at least three communities. The equipment is well maintained as is expected considering the "Public Safety"factor.

The range of depreciated value for the subject property is $20,000,000 to $30,000,000 and the value of $20,000,000 is the lower end of this range of value.

Appraiser/Assessor: Michael W. O'Leary **Date:** 11/30/03

SECTION I

REPORTING HISTORY
16-1047-50

729-5004

REAL ESTATE AND TANGIBLE PERSONAL PROPERTY

Sec # 11

NAME	STREET	P. O.
Pawtucket City of	~~250 Armistice Blvd.~~	Pawtucket
c/o Water Supply Board		
85 Branch Street Pawtucket 02860		

YEAR	PLAT	LOT	LOCATION	CODE	LAND	BUILDING	TANGIBLE PERSONAL	MOTOR VEHICLE	TOTAL VAL.	EXEMPTION	NET TAX VALUATION
		985-149	various locations	18			938,200				
1986R							Same				
87							Same				
88							"				
89							"				
90							"				
94			did not file				1,137,802				
95		Reval	did not file				6,875,040			Dam 1 69-1	89,700
95			additional assessment				288,000	0 Total 49,755,040		Dam 2 70-2	1,973,400
1996			8408,390.– 9755046 -1630700 8124340 +284,050.– = 8408390.							Dam 3 69-3	881,400
										Dam 4 71-1	809,300
										Plant Equip 71-2.	356,240
											1630,700
1997							7,534,277.				49,755,040
1998							7,530,300.				
99							7,600,000				

DBA PAWTUCKET WATER SUPPLY BOARD ACCT. # 16104750 SEQ # 1162

ADDRESS: 85 Branch Street Pawtucket RI 02860 PHONE # 729-5001

CONTACT PERSON: Thomas F. Doucette-Acting Chief Engineer PHONE #

LEGAL NAME OF BUSINESS: Pawtucket Water Supply Board

MAILING ADDRESS: 85 Branch Street Pawtucket RI 02860

NATURE OF BUSINESS: Public Water Supplier

NOTES:

N

YEARLY FILING STATUS OF DECLARATION						FIELD CHECKS		
YEAR	FILING STATUS	ASSESSMENT	YEAR	FILING STATUS	ASSESSMENT	DATE	LISTER	VALUE
1999		7,600,000						
2000	DNF	7,700,000 HC						
2001	DNF	8,500,000 HC ✓						
2002	DNF	20,000,000 ✓						
2003	FILED-INC.	20,000,000						

Paul DeLong

BOARD OF REVIEW DECISION

THE BELOW APPEAL HAS BEEN: APPROVED DENIED
EXTENDED TO 2/13/03

DATE OF HEARING: 1-9-03 MAP/LOT: TANGIBLES

OWNER: PAWT WATER Supply Bd

HEARING OFFICERS PRESENT: Mr Ereio, Mr Palagi, Mr Jordan

OWNER REPRESENTATIVES: Attorney J Keough Mr Wm Coyle

REASON FOR APPEAL: Value of tangibles set by town at #20,000,000 vs $8,500,000
Should be #2000 for excess land w/no access

ACTION TO BE TAKEN: Held for information by Assessor + PWSB
Motion to Deny.

REASON FOR DECISION:
Board accepts Assessors appraisal

NOTES:

2"

ALL HEARING OFFICERS MUST SIGN APPROVAL OF ACTION BELOW:

1. [signature] ALBERTO EREIO

2. [signature] RALPH JORDAN

3. [signature] DONALD PALAGI

ASSESSOR: DATE:

8,500,000 / 18,000,000 / 17,000,000

SECTION 4 2002 DELETIONS (Please note below if a separate listing is attached)

Description Of Asset	Year Of Acquisition	Original Cost	Date Removed

SECTION 5 UTILITY COMPANIES (PWSB, N. E. Gas, Electric, Railroad, Gas Pipelines)

Calendar Year Purchased	Description Of Asset / Brand / Model	Cost New	Depreciation 2% Per Year	Depreciated Value	Assessor's Use Only
2002			(x) 98%		
2001			(x) 96%		
2000			(x) 94%		
1999			(x) 92%		
1998			(x) 90%		
1978 and prior			(x) 50%		

SECTION 6 LEASED / RENTED / CONSIGNED - THAT YOU DO NOT OWN PLEASE INCLUDE IRS FORM 4562

This Section to be Used by All Businesses INCLUDING MANUFACTURER

✳ Also includes Leased/Rented: Copiers, Fax Machines, Printers, Any Personal Property Leased

Owner/Address	Item Description	Cost New	Lease Term	Monthly Rent	Lease #

SECTION 7 TANGIBLE PROPERTY - THAT YOU OWN THAT IS LEASED OR RENTED TO OTHERS

If on the date of assessment you owned any items of tangible personal property (except registered motor vehicles) which you lease or rent to others, **attach a separate schedule to this form,** and report all of the following information for each item:

Lessee's name and location of property, description of property, your acquisition cost, date of acquisition or installation, date of manufacture, monthly rental or lease income, and dates of lease.

If tangible personal property is located in the Town of Cumberland after July 1st, the owner of said property will be taxed for the entire year.

Town of Cumberland, Rhode Island
Annual Tangible Property Declaration

The Law is Mandatory - A Return Must Be Filed (RI Law Section 44-5-15, as amended)
And Mail To: Assessor, P.O. Box 7, Town Hall, Cumberland, RI 02864-007

Valuation date is 12/31/2002: Ownership and location of assets during 2002; Assets in Cumberland after July 1, 2002 are taxable for the whole year. The assessor must receive written proof of transferred assets, including new owner information.

16-1047-50
PAWTUCKET WATER SUPPLY BOARD
85 BRANCH STREET
PAWTUCKET, RI 02860

← This Name and Mailing Address Will Be Used For Tax Bill. Please Change If Incorrect

For your convenience, we have supplied you with this form for the declaration of **taxable property located in Rhode Island**. According to The General Laws Of Rhode Island, taxable property **must** be declared to the Assessor between December 31, 2002 and January 31, 2003. If a taxpayer is unable to make such declaration within the prescribed time, they may submit written notice, prior to January 31, of intention to submit a declaration by March 15th. **" Failure to file a true and full account within the prescribed time eliminates the right to appeal. "** No amended returns will be accepted after March 15th, 2003.

Thank you for your cooperation.
If we can be of assistance in preparing your report, contact our office at 401-728-2400 x-13/14

Corporation/ Partners/ Individual **Ownership:** ☐ Corporation ☐ Co-Partnership ☐ Individual

NAME(S): _____

Business Name/ DBA: PAWTUCKET WATER SUPPLY BOARD /PAWTUCKET PUBLIC BUILDINGS AUTHORITY

Business Address: 85 BRANCH STREET, PAWTUCKET, RI 02860

Mailing Address: SAME AS ABOVE
(if different from above)

ASSESSOR'S OFFICE RECEIVED 3/13/03

Give a Description of Your Business Operation

PUBLIC WATER SUPPLIER

Dates of which you were in business in the Town of Cumberland, RI Jan. 1, 2002 to Dec. 31, 2002

☐ Mfg. ☒ Wholesale ☐ Retail ☐ Other

Number of employees as of December 31, 2002 FIFTEEN Square Feet Occupied 25,400

I THOMAS F. DOUCETTE

ASSISTANT CHIEF ENGINEER

(Name and Title) am responsible for the information contained within this form

My Daytime Address is:
85 BRANCH STREET

401-729-5004
My Daytime Phone No. is:

tdoucette@pwsb.org

AT BOA HEARING AS 2002 FILING - FOR APPEAL OF 2002 TANG VALUE

UTILITY COMPANIES PIPELINES

CALENDAR YEAR PURCHASED	COST NEW	DEPRECIATION RATE	DEPRECIATED VALUE
2002	$0.00	98.00%	$0.00
2001	$140,342.00	96.00%	$134,728.32
2000	$0.00	94.00%	$0.00
1999	$0.00	92.00%	$0.00
1998	$0.00	90.00%	$0.00
1997	$65,360.00	88.00%	$57,516.80
1996	$110,037.00	86.00%	$94,631.82
1995	$209,538.00	84.00%	$176,011.92
1994	$113,898.00	82.00%	$93,396.36
1993	$139,120.00	80.00%	$111,296.00
1992	$3,880.00	78.00%	$3,026.40
1991	$0.00	76.00%	$0.00
1990	$4,066.00	74.00%	$3,008.84
1989	$52,250.00	72.00%	$37,620.00
1988	$32,967.00	70.00%	$23,076.90
1987	$73,548.00	68.00%	$50,012.64
1986	$94,572.00	66.00%	$62,417.52
1985	$134,190.00	64.00%	$85,881.60
1984	$9,030.00	62.00%	$5,598.60
1983	$27,475.00	60.00%	$16,485.00
1982	$5,880.00	58.00%	$3,410.40
1981	$0.00	56.00%	$0.00
1980	$8,875.00	54.00%	$4,792.50
1979	$0.00	52.00%	$0.00
1978-PRIOR	$3,026,424.50	50.00%	$1,513,212.25
TOTALS	$4,251,452.50		$2,476,123.87

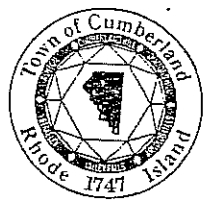
ITEM NO.	QUANTITY IN FEET	YEAR INSTALLED	DESCRIPTION	TOTAL INSTALLED COST	CALENDAR YEAR PURCHASED
1	0	2002	water mains	$0.00	$0.00
2	2986	2001	water mains	$140,342.00	$140,342.00
3	0	2000	water mains	$0.00	$0.00
4	0	1999	water mains	$0.00	$0.00
5	0	1998	water mains	$0.00	$0.00
6	1520	1997	water mains	$65,360.00	$65,360.00

ITEM NO.	QUANTITY IN FEET	YEAR INSTALLED	DESCRIPTION	TOTAL INSTALLED COST	CALENDAR YEAR PURCHASED
47	1058	1956	water mains	$24,863.00	
48	1950	1955	water mains	$45,825.00	
49	0	1954	water mains	$0.00	
50	4046	1953	water mains	$93,058.00	
51	2568	1952	water mains	$57,780.00	
52	1826	1951	water mains	$41,085.00	
53	7125	1950	water mains	$156,750.00	
54	5075	1949	water mains	$111,650.00	
55	2538	1948	water mains	$54,567.00	
56	6685	1947	water mains	$143,727.50	
57	0	1946	water mains	$0.00	
58	0	1945	water mains	$0.00	
59	0	1944	water mains	$0.00	
60	0	1943	water mains	$0.00	
61	0	1942	water mains	$0.00	
62	0	1941	water mains	$0.00	
63	0	1940	water mains	$0.00	
64	0	1939	water mains	$0.00	
65	545	1938	water mains	$10,355.00	
66	0	1937	water mains	$0.00	
67	0	1936	water mains	$0.00	
68	2298	1935	water mains	$42,513.00	
69	1110	1934	water mains	$19,980.00	
70	0	1933	water mains	$0.00	
71	1448	1932	water mains	$25,340.00	
72	0	1931	water mains	$0.00	
73	3395	1930	water mains	$57,715.00	
74	2728	1929	water mains	$46,376.00	
75	1105	1928	water mains	$18,232.50	
76	1601	1927	water mains	$26,416.50	
77	1979	1926	water mains	$31,664.00	
78	0	1925	water mains	$0.00	
79	1210	1924	water mains	$18,755.00	
80	600	1923	water mains	$9,300.00	
81	0	1922	water mains	$0.00	
82	0	1921	water mains	$0.00	
83	0	1920	water mains	$0.00	
84	0	1919	water mains	$0.00	
85	0	1918	water mains	$0.00	
86	0	1917	water mains	$0.00	

ITEM NO.	QUANTITY IN FEET	YEAR INSTALLED	DESCRIPTION	TOTAL INSTALLED COST	CALENDAR YEAR PURCHASED
7	2559	1996	water mains	$110,037.00	$110,037.00
8	4989	1995	water mains	$209,538.00	$209,538.00
9	2778	1994	water mains	$113,898.00	$113,898.00
10	3478	1993	water mains	$139,120.00	$139,120.00
11	97	1992	water mains	$3,880.00	$3,880.00
12	0	1991	water mains	$0.00	$0.00
13	107	1990	water mains	$4,066.00	$4,066.00
14	1375	1989	water mains	$52,250.00	$52,250.00
15	891	1988	water mains	$32,967.00	$32,967.00
16	2043	1987	water mains	$73,548.00	$73,548.00
17	2627	1986	water mains	$94,572.00	$94,572.00
18	3834	1985	water mains	$134,190.00	$134,190.00
19	258	1984	water mains	$9,030.00	$9,030.00
20	785	1983	water mains	$27,475.00	$27,475.00
21	168	1982	water mains	$5,880.00	$5,880.00
22	0	1981	water mains	$0.00	$0.00
23	250	1980	water mains	$8,875.00	$8,875.00
24	0	1979	water mains	$0.00	$0.00
25	1550	1978	water mains	$54,250.00	
26	1726	1977	water mains	$60,410.00	
27	862	1976	water mains	$29,739.00	
28	333	1975	water mains	$11,488.50	
29	0	1974	water mains	$0.00	
30	770	1973	water mains	$25,410.00	
31	0	1972	water mains	$0.00	
32	0	1971	water mains	$0.00	
33	1702	1970	water mains	$56,166.00	
34	2097	1969	water mains	$69,201.00	
34	325	1968	water mains	$10,237.50	
36	3785	1967	water mains	$119,227.50	
37	1927	1966	water mains	$55,883.00	
38	2352	1965	water mains	$65,856.00	
39	4555	1964	water mains	$122,985.00	
40	2619	1963	water mains	$68,094.00	
41	2889	1962	water mains	$72,225.00	
42	5427	1961	water mains	$135,675.00	
43	3382	1960	water mains	$82,859.00	
44	13449	1959	water mains	$329,500.50	
45	6405	1958	water mains	$153,720.00	
46	7580	1957	water mains	$181,920.00	

ITEM NO.	QUANTITY IN FEET	YEAR INSTALLED	DESCRIPTION	TOTAL INSTALLED COST	CALENDAR YEAR PURCHASED
87	0	1916	water mains	$0.00	
88	0	1915	water mains	$0.00	
89	1449	1914	water mains	$18,837.00	
90	2609	1913	water mains	$33,917.00	
91	979	1912	water mains	$12,237.50	
92	875	1911	water mains	$10,937.50	
93	0	1910	water mains	$0.00	
94	0	1909	water mains	$0.00	
95	357	1908	water mains	$4,105.50	
96	0	1907	water mains	$0.00	
97	0	1906	water mains	$0.00	
98	0	1905	water mains	$0.00	
99	200	1904	water mains	$2,100.00	
100	0	1903	water mains	$0.00	
101	1842	1902	water mains	$18,420.00	
102	0	1901	water mains	$0.00	
103	6455	1900	water mains	$61,322.50	
105	0	1899	water mains	$0.00	
106	0	1898	water mains	$0.00	
107	0	1897	water mains	$0.00	
108	0	1896	water mains	$0.00	
109	467	1895	water mains	$3,969.50	
110	1525	1894	water mains	$12,200.00	
111	0	1893	water mains	$0.00	
112	0	1892	water mains	$0.00	
113	0	1891	water mains	$0.00	
114	540	1890	water mains	$3,780.00	
115	0	1889	water mains	$0.00	
116	0	1888	water mains	$0.00	
117	505	1887	water mains	$3,535.00	
118	0	1886	water mains	$0.00	
119	0	1885	water mains	$0.00	
120	0	1884	water mains	$0.00	
121	1593	1883	water mains	$11,151.00	
122	860	1882	water mains	$6,020.00	
123	11079	1881	water mains	$83,092.50	$3,026,424.50

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org



(401) 728-2400
Sandra St. Laurent x–13
Shirley Pemberton x–14
Fax (401) 475-1851

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

Tuesday, August 12, 2003

Pawtucket Water Supply Board
85 Branch St.
Pawtucket, RI 02860
Attn: Mr. Thomas F. Doucette

Dear Mr. Doucette,

The appealed filed for Tangible Property on July 18, 2003 has been denied.
This is your appeal to the Tax Assessor.
If you are not satisfied you may appeal to the Board of Assessment Review. The applications are available in the Assessor's Office.

Sincerely,

Michael W. O'Leary

Michael W. O'Leary, R.I.C.A.
Tax Assessor

cc: Joseph A. Keough, Jr., Mark L. Smith

8/18/03

KEOUGH & SWEENEY, LTD.

ATTORNEYS AND COUNSELORS AT LAW
100 ARMISTICE BOULEVARD
PAWTUCKET, RHODE ISLAND 02860
TELEPHONE
(401) 724-3600
FACSIMILE
(401) 724-9909
www.keoughsweeney.com

JOSEPH A. KEOUGH JR.*
JEROME V. SWEENEY III*

JEROME V. SWEENEY II+
OF COUNSEL

BOSTON OFFICE:
171 MILK STREET
SUITE 30
BOSTON, MA 02109
TEL. (617) 574-0054
FAX (617) 451-1914

July 18, 2003

Mr. Michael O'Leary
Tax Assessor
Town of Cumberland
45 Broad Street
Cumberland, RI 02864

RE: Pawtucket Water Supply Board, et al - Tax Appeal

Dear Mr. O'Leary:

Enclosed please find the Pawtucket Water Supply Board's appeal of the tangible property tax assessment for 2003. If you have any questions, comments or problems with this appeal, please do not hesitate to contact me.

Sincerely,

Joseph A. Keough, Jr.

JAK:prc

ASSESSOR'S OFFICE
RECEIVED
7/18/03

2003

APPEAL OF THE PROPERTY ASSESMENT TO THE CUMBERLAND TOWN TAX ASSESSOR

(R.I. GEN. LAW 44-5-26)

For appeals to the Tax Assessor, this form must be filed within **90 days** after the first Tax Payment is due.
For appeals to the Board of Assessors, this form must be filed within **30 days** after the Tax Assessor renders a decision.

Date: 7/18/03 **Plat:** N/A **Lot:** N/A ***Tangible Property Acct. No. 16-1047-50 (as listed on tax bill)**

Name of Owner or Agent: Pawtucket Water Supply Board
Address of Appealed Property: N/A
Owner Mailing Address: 85 Branch Street, Pawtucket, RI 02860
Telephone Numbers (Home): N/A (Work): c/o (401) 724-3600

Your Opinion of Value: $221,366.60
Explain: See Tangible Property Declaration filed with Assessor on March 13, 2003, a copy of which is incorporated herein and attached hereto.

Old Value: **Land Value:** _____
Build Value: _____
Total Value: $20,000,000 (assessed for 2002 and 2003)

Have you filed a true and exact account this year with the Town of Cumberland Tax Assessor as required by Law? Yes, see above.

Comparable Current Sales of Similar Properties Supporting Your Claim:

Address	Sale Price	Date of Sale	Assessed Value
N/A			

Signature of Applicant or Agent: [signature] Date: 7/18/03

DISPOSITION OF APPLICATION: Decision (DON'T WRITE BELOW LINE)

Date: _____ Inspection: _____
Assessed Value: _____ Abated Value: _____
Comments: _____
Signature: _____ Date: _____

Any person still aggrieved by an assessment of taxes in the Town of Cumberland, may, within 30 days of the Board of Assessors decision, file a petition in R.I. Superior Court.

KEOUGH & SWEENEY, LTD.
ATTORNEYS AND COUNSELORS AT LAW
100 ARMISTICE BOULEVARD
PAWTUCKET, RHODE ISLAND 02860
TELEPHONE
(401) 724-3600
FACSIMILE
(401) 724-9909
www.keoughsweeney.com

JOSEPH A. KEOUGH JR.*
JEROME V. SWEENEY III*
*ADMITTED TO PRACTICE IN RHODE ISLAND AND MASSACHUSETTS

BOSTON OFFICE:
171 MILK STREET
SUITE 30
BOSTON, MA 02109
TEL. (617) 574-0054
FAX (617) 451-1914

January 27, 2003

Town of Cumberland
Board of Tax Assessors
c/o Cumberland Town Hall
45 Broad Street
Cumberland, RI 02864

RE: Pawtucket Water Supply Board Tax Appeal

Dear Board Members:

I have received a hearing notice regarding the Pawtucket Water Supply Board's appeal of their tangible property taxes. The hearing has been scheduled for February 13, 2003, at 8 p.m.

Please note that I am beginning a trial in front of Judge Tauro in United States District Court in Boston beginning February 10, 2003. I expect that the case will last at least a week and I will be staying in Boston for the duration of the trial. As such, I cannot attend the hearing.

To that end, I would ask that you please reschedule the hearing of February 13, 2003. I will be available any night the week of February 24, 2003.

Thank you for your attention to this matter.

Sincerely,

Joseph A. Keough, Jr.

JAK:JGF
cc: Mr. Michael W. O'Leary, Tax Assessor
Mr. William Coyle

ASSESSOR'S OFFICE
RECEIVED
1/29/03

KEOUGH & SWEENEY, LTD.

ATTORNEYS AND COUNSELORS AT LAW
100 ARMISTICE BOULEVARD
PAWTUCKET, RHODE ISLAND 02860
TELEPHONE
(401) 724-3600
FACSIMILE
(401) 724-9909
www.keoughsweeney.com

JOSEPH A. KEOUGH JR.*
JEROME V. SWEENEY III*
*ADMITTED TO PRACTICE IN RHODE ISLAND AND MASSACHUSETTS

BOSTON OFFICE:
171 MILK STREET
SUITE 30
BOSTON, MA 02109
TEL. (617) 574-0054
FAX (617) 451-1914

January 30, 2003

HAND-DELIVERD

Mr. Michael O'Leary
Tax Assessor
Town of Cumberland
45 Broad Street
Cumberland, RI. 02864

RE: Pawtucket Water Supply Board, et al - Tax Appeal

Dear Mr. O'Leary:

Please be advised that pursuant to the General Laws of Rhode Island, the Pawtucket Water Supply Board and the Pawtucket Public Buildings Authority is unable to submit a declaration of its taxable property, both real and tangible, located in the Town of Cumberland before January 31, 2003, for property owned during 2002. Nevertheless, the Pawtucket Water Supply Board and the Pawtucket Public Buildings Authority intends to submit a declaration of its taxable property, both real and tangible, by March 15, 2003. As you know, this right to provide notice of our intention to submit a declaration by March 15 is provided for in the General Laws of Rhode Island.

Thank you for your attention to this matter.

Sincerely,

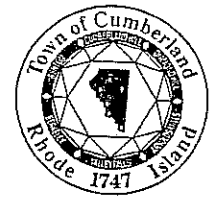
Joseph A. Keough, Jr.

JAK:JGF

cc: Mr. William Coyle

ASSESSOR'S OFFICE
RECEIVED
1/30/03

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org



(401) 728-2400
Sandra St. Laurent x–13
Shirley Pemberton x–14
Fax (401) 475-1851

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

Monday, February 24, 2003

Coyle Appraisal Co.
P.O. Box 1323
Pawtucket, RI 02862
Attn: Bill Coyle

Dear Bill,

On 2/13/2003 the Board of Assessment Review denied the filed appeal for 2002 Tangible Property value for Pawtucket Water Supply Board.

Sincerely,

Michael W. O'Leary

Michael W. O'Leary
Tax Assessor

cc: Attorney Joeseph A. Keough Jr.

KEOUGH & SWEENEY, LTD.
ATTORNEYS AND COUNSELORS AT LAW
100 ARMISTICE BOULEVARD
PAWTUCKET, RHODE ISLAND 02860
TELEPHONE
(401) 724-3600
FACSIMILE
(401) 724-9909
www.keoughsweeney.com

JOSEPH A. KEOUGH JR.*
JEROME V. SWEENEY III*
*ADMITTED TO PRACTICE IN RHODE ISLAND AND MASSACHUSETTS

BOSTON OFFICE:
171 MILK STREET
SUITE 30
BOSTON, MA 02109
TEL. (617) 574-0054
FAX (617) 451-1914

March 13, 2003

HAND-DELIVERED

Mr. Michael O'Leary
Tax Assessor
Town of Cumberland
45 Broad Street
Cumberland, RI 02864

RE: Pawtucket Water Supply Board, et al - Tax Appeal

Dear Mr. O'Leary:

Pursuant to my letter of January 30, 2003, enclosed please find the Annual Tangible Property Declaration setting forth ownership and location of assets during 2002 for the Pawtucket Water Supply Board and the Pawtucket Public Buildings Authority.

Thank you for your attention to this matter.

Sincerely,

Joseph A. Keough, Jr.

JAK:JGF
Enclosure

cc: Mr. William Coyle, III

ASSESSOR'S OFFICE
RECEIVED
3/13/03

TOWN OF CUMBERLAND - ASSESSOR'S OFFICE
ANNUAL TANGIBLE PROPERTY DECLARATION

SECTION 1 - TANGIBLE PERSONAL PROPERTY

CALENDAR YEAR PURCHASED	COST NEW	DEPRECIATION RATE	DEPRECIATED VALUE
2002	$900.00	95%	$855.00
2001	$21,500.00	90%	$19,350.00
2000	$2,400.00	80%	$1,920.00
1999	$34,884.00	70%	$24,418.80
1998	$300.00	60%	$180.00
1997-PRIOR	$341,399.00	50%	$170,699.50
TOTALS	$401,383.00		$217,423.30

PURIFICATION PLANT - 120 MILL STREET

ITEM NO.	QUANTITY	YEAR ACQUIRED	BRAND NAME/MODEL	COST NEW	CALENDAR YEAR TOTALS
1	1	2001	Hach turbidmeters - 1720D	$21,500.00	$21,500.00
2	2	1999	US Browing flocculators - CBN 2503	$32,000.00	
3	1	1999	Cannon copier - 6221	$1,884.00	$33,884.00
4	1	1997	4000 gal fuel tank - Highland UL142	$3,656.00	
5	1	1997	Badger meters - 4500DS	$4,460.00	
6	1	1997	signal transmission equipment-OEI OSR1130	$3,911.00	
7	2	1995	Forcr flow chlorine scales-6080	$1,500.00	
8	2	1994	United swivel chair - NSI	$172.00	
9	2	1994	CJ wood chairs-1746	$116.00	
10	1	1993	Steelcase typist chair 5-5	$75.00	
11	1	1992	Hach Ph meter - EC1000	$1,100.00	
12	1	1991	Clark electric fork lift - FC500-S30	$8,500.00	
13	1	1990	MSA 401 air tank & mask	$2,500.00	
14	2	1989	Hach chlorine analyzers CL17	$4,600.00	
15	2	1989	prominent Polymer pump - E0212N	$425.00	
16	1	1989	Anderson file cabinet 4 draw	$100.00	
17	1	1989	Tiffany typewriter table	$50.00	
18	1	1989	IBM electric typewriter - wheelwriter 3	$350.00	

LABORATORY - 120 MILL STREET

ITEM NO.	QUANTITY	YEAR ACQUIRED	BRAND NAME/MODEL	COST NEW	CALENDAR YEAR TOTALS
1	1	2002	Hach turbidity meter 2100P	$900.00	$900.00
2	1	2000	Hach EC30 PH meter	$900.00	
3	1	2000	turbidimeter Hach 2100N	$1,500.00	$2,400.00
4	1	1999	pH/ION meter Jenway 3040	$1,000.00	$1,000.00
5	1	1998	Curvcraft desk chair	$300.00	$300.00
6	1	1997	Hach spectophtometer DR/4000U	$6,233.00	
7	1	1995	Phipps & Bird six unit stirrer 7790-400	$995.00	
8	1	1994	O'Sullivan office desk and hutch	$205.00	
9	3	1994	DJPSX-6 chairs	$105.00	
10	1	1992	Swift Ultralite microscope	$1,246.00	
11	1	1992	YSI disolved oxygen meter 50B	$988.00	
12	1	1992	Labline L-C mechanical convection oven 3516M	$588.00	
13	1	1992	Labline gravity convection oven 3513	$428.00	
14	1	1992	Labline refrigerator with freezer	$1,200.00	
15	1	1992	Labline refrigerator	$895.00	
16	1	1992	Thermolyne muffle furnace 1300	$495.00	
17	1	1992	Boekel drying oven 107800	$398.00	
18	1	1992	Pharmetics autoclave sterilizer	$22,198.00	
19	1	1992	Labconco steamscrubber glassware washer	$5,895.00	
20	1	1992	Oxford auto pipettor 5369	$929.00	
21	1	1992	Quebec colony counter 3325	$486.00	
22	4	1992	Thermolyne cimarec 3 hot plates	$792.00	
23	1	1991	Precision 30M incubator	$5,245.00	
24	1	1991	Lab-line 3184 water bath, coliform	$1,495.00	
25	1	1991	AND EK 1200A electronic balance	$595.00	
26	1	1986	Sartorious analitical balance 1601 A MP8-1	$1,458.00	
27	1	1985	Pelton & Crane magnagave MC autoclave sterilizer	$8,246.00	
28	1	1975	Millipore UV sterilizer XX63700 00	$895.00	$62,010.00

OFFICE EQUIPMENT & MISCELLANEOUS EQUIPMENT THAT YOU OWN

CALENDAR YEAR PURCHASED	COST NEW	DEPRECIATION RATE	DEPRECIATED VALUE
2002	$0.00	90.00%	$0.00
2001	$1,650.00	80.00%	$1,320.00
2000	$0.00	70.00%	$0.00
1999	$998.00	60.00%	$598.80
1998-PRIOR	$4,049.00	50.00%	$2,024.50
TOTALS	$6,697.00		$3,943.30

WATER TREATMENT PLANT - 120 MILL STREET

ITEM NO.	QUANTITY	YEAR ACQUIRED	BRAND NAME/MODEL	TOTAL ACQUISITION COST	CALENDAR YEAR TOTALS
1	2	2001	printer - Hewlett Packard 932C	$450.00	
2	1	2001	personal computer - Gateway Pentium 4	$1,200.00	$1,650.00
3	1	1999	fax/modem Brother 770	$499.00	
4	1	1999	software program Webbase 121175	$499.00	$998.00
5	1	1998	personal computer - IBM 300GL	$1,100.00	
6	1	1998	personal computer - Gateway GC300	$1,749.00	
7	1	1997	software program Webbase 149189	$400.00	
8	1	1995	personal computer - American Megatrend	$800.00	$4,049.00

LAW OFFICES OF MARK L. SMITH
Mark L. Smith Lynn Bouvier Kapiskas
176 Eddie Dowling Highway
North Smithfield, Rhode Island 02896
(401) 769-4120 FAX (401) 765-6930
E-Mail lawmls@aol.com

December 11, 2002

Joseph A. Keough, Jr., Esquire
Keough & Sweeney, LTD.
100 Armistice Boulevard
Pawtucket, Rhode Island 02860

Re: Pawtucket Water Supply Board

Dear Mr. Keough:

Please be advised that I represent Michael O'Leary and the Town of Cumberland with respect to the Tax Appeal of the Pawtucket Water Supply Board.

In response to your requests, dated November 25, 2002 and June 6, 2002, I incorporate the correspondence of Thomas E. Hefner, Esquire, the Town Solicitor, dated July 2, 2002.

The tangible personal property was examined by an on sight inspection by Michael O'Leary, the Tax Assessor. That inspection suggested thirty-three (33) miles of piping plus the appropriate features for the water distribution including, but not limited to, pumps, irrigation system, purification instrumentation, ponds, and other aspects of the water distribution system.

DAM(S)

If you have any additional questions concerning this, please contact me at your convenience.

Sincerely,

Mark L. Smith

MLS/mac
Enclosure
Cc: Michael W. O'Leary

FILENAME \p C:\work\Wp\PARAGON\Melissa's Folder\Cumberland, Town of\Letter\Re Pawtucket Water Supply Board.doc

NOTICE SENT TO COUNSEL - 14 DAYS IN ADVANCE

KEOUGH & SWEENEY, LTD.
ATTORNEYS AND COUNSELORS AT LAW
100 ARMISTICE BOULEVARD
PAWTUCKET, RHODE ISLAND 02860
TELEPHONE
(401) 724-3600
FACSIMILE
(401) 724-9909
www.keoughsweeney.com

JOSEPH A. KEOUGH JR.*
JEROME V. SWEENEY III*
*ADMITTED TO PRACTICE IN RHODE ISLAND AND MASSACHUSETTS

BOSTON OFFICE:
171 MILK STREET
SUITE 30
BOSTON, MA 02109
TEL (617) 574-0054
FAX (617) 451-1914

November 14, 2002

VIA FACSIMILE AND
FIRST-CLASS MAIL
(401) 727-0771

Thomas E. Hefner, Esq.
Town Solicitor
Town of Cumberland
P.O. Box 7
Cumberland, RI 02864

RE: Pawtucket Water Supply Board, et al - Tax Appeal

Dear Tom:

I am writing in follow up to our phone conversation this morning. As I informed you, I received a Board of Assessor's hearing notice scheduling a hearing on the Pawtucket Public Buildings Authority's and Pawtucket Water Supply Board's real estate in Cumberland. However, this hearing is scheduled for November 21, 2002, and I did not receive the notice until yesterday, November 13, 2002. The Board of Assessor's hearing notice indicates that any additional information regarding this appeal must be submitted to the Assessor's Office one week prior to the hearing date. As today is November 14, 2002, any additional information would have to be submitted today. I have contacted William Coyle and he is not in today. As such, it would be impossible to comply with this hearing notice. Additionally, I am scheduled to begin a trial in front of Judge Gibney on November 20, 2002. For these reasons, I am requesting a new hearing date. Furthermore, I would welcome the opportunity to set up a meeting with you and I and Mr. Coyle and Mr. O'Leary. It may be that some of the outstanding issues, especially with regard to the real estate, can be resolved.

I look forward to hearing from you.

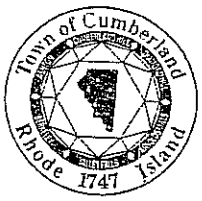
Sincerely,

Joseph A. Keough, Jr.

JAK:JGF

Cath.
Gene to
Mike O'Leary

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org



(401) 728-240
Sandra St. Laurent x-1
Shirley Pemberton x-1
Fax (401) 475-185

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

MEMO

To: PWSB/Pawtucket Building Authority c/o Joseph A. Keough, Jr.

From: Michael W. O'Leary – Assessor

Re: Board Requests

Date: Thursday, September 26, 2002

This office acknowledges your appeal of the 2002 Assessment to the Town of Cumberland Board of Assessor's. On September 19, 2002 under statute this Office discussed the overall scheduling of the hearings with the members of the Board. During the scheduling process the Board of Assessors has indicated that it would be most helpful if you were able to provide the following at least forty-eight hours before you're scheduled hearing:

A recent appraisal of the real and or personal property if one is available. — THEY HAD 1997 AP
FOR CENTRAL FALLS

Any sales data including closing statements for property sold within the last five years.

Copies of any IRS filings for the last three years including information on assets and depreciation schedules for all real and personal property.

Providing this information in a timely fashion will assist the Board of Assessor's in arriving at their decision.

Sincerely,

Michael W. O'Leary

Michael W. O'Leary
Tax Assessor

cc: Solicitors Tom Hefner and Richard Kirby

SOLICITOR'S OFFICE

P.O. BOX 7
CUMBERLAND, RHODE ISLAND 02864-0007

July 2, 2002

Joseph A. Keough, Jr., Esquire
Keough & Sweeney, Ltd.
100 Armistice Boulevard
Pawtucket, RI 02860

re: Pawtucket Water Supply Board.

Dear Mr. Keough:

Your letters of June 6 and June 26, 2002 have been referred to me for review.

My research into the present tax bills for 2002 reveals that there has been no tangible property return filed with the Town since 1998. As you know, this return is required by G.L. 44-5-15 and should be filed by January 31st of each year for tangibles of record on the preceding December 31st. Mr. O'Leary has previously requested such a return for 2001 and advised you that he may consider waiving the late filing for the present tax bill.

At this time, let me respond point by point to your June 6, 2002 letter.

The method used by the Town in appraising vacant land is the market value approach.

The Town does not keep in the ordinary course of its business any neighborhood breakdown of valuation increases in Cumberland. As such, the Town is under no duty to provide such a breakdown which would be time consuming and costly.

Similarly, the Town does not keep a list of average percentage increases for real and tangible property values.

As to your request #4, the list of all ratable property is available for public viewing and is located directly outside the assessor's office in town hall. If you need a copy, I will advise you what the cost will be.

The Town was required to make actual on site inspections of Pawtucket's property in view of the fact that no tangible return was filed. In addition to the on site field review, the assessor interviewed Pawtucket personnel. This information will be made available during the appeal process. The last date for the filing of an appeal is August 31st.

The method used for appraising tangibles was replacement cost new less depreciation based on the age of each tangible.

Finally, the value placed on Pawtucket's tangibles was the result of the assessor's actual inspection of Pawtucket's property. This may have been the first on site inspection in many years. This, plus Pawtucket's failure to file its tangible return for the past four (4) years, accounts for the substantial increase.

I have also determined that all utilities in the Town of Cumberland have been reviewed in similar fashion. Your client has not been singled out or treated any differently than other taxpayers. Upon Pawtucket's filing of its tangible property tax return, I will personally compare it to the assessor's records to see if I can locate any major discrepancy.

Please forward all further correspondence to the undersigned. Hopefully, we can resolve this matter amicably.

Very truly yours,

Thomas E. Hefner,
Town Solicitor

TH:rsb

cc: Michael O'Leary, Tax Collector

tax: pawtucket water tax

KEOUGH & SWEENEY, LTD.
ATTORNEYS AND COUNSELORS AT LAW
100 ARMISTICE BOULEVARD
PAWTUCKET, RHODE ISLAND 02860
TELEPHONE
(401) 724-3600
FACSIMILE
(401) 724-9909
www.keoughsweeney.com

JOSEPH A. KEOUGH JR.*
JEROME V. SWEENEY III*
*ADMITTED TO PRACTICE IN RHODE ISLAND AND MASSACHUSETTS

BOSTON OFFICE:
171 MILK STREET
SUITE 30
BOSTON, MA 02109
TEL. (617) 574-0054
FAX (617) 451-1914

June 6, 2002

Mr. Michael O'Leary
Tax Assessor
Town of Cumberland
45 Broad Street
Cumberland, RI 02864

RE: Pawtucket Water Supply Board

Dear Mr. O'Leary:

Please be advised that I am counsel to the Pawtucket Water Supply Board. It has come to my attention that my client recently received its tax bills for the year 2002. In reviewing these bills, it is clear that the Pawtucket Water Supply Board's real and tangible property valuations have increased dramatically. As such, I am hereby requesting the following information regarding these tax bills:

1. I would like to know the methods used in appraising the Pawtucket Water Supply Board's real property in 2001 and 2002, and whether these methodologies were applied to all parcels of real property within the Town of Cumberland.

2. Please provide me with a neighborhood breakdown of valuation increases throughout the Town of Cumberland.

3. Please identify the average percentage increase for real and tangible property between 2001 and 2002 in the Town of Cumberland excluding the Pawtucket Water Supply Board property.

4. Please provide me with a list of ratable property pursuant to R.I.G.L. §44-5-20.

5. I would like a detailed list of the Pawtucket Water Supply Board's tangible property which was taxed by the Town of Cumberland for the years 2001 and 2002.

KEOUGH & SWEENEY, LTD.
ATTORNEYS AND COUNSELORS AT LAW
100 ARMISTICE BOULEVARD
PAWTUCKET, RHODE ISLAND 02860
TELEPHONE
(401) 724-3600
FACSIMILE
(401) 724-9909
www.keoughsweeney.com

JOSEPH A. KEOUGH JR.*
JEROME V. SWEENEY III*
*ADMITTED TO PRACTICE IN RHODE ISLAND AND MASSACHUSETTS

BOSTON OFFICE:
171 MILK STREET
SUITE 30
BOSTON, MA 02109
TEL. (617) 574-0054
FAX (617) 451-1914

June 26, 2002

Mr. Michael O'Leary
Tax Assessor
Town of Cumberland
45 Broad Street
Cumberland, RI 02864

RE: Pawtucket Water Supply Board

Dear Mr. O'Leary:

I am in receipt of your letter dated June 12, 2002. As you know, I wrote to you on June 6, 2002, regarding my client's tax bills for the year 2002. In that correspondence, I requested several items of information regarding these new tax bills. Unfortunately, your letter of June 12, 2002, did not contain this information. To that end, I would once again ask that you please provide me with the information previously requested.

Thank you for your attention to this matter.

Sincerely,

Joseph A. Keough, Jr.

JAK:JGF

cc: Ms. Pamela Marchand
Chief Engineer
Pawtucket Water Supply Board

6. I would ask that you provide me with the methods used in appraising the Pawtucket Water Supply Board's tangible property for the years 2001 and 2002, and whether these methodologies were applied to all items of tangible property within the Town of Cumberland.

7. As you know, the Water Supply Board's tangible property was valued at $8,500,000.00 in 2001 and $20,000,000.00 in the year 2002. Please provide me with an explanation of the difference in the Pawtucket Water Supply Board's tangible property valuations between 2001 and 2002.

As you know, the Pawtucket Water Supply Board tax bill for 2002 is $683,043.65. This is an increase of $227,694.76 from the year 2001. Obviously, the Pawtucket Water Supply Board will have to seek increased rates from the Rhode Island Public Utilities Commission to pay these taxes. These increased rates will be paid by all of the PWSB's customers, including those located in Cumberland. To that end, I would like to discuss this matter with you after receiving the above-requested information.

Presently, the Pawtucket Water Supply Board is considering several options with respect to this dramatic tax increase. The most obvious of these options is an appeal through the Tax Assessor, Tax Board of Review and Superior Court pursuant to R.I.G.L. §44-5-1 et. seq. Furthermore, the Pawtucket Water Supply Board may seek other options, including, but not limited to, selling certain parcels of open land and introducing legislation seeking tax exemptions similar to the Providence Water Supply Board bill submitted in February, 2002. However, I would like to discuss these issues with you before embarking on any of these courses of action.

Thank you for your attention to these matters. I look forward to hearing from you.

Sincerely,

Joseph A. Keough, Jr.

JAK:JGF

cc: Ms. Pamela Marchand

Annual Tangible Property Declaration

The Law is Mandatory - A Return Must Be Filed (RI Law Section 44-5-15, as amended)
And Mail To: Assessor, Town Hall, Cumberland RI 02864

Statement of Valuation as of 12/31/97

ASSESSOR'S OFFICE
RECEIVED
1/26/98
DATE

City of Pawtucket
c/o Water Supply Board
85 Branch Street
Pawtucket, RI 02860

← This Name and Mailing Address Will Be Used For Tax Bill. Please Change If Incorrect

For Your Convenience, we have supplied you with this form for the declaration of taxable property located in Rhode Island According to The General Laws Of Rhode Island, taxable property **must** be declared to the Assessor between December 31 1997 and January 31, 1998. If a taxpayer is unable to make such declaration within the prescribed time, he may submit writte notice, prior to January 31, of intention to submit declaration my March 15th. **Failure to file a true and full account, withi the prescribed time, eliminates the right to appeal.** No amended returns will be accepted after March 15th.

Thank you for your cooperation. If we can be of assistance in preparing your report, feel free to come to our office at the Town Hall.

STATE LAW REQUIRES THE FILING OF THIS DECLARATION. FAILURE TO DO SO MAY RESULT IN AN INCREASED ASSESSMENT.

I Thomas F. Doucette,
Acting Chief Engineer
(Name and Title) am responsible for the information contained within this form

My Residence Address is:
12 Cobb Lane
Foxborough, MA 02035
My Daytime Phone No. is 729-5001

Give a Description of Your Business Operation
public water supplier

SIC#

☐ Mfg. ☒ Wholesale ☐ Retail ☐ Other

Number of employees as of December 31, 1996: fifteen

Square Feet Occupied: 25,400

Ownership: ☐ Corporation ☐ Co-Partnership ☐ Individual

Corporation/ Partners/ Indivudual NAME(S):

Business Name/ DBA: Pawtucket Water Supply Board

Business Address: 85 Branch Street
Pawtucket, RI 02860

Mailing Address: same as above
(if different from above)

$7,534,277

SECTION 1 TANGIBLE PERSONAL PROPERTY

List by year total acquisition cost for all furniture, fixtures, equipment, signs and **unregistered vehicles** owned by you that are used in conducting the operations of any retail, wholesale, service, contracting, professional or any other type of business.

Manufacturers should only report all furniture, fixtures and equipment NOT used directly in the actual manufacturing process.

IMPORTANT - Be sure to declare all acquisitions still in use - even though fully depreciated on your books.

LIST ALL LEASED/RENTED EQUIPMENT IN SECTION 7

Be sure to list all computer equipment separately in Section 3.

Calendar Year Purchased	Acquired New or used	Acquisition Cost	Depreciation Rate	Depreciated Value	Assessor's Use Only
1997	new	$24,445.	(x) 95%	$23,223	
1996	new	0	(x) 85%	0	
1995	new	995.	(x) 75%	746	
1994	new	1,225.	(x) 65%	796	
1993	new	75.	(x) 55%	41	
1992	new	41,670.	(x) 45%	18,752	
1991	new	7,335.	(x) 35%	2,567	
1990 and prior	new	339,336.	(x) 25%	84,834	
TOTAL		$415,081.		$130,959	

SECTION 2 COMPUTER EQUIPMENT *ONLY*

Please list computer equipment separately in this section by year, make, model with description of each piece owned. **Manufacturers** include computer equipment NOT used directly in the actual manufacturing process. Attach a seperate sheet if necessary.

Calendar Year Purchased	Make Model	Acquired New or used	Acquisition Cost	Depreciation Rate	Depreciated Value	Assessor's Use Only
1997	see attach.	new	976	(x) 90%	878	
1996		new	2,454	(x) 80%	1,963	
1995		new	0	(x) 70%	0	
1994		new	0	(x) 50%	0	
1993 and prior		new	3,746	(x) 40%	1,498	
TOTAL			7,176		4,340	

SECTION 3 1997 DELETIONS (Please note below if a seperate listing is attached)

Description Of Asset	Year Of Acquisition	Original Cost	Date Removed
Spectrophtometer	1984	$2145.	1997

SECTION 4 — IMPROVEMENTS ON LEASED LAND

Buildings and Improvements on Leased Land

Property Address: N/A PLAT _____ LOT _____

Property Used For: _____ CLAIMED FULL VALUE

Name of Landowner: _____ $_____

Is Lease Recorded? Yes____ No____ Dates Of Lease From _____ To _____

SECTION 5 — INVENTORY/STOCK IN TRADE/SUPPLIES

This Section to be Used by ALL BUSINESSES INCLUDING MANUFACTURERS
Also include any consigned inventories.

Jan N/A	Apr _____	Jul _____	Oct _____
Feb _____	May _____	Aug _____	Nov _____
Mar _____	June _____	Sep _____	Dec _____

Your Average Monthly Inventory at Cost _____ Method Used _____

Floor Planned Goods are to be included in the above value.

SECTION 6 — INVENTORIES OF A MANUFACTURER WHICH YOU CLAIM EXEMPT (RI LAW 44-5-38, as amended)

Type of Inventory	City and State of Manufacture	Claimed Full Value 100%
Raw Materials		
Goods In Progress	N/A	
Finished Goods		
	Total	

SECTION 7 — LEASED/RENTED/CONSIGNED TANGIBLE PERSONAL PROPERTY

(As Described in Section 2)

This Section to be Used by All Businesses INCLUDING MANUFACTURERS

Owner/Address	Item Description	Cost New	Lease Term	Monthly Rent	Lease #
N/A					

SECTION 8 — TANGIBLE PROPERTY LEASED OR RENTED TO OTHERS

If on the date of assessment you owned any items of tangible personal property (except registered motor vehicles) which you lease or rent to others, **attach a separate schedule to this form,** and report all of the following information for each item:

Lessee's name and location of property, description of property, your acquisition cost, date of acquisition or installation, date of manufacture, monthly rental or lease income, and dates of lease.

SECTION 9 — LEASEHOLD IMPROVEMENTS

Fixtures, etc., owned by you and attached to or used in rea estate owned by others and not reported elsewhere.

Leasehold improvements include, but are not limited to, wall panelling, carpeting, tile on wall and floors, ceilings, electrical and plumbing fixtures, partitions, building additions and the like.

Calendar Year Purchased	Acquisition Cost	Depreciation Rate	Claimed Full Value	Assessor's Use Only
1996	N/A			
1995				
1994				
1993				
1992				
1991				
1990				
1989 and prior				
TOTAL				

SECTION 10 — Sign Your Return and Notarize

I do hereby certify and declare that, to the best of my knowledge and belief, the foregoing is a true and complete list of all real estate and persona property owned by said Corporation, Co-Partnership or Individual in or ratable in said Town on the said thirty-first day of December at 12 o'cloc midnight, Eastern Standard Time; that the value placed against each item thereof is the full and fair cash value thereof at said time.

Please Sign Here

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true correct, and complete. Declaration of preparer (other than officer) is based on all information of which preparer has any knowledge

Signature: Thomas F. Doucette, P. E. Date: 1/21/98 Title: Acting Chief Engineer

On the 21st of January, 1998, Thomas F. Doucette personally appeared before me and made oath that the foregoing account, by him/her signed and exhibited, contains to the best of his/her knowledge and belief, a true and full account and valuation of all the ratable estate owned or possessed by said corporation, co-partnership, or individual

Jean L. Kay, Notary Public — Jan. 21, 1998

Signature of Notary Public and Date

My Commission Expires 8/03/2001

Annual Tangible Property Declaration

The Law is Mandatory - A Return Must Be Filed (RI Law Section 44-5-15, as amended)
And Mail To: Assessor, Town Hall, Cumberland RI 02864

Statement of Valuation as of 12/31/97

ASSESSOR'S OFFICE
RECEIVED
11/26/98
DATE

City of Pawtucket
c/o Water Supply Board
85 Branch Street
Pawtucket, RI 02860

← This Name and Mailing Address Will Be Used For Tax Bill. Please Change If Incorrect

For Your Convenience, we have supplied you with this form for the declaration of taxable property located in Rhode Island According to The General Laws Of Rhode Island. taxable property **must** be declared to the Assessor between December 31 1997 and January 31. 1998. If a taxpayer is unable to make such declaration within the prescribed time, he may submit written notice. prior to January 31. of intention to submit declaration my March 15th. **Failure to file a true and full account, within the prescribed time, eliminates the right to appeal.** No amended returns will be accepted after March 15th.

Thank you for your cooperation. If we can be of assistance in preparing your report, feel free to come to our office at the Town Hall.

STATE LAW REQUIRES THE FILING OF THIS DECLARATION. FAILURE TO DO SO MAY RESULT IN AN INCREASED ASSESSMENT.

I Thomas F. Doucette,
Acting Chief Engineer
(Name and Title) am responsible for the information contained within this form

My Residence Address is:
12 Cobb Lane
Foxborough, MA 02035
My Daytime Phone No. is
729-5001

Give a Description of Your Business Operation
public water supplier

SIC#

☐ Mfg. ☒ Wholesale ☐ Retail ☐ Other

Number of employees as of December 31, 1996 fifteen Square Feet Occupied 25,400

Ownership: ☐ Corporation ☐ Co-Partnership ☐ Individual

Corporation/ Partners/ Indivudual NAME(S):

Business Name/ DBA: Pawtucket Water Supply Board

Business Address: 85 Branch Street
Pawtucket, RI 02860

Mailing Address: same as above
(if different from above)

SECTION 9 — LEASEHOLD IMPROVEMENTS

Fixtures, etc., owned by you and attached to or used in real estate owned by others and not reported elsewhere.

Leasehold improvements include, but are not limited to, wall panelling, carpeting, tile on wall and floors, ceilings, electrical and plumbing fixtures, partitions, building additions and the like.

Calendar Year Purchased	Acquisition Cost	Depreciation Rate	Claimed Full Value	Assessor's Use Only
1996	N/A			
1995				
1994				
1993				
1992				
1991				
1990				
1989 and prior				
TOTAL				

SECTION 10 — Sign Your Return and Notarize

I do hereby certify and declare that, to the best of my knowledge and belief, the foregoing is a true and complete list of all real estate and persona property owned by said Corporation, Co-Partnership or Individual in or ratable in said Town on the said thirty-first day of December at 12 o'cloc midnight, Eastern Standard Time; that the value placed against each item thereof is the full and fair cash value thereof at said time.

Please Sign Here

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true correct, and complete. Declaration of preparer (other than officer) is based on all information of which preparer has any knowledge

Signature: Thomas F. Doucette, P. E. Date: 1/21/98 Title: Acting Chief Engineer

On the 21st of January, 1998, Thomas F. Doucette personally appeared before me and made oath that the foregoing account, by him/her signed and exhibited, contains to the best of his/her knowledge and belief, a true and full account and valuation of all the ratable estate owned or possessed by said corporation, co-partnership, or individual.

Jean L. Kay, Notary Public — Jan. 21, 1998

Signature of Notary Public and Date

My Commission Expires 8/03/2001

TEL. 728-2400

Town of Cumberland

OFFICE OF TOWN ASSESSOR
45 BROAD STREET
CUMBERLAND, RHODE ISLAND 02864

TOWN ASSESSOR
NANCY B. QUINN

JAN 17 ~~1995~~ 1996

Acct/6104750

Seq 1162

284050

+ 8124340

8,408,390

RETURN TO ASSESSOR OF TAXES

TANGIBLE PROPERTY ACCOUNT
(return for year ending 1995)

(R.I.G.L. 44-5-15)

Rhode Island General Laws Require a declaration (return) be given to the Assessor between December 31, 1995 and January 31, 1996. An extension may be granted to March 15, 1996 if a written request for same is received before January 31, 1996. No extension beyond March 15th can be granted.

This information must be filed annually. Failure to file a true and full account within the prescribed time, eliminates the right of Appeal.

PLEASE TYPE OR PRINT

Name of business: Pawtucket Water Supply Board Business phone number: 729-5004

Business trade name if applicable: N/A Type of business: water supply

If Corporation, list president's name & address: N/A

Location of Business (street address): 85 Branch Street, Pawtucket, RI 02860

Mailing address (if other than above): same as above

The following is an example of tangible property: Business machines, computer software, furniture, computers, signs, tools, cafeteria or restaurant equipment etc., also non-registered construction equipment like road graders, backhoes, bulldozers and bobcats. Utility companies' list includes, but not limited to, piping, wiring and associated equipment, satellite antennas, etc. Also, pumps, lifts, air equipment, forestry equipment, hydraulic cranes etc. are just **some** of the many examples of tangible property.

The following is an example of average (wholesale cost) inventory for the year ending December 31, 1995: food, gasoline, electronics, auto parts, plastics, new and used vehicles, chemicals, paper, wood or metals. These are also known as: supplies, goods, wares and merchandise stock in trade.

This form is provided as a courtesy. It may be used along with any necessary attachments or a different format may be used provided the necessary information is provided. Accountant services are recommended in the preparation of annual returns (i.e. account), so as to provide taxpayers their appropriate exemptions and depreciation.

Please fill out both sides of this form, and indicate not applicable, if appropriate.

(Over)

TOWN OF CUMBERLAND - ASSESSOR'S OFFICE
TANGIBLE PROPERTY ACCOUNT

FURNITURE AND FIXTURES - MACHINERY AND EQUIPMENT

CALENDAR YEAR PURCHASED	AQUISITION COST	REMAINING LIFE	REMAINING LIFE VALUE
1995	$995	100 %	$995
1994	$1,225	90 %	$1,103
1993	$75	80 %	$60
1992	$41,670	70 %	$29,169
1991	$7,335	60 %	$4,401
1990	$3,395	50 %	$1,698
1989	$5,525	40 %	$2,210
1988-PRIOR	$332,561	30 %	$99,768
TOTALS	$392,781		$139,403

PURIFICATION PLANT - 120 MILL STREET

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
1	2	1994	Swivel Chairs	$172	
2	2	1994	Wood Chairs	$116	$288
3	1	1993	Typist Chair	$75	$75
4	1	1992	Ph Meter	$1,100	
5	1	1992	Copier	$800	$1,900
6	1	1990	Air Tank and Mask	$2,500	$2,500
7	2	1989	Chlorine Analyzers	$4,600	
8	1	1989	Polymer Pump	$425	
9	1	1989	File Cabinet	$100	
10	1	1989	Typewriter Table	$50	
11	1	1989	Electric Typewriter	$350	$5,525
12	2	1988	Turbidimeters	$3,200	
13	3	1986	Fiberglass Alum Tanks	$8,600	
14	1	1985	Swivel Chair	$35	
15	2	1983	Flouride Tanks	$5,000	

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
16	1	1980	Calculator	$139	
17	2	1980	Emergency Air Masks	$1,125	
18	1	1980	Emergency Standby Pump for Chlorinators	$1,250	
19	1	1978	Diesel Generator 285KW	$114,000	
20	7	1975	Chemical Feed Pumps	$16,450	
21	3	1975	Chlorinators	$22,000	
22	2	1975	Caustic Tanks 5,000 Gallon Steel	$5,500	
23	2	1975	Rapid Mixers	$8,000	
24	2	1975	Chlorine Scales	$1,950	
25	2	1975	Flocculators	$63,000	
26	1	1975	Carbon Machine	$4,700	
27	2	1975	Calgon Tanks and Pumps	$5,220	
28	1	1975	Control Panel & Pacing Equipment	$6,500	
29	1	1975	File Cabinet	$100	
30	1	1969	Desk	$100	
31	1	1969	Typist Chair	$50	
32	2	1965	Desks	$80	
33	1	1964	File Cabinet	$50	
34	1	1955	Desk	$20	
35	2	1950	Book Cases	$10	
36	3	1950	Filing Cabinets	$75	
37	3	1945	Filing Cabinets	$60	
38	1	1945	Electric Fork Lift	$3,500	
39	1	1939	Control Board	$7,700	
40	2	1939	Wood Chairs	$10	

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
41	3	1939	10 MGD Influent Pumps with 100HP Motors	$24,000	
42	2	1939	2 MGD Washwater Pumps with 50HP Motors	$4,400	
					$306,824

PUMPING STATION #3 - RALCO WAY

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
1	1	1928	12 MGD Pump with 800HP Motor	$6,800	
2	1	1917	5 MGD Pump with 325HP motor	$2,700	
					$9,500

WATER QUALITY LABORATORY - 120 MILL STREET

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
1	1	1995	Six Unit Stirrer	$995	$995
2	3	1994	Desk Chair	$297	
3	1	1994	Office Desk and Hutch	$205	
4	1	1994	Computer Desk and Hutch	$330	
5	3	1994	Chairs	$105	$937
6	1	1992	pH / ION Meter	$2,146	
7	1	1992	Microscope	$1,246	
8	1	1992	Turbidimeter	$1,086	
9	1	1992	Disolved Oxygen Meter	$988	
10	1	1992	Mechanical Convection Ov	$588	
11	1	1992	Gravity Convection Oven	$428	
12	1	1992	Refrigerator with Freezer	$1,200	
13	1	1992	Refrigerator	$895	
14	1	1992	Muffle Furnace	$495	

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
15	1	1992	Drying Oven	$398	
16	1	1992	Autoclave Sterilizer	$22,198	
17	1	1992	Glassware Washer	$5,895	
18	1	1992	Auto Pipettor	$929	
19	1	1992	Colony Counter	$486	
20	4	1992	Hot Plates	$792	$39,770
21	1	1991	Incubator	$5,245	
22	1	1991	Water Bath, Coliform	$1,495	
23	1	1991	Electronic Balance	$595	$7,335
24	1	1990	Turbidimeter	$895	$895
25	1	1988	pH / ION Meter	$1,940	
26	1	1986	Analitical Balance	$1,458	
27	1	1985	Autoclave Sterilizer	$8,246	
28	1	1984	Spectrophtometer	$2,145	
29	1	1982	Turbidimeter	$1,198	
30	1	1975	Turbidimeter	$1,250	
31	1	1975	UV Sterilizer	$895	$16,237

COMPUTER EQUIPMENT

CALENDAR YEAR PURCHASED	AQUISITION COST	REMAINING LIFE	REMAINING LIFE VALUE
1995	$0	100 %	$0
1994	$0	90 %	$0
1993	$0	80 %	$0
1992	$3,746	70 %	$2,622
1991	$0	60 %	$0
1990	$0	50 %	$0
1989	$0	40 %	$0
1988-PRIOR	$0	30 %	$0
TOTALS	$3,746		$2,622

WATER QUALITY LABORATORY - 120 MILL STREET

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
1	1	1992	Computer System	$1,749	
2	1	1992	Printer	$599	
3	1	1992	Fax / Modem	$499	
4	6	1992	Software Programs	$899	$3,746

PERSONAL PROPERTY LISTING BY ACCOUNT NUMBER DATE PRINTED - 01/31/96 REPORT SEGMENT : 1

ACCT NUM : 16-01047-50 BUS. NAME: PAWTUCKET, CITY OF MAIL ADDR: C/O WATER SUPPLY BOARD
85 BRANCH ST
STA. CODE: 10 LOCATION : 85 BRANCH ST PAWTUCKET RI 02860-1049

OWNER NAME: PAWTUCKET, CITY OF ZIP CODE : 02860-1049

ITEM NUM.	CLASS CODE	QUAN-TITY	DESCRIPTION	DESCRIP2	LOCA-TION	DATE OF	REPL. COST	DEPRE-CIATE	TOTAL VALUE	A M
000-0000	18	1	DAM PLAT 69 LOT 1			06/01/94	0.00	0	897000	
000-0000	18	1	DAM PLAT 70 LOT 2			06/01/94	0.00	0	1973400	1
000-0000	18	1	DAM PLAT 69 LOT 3			06/01/94	0.00	0	881400	
000-0000	18	1	DAM PLAT 71 LOT 1			06/01/94	0.00	0	807300	
000-0000	18	1	WTR TREATMENT BLDG PLAT 71 LOT 2			06/01/94	0.00	0	3565240	3
000-0000	18	1	EST EQUIPMENT			01/01/94	0.00	0	1630700	1

9755040
-1630700 est eq FY96 roll.
8124340
+284050
8,408,390.

TANGIBLE ACCT. FILE FOLDER
MISSING FOR PAWT. WATER SUPPLY/B

NEED ITEMIZED LIST LUKE BROUGHT
IN THIS YR. + WE GAVE A COPY to WATER DEPT
I'VE PUT A TOTAL ON THEIR TANGIBLE REPORT.
ADD IN THE FIG. ALLOTTED TO ALL THE DAMS
TO THIS FIG + THAT IS THE BILLABLE FIG.

Town of Cumberland

Town Hall
45 Broad Street
Cumberland, Rhode Island 02864
(401) 728-2400

Request form to the Assessment Board of Review

Date: August 3, 1995

Name: Pawtucket Water Supply Board

Address: 85 Branch Street, Pawtucket, RI 02860

Plat: _____ Lot: Tangible Property

Comment: 1994 valuation was $1,137,802. 1995 valuation increased to $9,755,040. Assessor's record shows only the word estimate with no listing of the tangible property. We have no way of putting a value on the tangible property until we know what it is.

PERSONAL PROPERTY LISTING BY ACCOUNT NUMBER — DATE PRINTED - 01/31/96 — REPORT SEGMENT : 1

ACCT NUM : 16-01047-50 BUS. NAME: PAWTUCKET, CITY OF

STA. CODE: 10 LOCATION : 85 BRANCH ST

MAIL ADDR: C/O WATER SUPPLY BOARD
85 BRANCH ST
PAWTUCKET RI 02860-1049

OWNER NAME: PAWTUCKET, CITY OF

ZIP CODE : 02860-1049

ITEM NUM.	CLASS CODE	QUAN-TITY	DESCRIPTION	DESCRIP2	LOCA-TION	DATE OF	REPL. COST	DEPRE-CIATE	TOTAL VALUE	AS ME
000-0000	18	1	DAM PLAT 69 LOT 1			06/01/94	0.00	0	897000	8
000-0000	18	1	DAM PLAT 70 LOT 2			06/01/94	0.00	0	1973400	19
000-0000	18	1	DAM PLAT 69 LOT 3			06/01/94	0.00	0	881400	8
000-0000	18	1	DAM PLAT 71 LOT 1			06/01/94	0.00	0	807300	8
000-0000	18	1	WTR TREATMENT BLDG PLAT 71 LOT 2			06/01/94	0.00	0	3565240	35
000-0000	18	1	EST EQUIPMENT			01/01/94	0.00	0	1630700	16

9

TAX BILL CORRECTION FORM

ABATEMENT

ACCOUNT NO.

DATE

PLAT & LOT NO

TAXES

CAR REG.# YEAR

REASON FOR PROBLEM

ABATEM

Spread Sheet has for Acct.# 16-01047-50 9,755,040 —

ADDITIONAL ASSESSMENT

ACCOUNT NO. 16104750

DATE 5-12-95

PLAT & LOT NO.

TAXES $54,259.20 YEAR 95

CAR REG.# TANGIBLE

REASON FOR PROBLEM Found 2 Liens, per Sabre Seq.#1162

9755040 — New Value $183,484.95

6875040 — Old Value 129,525.75

1995/3000620 $ 2880000 — X18.84 = $ 54,259.20

CLERK

ASSESSOR Nancy B. Fenton

DEP. ASSESSOR

ADDITIONAL ASSESSMENT

C

ADDITIONAL ASSESSMENT

NAME Pawt. City of

ADDRESS C/o Water Supply Board

85 Branch Ave.

TEL.# Pawt RI 02860

Change field card

Change Computer C[illegible]

Change CAMA

Bill Done

$ 13,564.80

13,564.80

13,564.80

13,564.80

#54259.20

OKAY BY W.W.W.

L.T

TAX LIST

1995 CUMBERLAND RI

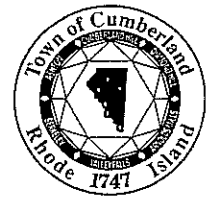
ASSESMENT DATE
Dec. 31, 1994

ACCOUNT NUMBER / DESCRIPTION	NAME AND ADDRESS	PLAT/LOT	ST CD	LAND VALUATION	BUILDING VALUATION	TOTAL REAL VALUATION	BK CD	TANGIBLE VALUATION	M/V VALUATION	SWR. VAL.	EXEMPT CREDIT	TAX
16104600	PAWTUCKET, CITY OF											
	C/O WATER SUPPLY BOAR											
	85 BRANCH ST											2038.49
	PAWTUCKET RI 02860-1049	47-15	10	108200		108200						
	1995/1011018 TINGLEY RD											
16104601	PAWTUCKET, CITY OF											
	C/O WATER SUPPLY BOARD											
	85 BRANCH ST											3035.12
	PAWTUCKET RI 02860-1049	47-23	10	161100		161100						
	1995/1011020 SUMNER BROWN RD											
16104710	PAWTUCKET, CITY OF											
	C/O WATER SUPPLY BOAR											
	85 BRANCH ST											
	PAWTUCKET RI 02860-1049	56-14	01	88500	89800	178300						3359.17
	1995/1011028	56-40	10	92200		92200						1737.05
	1995/1011031 RESERVOIR RD			180700	89800	270500						5096.22
	** ACCOUNT TOTALS **											
16104750	PAWTUCKET, CITY OF											
	C/O WATER SUPPLY BOARD											
	85 BRANCH ST							6875040				129525.75
	PAWTUCKET RI 02860-1049	1162	18					2880000				57259.20 additi...
FIXT & INV	1995/3000620 *FILED							9755040				183784.95
16105000	PAY, EDMOND F											
	PO BOX 7517											2106.31
	CUMBERLAND RI 02864-0896	58-19	02	35000	76800	111800			666			15.00
	1995/1011043 - STORE HILL R		16						2211			41.66
CHE 82 CIT	EP 108 1G1AX68 01-01 12-31 365		16								11250.00	211.95-
MER 86 MGR PAY	2MEBP95 01-01 12-31 365			35000	76800	111800			2877		11250.00	1951.02
EXEMPTIONS 57	** ACCOUNT TOTALS **											
16105510	PAY, MICHAEL E											
	24 MIDDLE ST											107.76
	CUMBERLAND RI 02864-4820		16						5720			
[illegible]	1G2NE14 01-01 12-31 365											

SECTION II

REAL PROPERTY v. TANGIBLE

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org



(401) 728-2400
Sandra St. Laurent x–13
Shirley Pemberton x–14
Fax (401) 475-1851

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

SURVEY OF TANGIBLE TAXING PRACTICES

A PHONE SURVEY COMPLETED ON 12/3/03 BY MIKE O'LEARY, ASSESSOR FOR THE TOWN OF CUMBERLAND, CONTACTED THIRTY EIGHT OF THIRTY NINE MUNICIPALITIES (NEW SHOREHAM HAS A BOA NOT AN ASSESSOR) IN RHODE ISLAND:

THE QUESTIONS ASKED EACH ASSESSOR'S WERE:
ARE YOUR WATER DISTRIBUTION PIPES EXEMPT OR MUNICIPALLY OWNED?
IF NOT EXEMPT ARE THEY TAXED AS TANGIBLE PROPERTY?

38 ASSESSORS' WERE CONTACTED
22 HAD EXEMPT/MUNICIPAL WATER SYSTEMS
9 HAD NON EXEMPT WATER DISTRIBUTION SYSTEMS
ALL 9 TAXED THESE SYSTEMS AS TANGIBLE PROPERTY

ALL 27 MUNICIPALITIES THAT HAVE NATURAL GAS TAX THE DISTRIBUTION SYSTEMS AND PIPELINES AS TANGIBLE.

THE 9 ARE:

CRANSTON
CUMBERLAND
E. PROVIDENCE
GLOCESTER
NARRAGANSETT
N. SMITHFIELD
PORTSMOUTH
SCITUATE
SOUTH KINGSTOWN

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org

(401) 728-2400
Sandra St. Laurent x–13
Shirley Pemberton x–14
Fax (401) 475-1851

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

SURVEY OF TANGIBLE TAXING PRACTICES

A PHONE SURVEY CONDUCTED ON 9/8/03 BY MIKE O'LEARY, ASSESSOR FOR CUMBERLAND, CONTACTED TWENTY FIVE MUNICIPALITIES IN RHODE ISLAND:

THE QUESTIONS ASKED EACH ASSESSOR'S WERE:
ARE YOUR WATER DISTRIBUTION PIPES EXEMPT OR MUNICIPALLY OWNED?

IF NOT ARE THEY TAXED AS TANGIBLE PROPERTY?

25 ASSESSORS' WERE CONTACTED

17 HAD EXEMPT/MUNICIPAL WATER SYSTEMS

7 HAD NON EXEMPT WATER DISTRIBUTION SYSTEMS

ALL 7 TAXED THESE SYSTEMS AS TANGIBLE PROPERTY

ALL 25 TAXED GAS DISTRIBUTION SYSTEMS AND PIPELINES AS TANGIBLE.

THE 7 ARE:

CRANSTON
CUMBERLAND
E. PROVIDENCE
GLOCESTER
N. SMITHFIELD
PORTSMOUTH
SCITUATE

Cranston

ESTIMATED ASSESSMENT OF WESTERN WATER SYSTEM					
PERSONAL PROPERTY					
MAINS	TOTAL LENGTH	COST/LIN.FT.	COST	DEPRECIATION	VALUE
12"	95.15	$36.00	$3,425.40	70.00%	$1,027.62
20"	56.2	$63.00	$3,540.60	70.00%	$1,062.18
8" CLDIP	3090.55	$19.85	$61,347.42	70.00%	$18,404.23
8" DI	196066.25	$19.85	$3,891,915.06	70.00%	$1,167,574.52
12"DI	9615.32	$36.00	$346,151.52	70.00%	$103,845.46
16"DI	8235.89	$52.00	$428,266.28	70.00%	$128,479.88
20"DI	12488.31	$64.50	$805,496.00	70.00%	$241,648.80
24"DI	3134.08	$75.00	$235,056.00	70.00%	$70,516.80
8"TRANSIT	30326.86	$18.00	$545,883.48	70.00%	$163,765.04
16"TRANSIT	1508.34	$26.00	$39,216.84	70.00%	$11,765.05
			$6,360,298.60		$1,908,089.58
METER SIZE	TOTAL				
5/8"	1747	$79.00	$138,013.00	70.00%	$41,403.90
3/4"	472	$85.00	$40,120.00	70.00%	$12,036.00
1"	45	$120.00	$5,400.00	70.00%	$1,620.00
1.5"	54	$196.00	$10,584.00	70.00%	$3,175.20
2"	52	$260.00	$13,520.00	70.00%	$4,056.00
3"	3	$1,250.00	$3,750.00	70.00%	$1,125.00
4"	4	$1,665.00	$6,660.00	70.00%	$1,998.00
6"	2	$3,750.00	$7,500.00	70.00%	$2,250.00
8"	2	$5,000.00	$10,000.00	70.00%	$3,000.00
			$235,547.00		$70,664.10
VALVES(BY SIZE)					
6"	404	$420.00	$169,680.00	30.00%	$50,904.00
8"	453	$678.00	$307,134.00	30.00%	$92,140.20
12"	34	$1,157.00	$39,338.00	30.00%	$11,801.40
16"	6	$2,000.00	$12,000.00	30.00%	$3,600.00
16"(BUTTERFLY)	31	$3,775.00	$117,025.00	30.00%	$35,107.50
20"(BUTTERFLY)	22	$4,500.00	$99,000.00	30.00%	$29,700.00
24"(BUTTERFLY)	11	$5,350.00	$58,850.00	30.00%	$17,655.00
			$803,027.00		$240,908.10
HYDRANTS	383	$1,500.00	$574,500.00	30.00%	$172,350.00
TOTAL			$7,973,372.60		$2,392,011.78
REAL ESTATE	LAND	IMPROVEMENTS	TOTAL		
PLAT 33 LOT 66	$120,000	$2,250,000	$2,370,000.00		$2,370,000.00
PLAT 35 LOT 131	$10,000	$50,000	$60,000.00		$60,000.00
					$4,822,011.78

04/22/2003

ASSESSOR'S DIRECTORY

MUNICIPALITY	ASSESSOR	PHONE	
Barrington	Rebecca J. Lefebvre	247-1900	X 322
Bristol	Evelyn Spagnolo	253-7000	X 42
Burrillville	James R. Drew	568-4300	X126
Central Falls	Wendell W. Wilkie	727-7430	
Charlestown	Kenneth J. Swain	364-1233	
Coventry	Patricia Picard	822-9163	
Cranston	Carlo V. DelBonis	461-1000	X 3181
Cumberland	Michael O'Leary	728-2400	X 15
East Greenwich		886-8614	
East Providence	Alberto S. Erejo	435-7574	
Exeter	Steven D. Hazard	294-5734	
Foster	Anne L. Carlson	392-9202	
Glocester	Viviane L. Valentine	568-3329	
Hopkinton	John D. Majelka	377-7780	
Jamestown	Susan P. Brayman	423-7200	
Johnston	Anthony Harraka	553-8828	
Lincoln	David Robert	333-8448	
Little Compton	William N. Makepeace	635-4509	
Middletown	William H. Shorey	847-7300	
Narragansett	Judy A. Stanton	789-1044	
New Shoreham	John A. Desmarais	466-3217	
Newport	Allan Booth Jr.	846-9600	X 313
North Kingstown	Linda Cwiek	294-3331	
North Providence	Patricia Acquaviva-Aubin	232-0900	X 215
North Smithfield	Natalie Robitaille	767-2200	X 223
Pawtucket	David L. Quinn	728-0500	X 218
Portsmouth	David E. Dolce	683-1536	
Providence	Thomas P. Rossi	421-5900	
Richmond	Elizabeth Fournier	539-2130	
Scituate	Karen S. Beattie	647-2919	
Smithfield	Suzanne P. Kogut	233-1014	
South Kingstown	Jean Paul Bouchard	789-9331	
Tiverton	John M. Gancarski	625-6709	
Warren	Julie Coelho	245-7342	
Warwick	Eileen Johnson	738-2000	X 6271
West Greenwich	Charlene Randall	392-3800	X104
West Warwick	Raymond Beattie	822-9200	
Westerly	Charles E. Vacca	348-2541	
Woonsocket	Arthur E. Bouchard	767-9273	

Tax Assessor

From: SCITUATERI.ORG email [BeattieK@scituateri.org]
Sent: Monday, September 08, 2003 11:24 AM
To: Mike O'Leary (E-mail)
Subject: water lines

Mike:

Here's what we've got in Scituate:

at the purufication plant:
4,450 L/F acqueduct, 90", cost $1,557,500 - $350 L/F
10,400 L/F acqueduct, 78", cost $1,310,400 - $126 L/F

at the booster station:
1,660 L/F piping, 60", cost $664,000 - $400 L/F
2,760 L/F piping, 94", cost $966,000 - 350 L/F

These figures are from the 12/2000 revaluation, done by CRC (Neal Dupuis). I believe he used Marshall & Swift, but you could ask him to make sure. I know Carlo has a lot of water pipes through Cranston.

See you in Nashville! ~Karen

SECTION III

TECHNICAL

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org

(401) 728-2400
Sandra St. Laurent x–13
Shirley Pemberton x–14
Fax (401) 475-1851

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

CONSULTANT'S ESTIMATES

The following contractors did the estimations on the equipment:

Earth Tech – Paul DeLong

U.S. Filter – Richard Johnson

Water Systems Consulting Group – Wiley Archer

Neptune Meter – Joe Coulter

Ti Sales, Sudbury, Mass

Pro M Fluid Controls

AERATION SYSTEMS	$ 500,000
CLEARWELL	$1,000,000
SETTLING BASIN	$1,000,000
DAM ON MILL ST.	$1,000,000
PUMPS IN TOTAL	$ 800,000
LAB AND MISCELLANEOUS	$1,700,000
PIPELINE TO PAWTUCKET	$1,500,000
TOTAL ESTIMATES	**$7,500,000**
33.73 Miles of Distribution $661,530 per mile	**$22,313,408**
	$30,000,000 **Total Value**

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org

(401) 728-2400
Sandra St. Laurent x–13
Shirley Pemberton x–14
Fax (401) 475-1851

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

PWSB THE PLANT

PROCESSESS 15 MILLION GALS. PER MO. @ $.135 PER GAL.

PAWTUCKET WATER HAS THE SECOND LOWEST WATER RATE IN THE STATE

AIRATION BASIN HOLDS 23 MILLION GALLONS (40 X 50)

CLEARWELL HOLDS ½ MILLION GALS. – BUILT IN 1946 CONCRETE

SETTLEING BASIN HOLDS 17 MILLION GALS. – BUILT 1938 4" CONCRETE

TWO 210,000 12" **FLOCULATORS** & MIXING COAGULANT

DAM IS A BASCULE 3X160 FEET – FLOOD CONTROL

PWSB SPENT $50,000 ON LAB EQUIPMENT IN 1990

PLANT HAS TWO LARGE BELOW SURFACE PUMPS

PUMPING STATION HAS A 12 MIL. & 6 MIL. GAL. PUMPS

INCOME ESTIMATE:

15 MIL. GALS. X $.135 X 12 = $24,300,000 ANNUAL REVENUE

CONSULTANT ESTIMATES:
AERATION SYSTEM - $500,000
PUMPS IN TOTAL - $500,000
BOTH PONDS - $1,000,000
DAM TODAY - $1,000,000
PIPE TO PAWTUCK - $1,500,000
MISC SHEET ASSESS $3,000,000

TOTAL ESTIMATES - $7,500,000

PAWTUCKET WATER SYSTEM IN CUMBERLAND

INCOME APPROACH

PROJECTED FY 03 REVENUE - $12,404,002 (ENCLOSED)

EXPENSES - 50% - $ 6,202,210 (HIGH SIDE)

CAP RATE 10% - $62,020,010

COST APPROACH

MILES OF WATER MAINS AS REPORTED:

CENTRAL FALLS 4.46 MILES

CUMBERLAND 33.73 MILES

APPRAISAL FOR CENTRAL FALLS - $2,950,424 - VALUE PER MILE - $661,530

VALUE OF 33.73 MILES IN CUMBERLAND = $22,313,408 DEPRECIATED

TOTAL MISCELLANEOUS ESTIMATES = $ 7,500,000 DEPRECIATED

TOTAL = $30,000,000 DEPRECIATED

Observations of the unlined cast iron pipe in the PWSB system have found the pipe to be structurally sound, even 120 years after installation. The condition of the interior of the pipe, in contrast, has accumulated a significant amount of tuberculation. This accumulation has reduced the carrying capacity of the water lines, increased the amount of rusty water in the system during disruptive system events, and can provide an environment for bacteria to reproduce.

The accumulation of material on the pipe interior was a major factor in the determination that the useful life of unlined cast iron pipe in the PWSB system is 80 years. However, pipe rehabilitation through a cleaning and lining process in which the accumulated material is scraped from the pipe and a mortar lining is placed on the pipe interior extends the life expectancy of the pipe significantly. Once cleaned and lined, an 80-year-old pipe has the life expectancy of a newly installed lined pipe, 80 years.

Roughly 58% of the total mains in the PWSB system are constructed of unlined cast iron pipes. The rest are constructed of lined pipe, have been replaced with lined pipe, or have been cleaned and lined.

Miles of Water Mains in the PWSB System
(As of August 2001)

	Unlined (Pre 1960)	Lined (1961 to present)	Total
Pawtucket	119.62	82.30	201.92
Cumberland	18.78	14.95	33.73
Central Falls (PWSB owned)	0.35	4.11	4.46
Total	138.75	101.36	240.11
Central Falls (Distributation System)	13.51	6.64	20.15

A study in 1990 by Weston and Sampson Engineers formulated a program for cleaning and lining the transmission lines within the PWSB system to be funded with a ten million dollar bond through the Pawtucket Buildings Authority. The program, based on the 1971 Pitometer study, delineated a number of projects to be accomplished in two phases. In total, these two phases were planned to rehabilitate approximately 118,000 feet, or about 23 miles, of water transmission lines.

The first phase of the pipeline rehabilitation projects were begun in 1991. Although there were some modifications to the streets included in the projects, and the total quantities of pipe rehabilitated or replaced, the projects were essentially the same ones delineated in the Weston and Sampson report. There was a delay in the projects in 1992 due to a water contamination problem, but the projects continued through the early 1990's. The third $10 million phase was commenced in 1999 and is presently in progress rehabilitating 12 inch and smaller distribution mains as all the 16 inch and larger transmission mains have been cleaned and cement lined.

POTABLE WATER SYSTEM INFRASTRUCTURE STUDY

June 1997

Prepared For:
City of Central Falls
580 Broad Street
Central Falls, RI 02861

Prepared By:
Siegmund & Associates, Inc.
49 Pavilion Avenue
Providence, RI 02905

improvements, and to allow sufficient time for construction.

A summary of the long term infrastructure replacement is provided below:

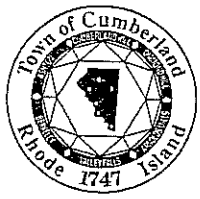
Year	Type Of System Component To Be Replaced	Cost[1]
1998 – 2002	3 – Air Release Assembly 59 – Hydrants	$138,900
2003 – 2007	59 – Hydrants 53,060 ft – Distribution Pipe	$4,217,750
2008 – 2012	8,600 ft – Distribution Pipe	$662,600
2013 – 2017	5,310 ft – Distribution Pipe	$388,300
2018 – 2022	560 ft – Distribution Pipe	$40,850
2023 – 2027	3 – Air Release Assembly 1 – Hydrant 8,760 ft – Distribution Pipe	$681,100
2028 – 2032	2,010 ft – Distribution Pipe	$149,050
2033 – 2037	48 – Hydrants 5,030 ft – Distribution Pipe	$547,300
2038 – 2042	340 ft – Distribution Pipe	$25,500
2043 – 2047	No Infrastructure Replacement Scheduled During This Period	$0
TOTAL		$6,851,350
(1) cost is represented in 1997 dollars		

DEPRECIATION VALUE OF THE EXISTING WATER SYSTEM

The depreciation value of the existing water system is defined as the method of depreciating a fixed asset whereby the asset's useful life is divided into the total cost less the estimated salvage value. Appendix A provides a listing of all of the water system components and their associated depreciation value in terms of 1997 dollars.

THE DEPRECIATION VALUE OF THE EXISTING SYSTEM = $ 2,950,424

Michael W. O'Leary
Tax Assessor
Email: moleary@cumberlandri.org



(401) 728-2400
Sandra St. Laurent x–13
Shirley Pemberton x–14
Fax (401) 475-1851

P.O. Box 7
Cumberland, Rhode Island 02864-0007
www.cumberlandri.org

MARSHALL AND SWIFT COST ANALYSIS:

UTILITY PIPING (8 & 12 INCH – 33.75 MI.) $60 PER LINEAL FOOT	$10,692,000
HANGERS $10 PER LINEAL FOOT	$1,780,000
METERS (5000 @ $120 EACH AS PER ENGINEER)	$ 600,000
HYDRANTS (300 AT $10,000 AS PER ENGINEER)	$3,000,000
1.5 MILES (7,920 $400 PER L/F) OF 48" DIST.	$3,168,000
HANGERS (48 INCH-$20 PER L/F-7, 920 L/F)	$ 158,400
DAM (4 DAMS - $3 MIL EACH)	$12,000,000
PUMPS (4-$150,000 EACH)	$ 600,000
MISCELLANEOUS	$7,000,000
TOTAL ESTIMATED VALUE	**$38,998,400**
DEPRECIATION (50%)	**-19,499,200**
REPLACEMENT COST NEW LESS DEP.	**$19,499,200**

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

(CALCULATOR METHOD)

MISCELLANEOUS INDUSTRIAL COSTS

The following "rules of thumb" should not be used for actual appraisals, but should be considered rough budgeting guides and checks only. The costs are, in some cases, based on one or only a few construction projects and may be trended from prior values where no new costs are available. They are presented here in conformity with our policy of furnishing all possible information to the users of the *Marshall Valuation Service*, with the knowledge that they will use the data with consideration for its probable degree of accuracy. All costs have been converted to the Section 14 base. Current Cost and Local Multipliers should be used for adjustments.

COMPLETE INDUSTRIAL PLANTS

The following costs include all costs of plant and equipment when ready for operation. The capacity listed for the various plants is the rated capacity.

TYPE OF PLANT	COST
Asphalt plants	$4,600 to $6,950 per ton per hour capacity
Cement plants	$145 to $245 per metric ton per year capacity
Lime plants	$28,500 to $33,500 per metric ton per day capacity
Breweries	$74.25 per barrel of annual capacity
Generating plants:	
Coal water gasifier power	$1,425 to $2,025 per KW
Fossil fuel power (steam-electric)	$ 725 to $1,425 per KW
Geothermal power	$ 550 to $ 675 per KW
Hydropower	$1,150 to $3,575 per KW
Natural gas, combined cycle	$ 400 to $ 650 per KW
Nuclear power	$1,775 to $4,150 per KW
Mass-burn trash plants	$96,750 to $169,000 per ton per day capacity
Sewage treatment plants:	
Small, steel, packaged, 1K - 5K GPD	$10.00 to $16.00 per gal. per day capacity
fiberglass, batch, 2K - 12K GPD	$3.60 to $5.10 per gal. per day capacity
Medium, steel or concrete, 15K - 500K GPD	$2.95 to $6.10 per gal. per day capacity
Large, municipal, 1M - 5M GPD	$2.70 to $5.60 per gal. per day capacity
Water treatment plants:	
Small, 200K - 500K GPD	$4.35 to $7.90 per gal. per day capacity
Medium, 750K - 1M GPD	$3.00 to $3.55 per gal. per day capacity
Large, 2M - 10M GPD	$.90 to $2.15 per gal. per day capacity

INDUSTRIAL PLANTS (EQUIPMENT ONLY)

The following costs include all costs of equipment when ready for operation. The capacity listed for the various plants is the rated capacity.

TYPE OF PLANT	COST
Bottling lines	$4,500 to $8,725 per BPM (bottles per minute) of capacity
Canning lines	$87.50 to $129.00 per CPH (cans per hour) of capacity
Cogeneration equipment :	
Large (up to 2,000 KW)	$2,150 to $2,750 per KW
Small (up to 1,000 KW)	$1,275 to $1,650 per KW
Packaged (150 to 750 KW)	$ 600 to $ 825 per KW
Wind power turbine	$1,850 to $4,100 per KW
Gas wells (complete, on shore)	$ 55 - $142 per foot of depth
Methane gas wells	$ 63 - $103 per foot of depth
Oil wells (complete, on shore)	$ 42 - $107 per foot of depth

MISCELLANEOUS SITE WORK

Major airport runways, 42" thick (16" to 22" concrete topping), costs $40.00 to $65.00 per square foot excluding all offsite work and environmental issues. Imported earthwork can more than triple the costs. Concrete replacement, excluding sub-base work, costs $25.00 to $40.00 per square foot, including removal but not disposal or runway closure costs.

GENERAL INFORMATION

The pipe costs on this and the following page are averages of installed costs per linear foot including contractors' overhead and profit, but excluding any design layout costs or fees. All sizes refer to interior diameter of the pipe.

The costs are listed under two broad categories: SERVICE PIPING, for pipe, fittings and valves within the building lines, and UTILITY PIPING, for pipes, fittings and valves installed outside and up to the building lines.

Each category is further subdivided into pressure lines and non-pressure lines. Pressure lines generally carry water, gas, steam, etc., under constant pressure, while non-pressure lines, used for drain, waste and venting, are not subject to pressure from the materials they carry.

SERVICE PIPING

Costs for pipe under service piping represent the plumbing, HVAC and processing systems, ascending in that order. Typical fittings are included, but valves, hangers and supports, and trenching and backfill, which are all listed separately, must be added if needed.

For small or intricate installations, costs may be 15% to 25% higher. For long, straight runs with minimum fittings, costs may be 15% to 25% lower. For piping with mixed materials (e.g. steel with plastic lining) use higher end of listed costs.

For galvanized steel pipe, add 5% to 10% to black steel pipe costs. Use welded joint pipe costs for victaulic coupled or flanged steel pipe.

SERVICE PIPE

PRESSURE PIPE	¼"	½"	¾"	1"	1¼"	1½"	2"	2½"
Copper	$4.90 - $5.65	$5.75 - $ 6.95	$ 6.80 - $ 8.40	$ 8.25 - $10.40	$ 9.50 - $14.25	$11.70 - $15.95	$16.75 - $20.15	$24.60 - $30.05
Glass	- - - - - - - - -	8.95 - 16.95	11.35 - 19.20	14.45 - 22.65	- - - - - - - - -	7.70 - 28.65	25.85 - 35.05	- - - - - - - - -
Plastic	4.05 - 4.20	4.25 - 4.70	4.45 - 4.85	4.85 - 5.25	5.65 - 6.10	6.00 - 6.70	6.90 - 7.65	7.75 - 8.70
Black steel (threaded)	- - - - - - - - -	5.60 - 6.25	6.70 - 7.90	8.10 - 10.05	9.30 - 13.15	10.85 - 15.35	13.35 - 19.75	15.90 - 24.45
Steel (welded joint)	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	11.55 - 14.30	14.30 - 17.70	14.75 - 18.50	17.95 - 22.65	22.85 - 29.05
Add for trench & fill	$1.45 - $1.70	$1.55 - $ 1.90	$ 1.70 - $ 2.10	$ 1.75 - $ 2.45	$ 1.85 - $ 2.65	$ 1.90 - $ 3.50	$ 2.15 - $ 3.35	$ 2.45 - $ 3.60

PRESSURE PIPE	3"	4"	6"	8"	10"	12"	16"	24"
Copper	$28.65 - $35.80	$48.85 - $62.10	$80.65 -$106.70	$144.35 -$197.60	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Glass	34.00 - 46.85	42.90 - 65.00	49.85 - 103.95	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Plastic	9.30 - 10.65	11.90 - 13.95	17.60 - 22.75	21.60 - 27.10	$ 28.35 -$ 36.50	$ 36.15 - $ 47.30	- - - - - - - - -	- - - - - - - - -
Black steel (threaded)	18.70 - 29.65	25.05 - 40.90	51.50 - 71.40	89.15 - 106.50	121.30 - 146.65	161.30 - 181.80	- - - - - - - - -	- - - - - - - - -
Steel (welded joint)	27.00 - 34.65	42.10 - 54.70	54.80 - 72.45	65.00 - 87.05	80.20 - 108.05	94.10 - 127.65	$125.40 - $173.15	$246.80 - $346.85
Add for trench & fill	$ 2.65 -$ 3.95	$ 3.15 -$ 4.80	$ 3.85 -$ 6.50	$ 4.70 -$ 8.20	$ 5.55 - $ 9.75	$ 6.40 - $ 11.40	$ 8.10 - $ 14.70	$ 11.50 - $ 21.15

DRAIN, WASTE & VENT	1¼"	1½"	2"	4"	6"	8"	10"	12"
Cast iron	- - - - - - - - -	$ 7.75 - $12.40	$11.65 - $17.75	$17.40 - $23.55	$24.55 - $31.50	$ 39.55 - $ 53.65	$58.30 - $71.55	$82.35 - $92.65
Copper	$9.55 - $13.30	10.30 - 14.45	12.35 - 17.55	27.50 - 40.15	65.45 - 99.05	174.20 - 270.15	- - - - - - - - -	- - - - - - - - -
Glass	- - - - - - - - -	14.90 - 24.80	19.45 - 28.15	42.40 - 48.65	73.95 - 84.30	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Plastic (standard)	5.55 - 6.15	6.15 - 6.85	6.85 - 7.75	11.45 - 13.40	14.95 - 20.65	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Plastic (acid waste)	- - - - - - - - -	8.35 - 15.35	11.70 - 18.05	25.25 - 33.00	28.65 - 41.50	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -

SERVICE PIPE VALVES

Valve costs are averages of many types and are listed by material composition and size of pipe they serve. The costs are divided into three groups: general service (under 150 PSI), medium duty (150 - 300 PSI) and heavy-duty service (over 300 PSI). These three classifications are used as descriptions of the pressure ratings of the valves and not as technical specifications. Most plumbing and HVAC valves will be priced under general service. Medium- and heavy-duty valves generally represent steam and other industrial system valves only.

VALVES, EACH	¼"	½"	¾"	1"	1¼"	1½"	2"	2½"
Bronze, general	$27 - $42	$34 - $50	$45 - $ 61	$ 51 - $ 76	$ 60 - $ 93	$ 72 - $114	$103 - $ 130	$146 - $ 276
medium	35 - 46	37 - 59	49 - 77	56 - 115	71 - 158	82 - 205	118 - 287	187 - 421
Iron body, general	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	295 - 405	333 - 446
medium	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	383 - 500	506 - 698
Plastic, general	34 - 59	38 - 70	48 - 84	53 - 104	63 - 122	74 - 146	103 - 222	203 - 421
Steel, general (threaded)	- - - - - - - - -	- - - - - - - - -	82 - 112	126 - 176	158 - 219	179 - 256	216 - 327	- - - - - - - - -
medium	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	672 - 1,239	929 - 1,397

VALVES, EACH	3"	4"	6"	8"	10"	12"	16"	24"
Iron body, general	$ 375 - $ 490	$ 475 - $ 600	$ 755 - $ 950	$1,175 - $ 1,550	$ 1,925 - $ 2,450	$ 3,075 - $ 3,875	- - - - - - - - -	- - - - - - - - -
medium	625 - 845	895 - 1,275	1,575 - 2,375	2,325 - 3,575	3,150 - 4,950	3,975 - 6,375	- - - - - - - - -	- - - - - - - - -
Steel, general (flanged)	755 - 1,365	1,020 - 1,750	1,725 - 2,900	2,975 - 4,825	4,150 - 7,275	5,350 - 9,975	$ 9,050 -$16,825	$25,175 -$34,425
medium	1,175 - 1,600	1,725 - 2,050	2,975 - 3,350	4,375 - 5,575	6,000 - 8,400	7,500 - 11,850	19,125 - 20,775	- - - - - - - - -
heavy duty	2,150 - 2,575	4,650 - 5,375	6,075 - 7,025	9,325 - 10,800	13,100 - 15,000	17,025 - 19,725	- - - - - - - - -	- - - - - - - - -

SERVICE PIPE HANGERS AND SUPPORTS

HANGERS, per linear foot	¼"	½"	¾"	1"	1¼"	1½"	2"	2½"
Cast iron	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	$2.60 - $2.85	$2.70 - $3.00	$2.85 - $3.30
Copper	$1.35 - $1.65	$1.80 - $2.15	$2.10 - $2.70	$2.50 - $3.05	$2.80 - $3.45	2.95 - 3.65	3.30 - 4.10	3.70 - 4.60
Glass	- - - - - - - - -	2.65 - 3.25	2.75 - 3.35	2.85 - 3.40	- - - - - - - - -	3.00 - 3.55	3.30 - 3.80	- - - - - - - - -
Plastic	2.15 - 2.70	2.35 - 2.95	2.60 - 3.15	2.80 - 3.50	2.95 - 3.65	3.15 - 4.00	3.55 - 4.40	3.90 - 5.05
Steel (threaded)	1.15 - 1.35	1.35 - 1.50	1.50 - 1.75	1.75 - 1.90	1.90 - 2.15	2.10 - 2.35	2.45 - 2.75	2.90 - 3.20
Steel (welded joint)	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	2.40 - 2.80	2.65 - 3.00	2.80 - 3.20	3.10 - 3.55	3.45 - 4.00

HANGERS, per linear foot	3"	4"	6"	8"	10"	12"	16"	24"
Cast iron	$3.10 - $3.40	$3.40 - $3.80	$4.15 - $4.60	$5.15 - $5.60	$6.20 - $6.85	$7.60 - $8.50	- - - - - - - - -	- - - - - - - - -
Copper	4.10 - 5.15	4.65 - 5.90	5.65 - 7.25	6.45 - 8.25	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Glass	3.65 - 4.20	4.05 - 4.70	4.95 - 6.10	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Plastic	4.30 - 5.55	5.30 - 6.70	6.90 - 8.70	8.55 - 10.85	10.05 - 12.85	11.75 - 15.00	- - - - - - - - -	- - - - - - - - -
Steel (threaded)	3.10 - 3.40	3.80 - 4.15	5.20 - 5.70	6.60 - 7.30	8.10 - 8.80	9.45 - 10.35	- - - - - - - - -	- - - - - - - - -
Steel (welded joint)	3.80 - 4.35	4.50 - 5.25	5.90 - 7.00	7.35 - 8.65	8.75 - 10.25	10.15 - 12.10	$13.00 - $15.50	$18.75 - $22.10

UTILITY PIPING

Cost per linear foot for underground utility lines, including fittings, an allowance for trenching and backfill and contractors' overhead and profit. For non-circular pipe, use the average diameter of the smallest and largest dimension.

PRESSURE PIPE	4"	6"	8"	10"	12"	14"	16"	18"
Asbestos cement	$19.90 - $25.30	$24.80 - $32.35	$32.05 - $41.00	$53.30 - $65.90	$61.50 - $77.45	$66.50 - $92.95	$87.85 - $112.95	$108.25 - $151.90
Ductile iron	21.10 - 25.85	23.10 - 29.35	35.60 - 46.00	43.20 - 56.85	48.15 - 64.15	56.25 - 76.00	82.40 - 114.35	83.00 - 114.35
Concrete	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	33.15 - 42.40	39.75 - 49.10
Plastic	11.50 - 15.00	13.55 - 17.50	20.05 - 25.75	24.60 - 35.10	36.30 - 45.60	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Steel	24.80 - 27.30	30.35 - 34.60	37.90 - 44.75	56.25 - 68.00	65.10 - 80.45	68.40 - 85.90	80.45 - 103.25	97.85 - 126.05
Valves, each	$515 - $665	$1,125 - $1,375	$1,950 - $2,325	$3,075 - $3,575	$4,150 - $5,025	$5,425 - $6,650	$7,075 - $8,575	$8,850 - $10,725

PRESSURE PIPE	20"	24"	30"	36"	42"	48"	60"	72"
Asbestos cement	$123.00 - $175.00	$143.00 - $206.00	$176.25 - $262.00	$238.50 - $360.50	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Cast iron	90.25 - 125.25	97.75 - 137.25	111.75 - 159.25	139.75 - 203.25	$169.25 - $247.75	$193.00 - $283.50	- - - - - - - - -	- - - - - - - - -
Concrete	42.00 - 54.75	55.75 - 74.25	79.25 - 107.25	106.00 - 145.50	129.75 - 182.00	160.25 - 226.50	$226.50 - $327.00	$300.50 - 442.00
Steel (treated & wrapped)	104.00 - 135.50	121.50 - 161.25	154.00 - 209.00	214.75 - 295.00	295.00 - 414.50	331.00 - 467.50	- - - - - - - - -	- - - - - - - - -
Valves, each	$10,725 - $12,925	$15,225 - $18,925	$23,250 - $27,825	$32,725 - $39,300	$43,625 - $53,100	$57,125 - $67,450	- - - - - - - - -	- - - - - - - - -

DRAIN & SEWER	4"	6"	8"	10"	12"	15"	18"	21"
Asbestos cement	- - - - - - - - -	$10.10 - $13.05	$11.70 - $14.85	$22.20 - $28.25	$24.25 - $30.75	$31.55 - $40.50	$45.60 - $58.15	$50.05 - $64.00
Corrugated metal	- - - - - - - - -	11.85 - 13.65	15.55 - 19.00	23.40 - 29.70	27.65 - 31.45	35.55 - 47.00	33.75 - 45.45	42.95 - 57.85
Plastic	$4.80 - $5.30	6.15 - 8.20	9.35 - 12.60	12.40 - 17.80	15.05 - 23.60	19.90 - 36.05	- - - - - - - - -	- - - - - - - - -
Plain concrete	- - - - - - - - -	12.15 - 13.10	15.10 - 17.25	18.50 - 21.95	21.05 - 25.60	22.40 - 28.15	26.50 - 33.90	33.50 - 43.35
Reinforced concrete	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	21.65 - 27.80	23.75 - 31.05	30.50 - 39.50	40.50 - 52.65
Vitrified clay	9.00 - 12.60	13.50 - 16.70	18.05 - 21.95	32.10 - 36.75	35.90 - 41.50	48.40 - 56.50	63.25 - 74.40	77.40 - 92.90

DRAIN & SEWER	24"	30"	36"	42"	48"	54"	60"	72"
Asbestos cement	$55.00 - $ 70.75	$ 65.50 - $ 84.00	$ 94.00 - $120.50	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Corrugated metal	47.25 - 64.50	54.75 - 70.00	85.50 - 115.75	$ 99.25 - $135.00	$119.75 - $161.25	$153.50 - $213.75	$198.00 - $274.25	$221.00 - $302.25
Reinforced concrete	49.50 - 65.00	56.00 - 73.00	88.50 - 119.25	112.25 - 148.25	128.75 - 164.00	156.75 - 218.75	202.00 - 279.00	244.75 - 334.00
Vitrified clay	94.25 - 112.25	114.25 - 137.00	149.25 - 186.00	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -

DRAIN & SEWER	78"	84"	90"	96"	102"	108"	114"	120"
Corrugated metal	$242.00 - $328.25	$261.00 - $352.75	$279.00 - $377.75	$300.00 - $403.25	$322.00 - $430.25	$340.75 - $455.25	$362.75 - $481.00	$386.25 - $506.25
Reinforced concrete	295.50 - 389.50	341.00 - 445.25	371.00 - 492.25	407.75 - 540.25	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -

COMPACTORS

COMMERCIAL OR INDUSTRIAL - STATIONARY

Capacity (Cubic Yards)	Cost	Capacity (Cubic Yards)	Cost
½ and under	$ 4,900 - $ 8,400	3	$22,050 - $26,150
1	10,350 - 12,950	5	36,900 - 41,250
2	16,400 - 19,500	7	54,100 - 60,200

NOTE: For building chute-fed compactors, add $1,025 to $4,100 for each container; small bag chute compactors, add 50% to costs above.

DRUM COMPACTORS

Costs are average for compactors with cylindrical chambers, used to crush pails or drums and to compact within-drum waste material. The costs include totally enclosed, fan-cooled motors and starters, NEMA 1 control cabinets and 115-volt, pushbutton controls. Costs include installation. For compactors with pneumatic controls, cost of 60-psi air is not included.

Compaction Force (Pounds)	Compaction (Height)	Chamber (Diameter)	Electric Motor (HP)	Cost
12,000	17"	16"	3	$ 8,100
20,000	48"	38"	7.5	20,600
50,000	50"	32"	10	22,850
60,000	38"	32"	10	27,450
85,000	38"	32"	10	33,150
85,000	50"	36"	10	37,700

For explosionproof motors and pneumatic or hydraulic controls, add 20% to 30%.
For drum roll-out dolly and platform add $1,625.

Air filter systems connected to compactors above, to filter airborne matter from the compaction chambers cost $9,875. Air filter systems meeting ANSI -N510 hazardous air filtration standards cost $36,900.

INCINERATORS

COMMERCIAL OR INDUSTRIAL - STEEL

Costs do not include scrubber, chimney, electrical panel or piping. Add $10,750 to $16,500 for feeder.

Pounds per Hour	Cost	Pounds per Hour	Cost
50	$17,100 - $21,500	400	$ 74,300 - $ 94,300
100	27,200 - 30,700	600	98,000 - 133,300
200	42,000 - 46,100	1,000	114,800 - 154,800

MASONRY

Costs include brickwork but do not include chimney or air pollution control. For refractory lining add 200%.

Pounds per Hour	Cost	Pounds per Hour	Cost
100	$ 7,275 - $ 9,375	1,000	$ 24,850 - $ 27,425
200	9,150 - 11,475	2,000	44,275 - 49,700
400	13,425 - 14,850	3,000	63,450 - 71,450
600	17,150 - 19,150	5,000	101,725 - 115,450

LARGE SAWMILL OR PLANNING MILL - STEEL

Average costs for average heights, installed.

Base Area	Cost	Base Area	Cost
500 sq. ft.	$11,250	2,500 sq. ft.	$44,500
1,000	20,500	3,000	51,500
1,500	29,250	4,000	66,250
2,000	41,000	5,000	79,750

Add for forced draft systems:

6" - $3,150 8" - $3,775 10" - $4,400 12" - $5,025 15" - $5,975

PIPELINE COSTS

Moderate-pressure, long-run (over 5 miles in length), cross-country, welded steel, underground oil and gas transmission lines, not including compressors, pumping stations, bridges, etc. Costs are smoothed averages of contract costs excluding extremes. The normal range is from 75% to 150% of the listed costs, depending on length and type of pipe and pipe protection, terrain and geology, climate, location, etc.: e.g., the shorter the run, the more difficult, complex or urbanized the site, the higher the costs. Right-of-way costs are not included.

SIZE	COST RANGE (Per Mile)			SIZE	COST RANGE (Per Mile)		
(Diam.)	Low	Average	Good	(Diam.)	Low	Average	Good
6"	$172,000	$315,000	$575,000	20"	$ 425,000	$ 675,000	$1,050,000
8"	187,000	335,000	605,000	24"	525,000	825,000	1,275,000
10"	202,000	360,000	640,000	30"	675,000	1,000,000	1,500,000
12"	222,000	388,000	680,000	36"	975,000	1,325,000	1,800,000
16"	300,000	525,000	925,000	42"	1,275,000	1,700,000	2,250,000

MISCELLANEOUS INDUSTRIAL COSTS

INDUSTRIAL BOILERS

Costs are for standard packaged gas- and light-oil-fired boilers, complete with pumps, controls and gauges, 15 pounds pressure for steam, 30 pounds for water. Costs do not include flue piping, electric wiring, pad, gas or oil piping or storage tanks.

Add 12% for 125# water pressure, 25% for 150# steam.

For heavy-oil- and combination oil- and gas-fired units, add 15%.

Horsepower	Water Tube	Scotch Marine	Fire Tube
4	$ 2,650	-------	-------
6	3,700	-------	$ 7,075
10	5,375	-------	9,425
15	7,075	$ 9,800	12,125
20	8,750	11,475	14,275
30	11,775	14,950	18,275
40	14,025	17,575	21,575
50	16,500	19,925	24,900
75	22,125	25,575	31,200
100	27,400	30,225	37,200
150	37,050	38,875	47,475
200	44,475	46,150	56,125
300	60,675	58,450	71,400
400	74,425	69,750	84,700
500	91,225	79,700	97,000
600	100,300	89,325	107,925

Large high-capacity packaged boilers will cost $235 to $320 per unit of horsepower.
Examples: 1,000 HP x $320 = $ 320,000
6,000 HP x $235 = $ 1,410,000

DEFINITIONS

WATER TUBE is a boiler in which the tubes contain water and steam, with the heat being applied to the outside surface. These are generally small commercial boilers with steel or cast iron bodies.

SCOTCH MARINE is a cylindrical steel shell "fire tube" boiler with one or more cylindrical internal steel furnaces located generally in the lower portion, with a bank or banks (passes) of tubes attached to both end closures.

FIRE TUBE refers to a boiler with straight tubes, which are surrounded by water and steam and through which the products of combustion pass.

BOILER RATINGS

Packaged boilers are rated on the basis of maximum continuous nozzle output, in terms of boiler horsepower, B.T.U. per hour, or pounds of steam per hour at 212° F. Available information can be converted to horsepower by using the table below.

1 boiler horsepower = 33,500 B.T.U. per hour
= 139 square feet of steam radiation
= 223 square feet of water radiation
= 34.5# of steam per hour

1 pound of steam per hour = 970 B.T.U. per hour
1 square foot of equivalent steam radiation = 240 B.T.U. per hour
1 square foot of equivalent water radiation = 150 B.T.U. per hour

INDUSTRIAL PUMPS

The costs listed here are only indications of the average installed costs, since there are too many types of pumps and service conditions to provide really accurate estimates. This list contains a few basic centrifugal pumps for water or the equivalent, in normal temperature ranges. The cost includes drip-proof motor, impeller, coupling and case. Vertical turbine pumps and farm or residential water systems may be found in Section 17.

Suction	Discharge	Horsepower	3550 RPM	1750 RPM	1160 RPM
1¼"	x 1"	1½	$1,150	-------	-------
1½"	x 1¼"	1½	1,425	$ 1,425	-------
2"	x 1½"	3	1,650	1,825	-------
		5	1,900	2,000	-------
		7½	2,325	2,400	-------
2½"	x 2"	5	1,475	2,225	-------
		7½	2,375	2,575	-------
3"	x 2½"	5	2,075	2,150	-------
		7½	2,425	2,575	-------
		10	2,625	2,775	-------
4"	x 2"	5	2,150	2,300	-------
		10	2,750	3,100	-------
		15	3,325	3,850	-------
		20	3,575	4,325	-------
4"	x 3"	5	2,325	2,675	-------
		10	2,950	3,275	-------
		15	3,525	4,000	-------
5"	x 4"	10	-------	3,500	-------
		15	-------	4,000	-------
		20	-------	4,375	-------
		30	4,675	5,375	-------
6"	x 4"	40	-------	6,325	-------
		50	-------	7,100	-------
		60	5,875	8,275	$ 9,900
		75	7,825	9,500	11,275
6"	x 5"	20	-------	4,700	-------
		30	-------	6,525	5,525
		50	-------	7,450	8,900
		75	7,825	9,500	-------
8"	x 6"	40	-------	6,875	-------
		60	-------	8,775	9,750
		75	-------	10,300	-------
		100	-------	11,850	-------
		125	-------	12,750	-------

For costs of pumps with horsepower ratings not listed, use the proper suction and discharge size and adjust for the cost of the proper motor from Page 4, or interpolate. Add 50% for horizontal split-case pumps.

LAWRENCE, MA

20 MILES - $12,000,000

3.6 MILLION PER MILE

33% GOOD 4" - 12"

PONDS - NOT LINED - $50,000

AERATION SYSTEM - $300,000

SPRINKLER - MINOR

PUMPS - 1/2. MILLION

PIPE TO RAW PUMP STATION 4' DIA.

$1.5

INTAKE STRUCTURE - TRASH RAKES INTO RAW WATER PUMP STATION IS UNDERNEATH PURE PLANT

40 MILLION TO 50 MILLION

$42,000,000

CAPACITY - 35 MILLION - NOW 28 MIL

PEOPLE 28 MIL / 30 - 35 MIL.

COMMENTS FROM PAUL H. DELONG

EARTH TECH
A tyco INTERNATIONAL LTD. COMPANY

Paul H. DeLong

Project Manager
Design-Build

42 East Grove Street
Middleborough, Massachusetts
02346

Telephone 508.917.1700
Direct Line 508.923.1247
Facsimile 508.917.1234

paul_delong@earthtech.com

978-387-0623

978-

Richard Johnson (Deb)
US Filter

732-7800
401-765-5916 cell

...oard, 85 Bra...
4:45 P.M. to re...
will follow.

The Pawtucket W...
Tuesday evening, ...
Water Supply Boar...
seek to go into an E...
R.I.G.L. 42-46-5 (a)(...
(a)(1)).

...dividuals requesting i...
...02 at least (72) hours ...

...y,

...KET WATER SUPP...

...urchand, P.E.

The Pawtucket Water Supply Board

Pawtucket Water Supply Board
FY 2003 Budget

PROJECTED FY03 REVENUE

METERED SALES	$	8,610,367
CUSTOMER CHARGE	$	1,369,569
FIRE	$	824,286
WHOLESALE	$	780,329
STATE SURCHARGE	$	82,528
INSTALLATIONS	$	52,155
DELINQUENT CHARGES	$	128,455
MISC.	$	22,510
BALANCE OF FY02 RESERVES	$	150,000
PUC FILING FOR UNEXPECTED EXPENSES	$	383,803
TOTAL	$	**12,404,002**

= 50% EXPENSES
10% CAP RATE
= $62,020,010 VAL...

EXPENSES by DIVISION

ADMINISTRATION	$	3,035,524 ✓
DEPT SERVICE	$	2,393,445 ✓
INFRASTRUCTUE REPLACEMENT FUND	$	2,033,039 ✓
ENGINEERING	$	369,649 ✓
CUSTOMER SERVICE	$	251,786 ✓
METERS	$	389,804 ✓
SOURCE OF SUPPLY	$	896,186 — 525,944
PUMPING	$	478,026 — 6,830
PURIFICATON	$	1,452,895 ✓ — 47,813
TRANSMISSION AND DISTRIBUTION	$	1,103,648 ✓ — 102,456
TOTAL	$	**12,404,002**
NET INCOME(LOSS)	$	0

Add'l Cost ... Sludge ...
693,043

ASSESSOR'S PRICING — CUMBERLAND WATER DEPT. Superintendent

WJ1

PARTIAL PRICES			YEAR	ITEM
3,000			1990	TURBIDIMETER $3,000
800			1992	AUTO PIPETTOR 800
3,000			1992	AUTOCLAVE STERILIZER 3,000
500			1992	DISSOLVED OXYGEN METER 500
?,500	17	2	1988	Turbidimeters 500 each
0,000	18	3	1986	Fiberglass Alum Tanks $1 per gallon (SIZE ?)
1,900	19	1	1985	Swivel Chair $100
0,000	20	2	1983	Flouride Tanks 1,000 per
2,100	21	1	1980	Calculator
?,200	22	2	1980	Emergency Air Masks
1,150	23	1	1980	Emergency Standby Pump for Chlorinators $500 per
926,000				
	24	1	1978	Diesel Generator 285KW $80,000
12,500	25	7	1975	Chemical Feed Pumps 500 per.
13,000	26	3	1975	Chlorinators 500
135,000	27	2	1975	Caustic Tanks 5,000 Gallon Steel 5,000
	28	2	1975	Rapid Mixers
	29	2	1975	Chlorine Scales
	30	1	1975	Flocculators
93,000	31	1	1975	Carbon Machine $3,000
120,000	32	2	1975	Calgon Tanks and Pumps $ ~~[illegible]~~ 10,000
99,000	33	1	1975	Control Panel & Pacing Equipment 3,000
			1975	UV STERILIZER 500

119,00

15,000 FDA KEMP TANKER — VERTICAL — MANWAY — 15,000 — $15,000
141 x 244
IND. $18,000

2,670,650
86,200

2,756,850

ASSESSOR'S RECORDS - CUMBERLAND WATER DEPT

	ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION
	1	2	1998	Floating Aerators
4000	2	1	1997	4000 Gal Fuel Tank 2000
	3	1	1997	Badger Meters - TI SALES - SU 978 - 443-2002
	4	1	1997	Signal Transmission Equip 538
				NEPTUNE METER - DIRECT JOE COULTER 401. 978-337-0525
				BAG PHONE
4,500	9	1	1992	Ph Meter ~~5000~~ 500
16,500	11	1	1990	Air Tank and Mask 1500
6,000	12	2	1989	Chlorine Analyzers 500 each
6,500	13	1	1989	Polymer Pump 500
700	1	1	1997	Hach EC1000 PH System 700
				COPIER
16,000	2	1	1928	12 MGD Pump with 800HP Motor 8,000
18,000	3	1	1917	5 MGD Pump with 325HP motor 4,000
500			1998	PH/ION METER 500

	ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION
500	1	1	1998	Benchtop PH Meter 500
400	2	1	1998	Electrode stand & stirrer 200
600	3	1	1998	Power Supply for Analyzer 200
2,000	4	1	1998	DR/850 Colorimeter 500
10,000	5	1	1997	Spectrophtometer 2,000
86,200				TI SALES - SUDBURY

PAID PR
15,8
12,1
1,900

1998 - FILING

TOWN OF CUMBERLAND - ASSESSOR'S OFFICE
TANGIBLE PROPERTY ACCOUNT

FURNITURE AND FIXTURES - MACHINERY AND EQUIPMENT

CALENDAR YEAR PURCHASED	AQUISITION COST	REMAINING LIFE	REMAINING LIFE VALUE
1998	$17,659	95 %	$16,776
1997	$19,985	90 %	$17,987
1996	$0	80 %	$0
1995	$995	70 %	$697
1994	$1,225	60 %	$735
1993	$75	50 %	$38
1992	$41,670	40 %	$16,668
1991	$345,421	30 %	$103,626
TOTALS	$427,030		$156,526

PURIFICATION PLANT - 120 MILL STREET

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
1	2	1998	Floating Aerators	15,800	$15,800
2	1	1997	4000 Gal Fuel Tank	$3,656	
3	1	1997	Badger Meters	$4,460	
4	1	1997	Signal Transmission Equip	$3,911	
5	1	1997	Bag Phone	$100	$12,127
6	2	1994	Swivel Chairs	$172	
7	2	1994	Wood Chairs	$116	$288
8	1	1993	Typist Chair	$75	$75
9	1	1992	Ph Meter	$1,100	
10	1	1992	Copier	$800	$1,900
11	1	1990	Air Tank and Mask	$2,500	
12	2	1989	Chlorine Analyzers	$4,600	
13	1	1989	Polymer Pump	$425	
14	1	1989	File Cabinet	$100	
15	1	1989	Typewriter Table	$50	

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
16	1	1989	Electric Typewriter	$350	
17	2	1988	Turbidimeters	$3,200	
18	3	1986	Fiberglass Alum Tanks	$8,600	
19	1	1985	Swivel Chair	$35	
20	2	1983	Flouride Tanks	$5,000	
21	1	1980	Calculator	$139	
22	2	1980	Emergency Air Masks	$1,125	
23	1	1980	Emergency Standby Pump for Chlorinators	$1,250	
24	1	1978	Diesel Generator 285KW	$114,000	
25	7	1975	Chemical Feed Pumps	$16,450	
26	3	1975	Chlorinators	$22,000	
27	2	1975	Caustic Tanks 5,000 Gallon Steel	$5,500	
28	2	1975	Rapid Mixers	$8,000	
29	2	1975	Chlorine Scales	$1,950	
30	2	1975	Flocculators	$63,000	
31	1	1975	Carbon Machine	$4,700	
32	2	1975	Calgon Tanks and Pumps	$5,220	
33	1	1975	Control Panel & Pacing Equipment	$6,500	
34	1	1975	File Cabinet	$100	
35	1	1969	Desk	$100	
36	1	1969	Typist Chair	$50	
37	2	1965	Desks	$80	
38	1	1964	File Cabinet	$50	
39	1	1955	Desk	$20	
40	2	1950	Book Cases	$10	

41	3	1950	Filing Cabinets	$75	
ITEM NO.	QUANTITY NO.	CALENDAR YEAR NO.	DESCRIPTION NO.	TOTAL NO.	CALENDAR NO.
42	3	1945	Filing Cabinets	$60	
43	1	1945	Electric Fork Lift	$3,500	
44	1	1939	Control Board	$7,700	
45	2	1939	Wood Chairs	$10	
46	3	1939	10 MGD Influent Pumps with 100HP Motors	$24,000	
47	2	1939	2 MGD Washwater Pumps with 50HP Motors	$4,400	
					$314,849

PUMPING STATION #3 - RALCO WAY

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
1	1	1997	Hach EC1000 PH System	$1,625	$1,625
2	1	1928	12 MGD Pump with 800HP Motor	$6,800	
3	1	1917	5 MGD Pump with 325HP motor	$2,700	
					$9,500

WATER QUALITY LABORATORY - 120 MILL STREET

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
1	1	1998	Benchtop PH Meter	$610	
2	1	1998	Electrode stand & stirrer	$365	
3	1	1998	Power Supply for Analyzer	$235	
4	1	1998	DR/850 Colorimeter	$649	$1,859
5	1	1997	Spectrophtometer	$6,233	$6,233
6	1	1995	Six Unit Stirrer	$995	$995
7	3	1994	Desk Chair	$297	

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
8	1	1994	Office Desk and Hutch	$205	
9	1	1994	Computer Desk and Hutch	$330	
10	3	1994	Chairs	$105	$937
11	1	1992	pH / ION Meter	$2,146	
12	1	1992	Microscope	$1,246	
13	1	1992	Turbidimeter	$1,086	
14	1	1992	Disolved Oxygen Meter	$988	
15	1	1992	Mechanical Convection Oven	$588	
16	1	1992	Sterilization Oven (Dry)	$428	
17	1	1992	Refrigerator with Freezer	$1,200	
18	1	1992	Refrigerator	$895	
19	1	1992	Muffle Furnace	$495	
20	1	1992	Drying Oven	$398	
21	1	1992	Autoclave Sterilizer	$22,198	
22	1	1992	Glassware Washer	$5,895	
23	1	1992	Auto Pipettor	$929	
24	1	1992	Colony Counter	$486	
25	4	1992	Hot Plates	$792	$39,770
26	1	1991	Incubator	$5,245	
27	1	1991	Water Bath, Coliform	$1,495	
28	1	1991	Electronic Balance	$595	$7,335
29	1	1990	Turbidimeter	$895	
30	1	1988	pH / ION Meter	$1,940	
31	1	1986	Analitical Balance	$1,458	
32	1	1985	Autoclave Sterilizer	$8,246	
33	1	1984	Spectrophtometer	$0	Deleted 1997

34	1	1982	Turbidimeter	$1,198	
35	1	1975	Turbidimeter	$0	Deleted 1998
36	1	1975	UV Sterilizer	.$895	$13,737

COMPUTER EQUIPMENT

CALENDAR YEAR PURCHASED	AQUISITION COST	REMAINING LIFE	REMAINING LIFE VALUE
1998	$0	90 %	$0
1997	$976	80 %	$781
1996	$2,454	70 %	$1,718
1995	$0	50 %	$0
1994-PRIOR	$1,997	30 %	$599
TOTALS	$5,427		$3,098

WATER QUALITY LABORATORY - 120 MILL STREET

ITEM NO.	QUANTITY	CALENDAR YEAR PURCHASED	DESCRIPTION	TOTAL AQUISITION COST	CALENDAR YEAR TOTALS
1	1	1997	Printer - Hewlett Packard	$976	$976
2	1	1996	Personal Computer - Cyber Max	$2,454	$2,454
3	1	1992	Personal Computer - Acer	$0	Deleted 1998
4	1	1992	Printer - Epson	$599	
5	1	1992	Fax / Modem	$499	
6	6	1992	Software Programs	$899	$1,997

SECTION IV

LEGAL

R.I. 2. page 15

saving clause that the
any wise affect any-
and in all cases where
act the proceedings
till in force."

that the execution
hattels and real estate
t of 1839.

ded, that the execu-
chattels only accord-
ition was presented;
an execution under
authorized by some
saving clause in this
act of 1839, not to

nd chattels and real

PROVIDENCE GAS CO. *v.* ISAAC THURBER *et al.*

A personal chattel does not become a fixture, so as to be a part of the real estate, unless it be so affixed to the freehold as to be incapable of severance from it without violence and injury to the freehold; and if it be so annexed, it is a fixture, whether the annexation be for use, for ornament, or from mere caprice.

The grant to a corporation by charter, repealable at the will of the legislature, of a right to lay gas-pipes in the public streets, is not a mere revocable license, but an easement or incorporeal hereditament, and the pipes, laid by virtue of it, are fixtures, and it is not competent for the grantees of the right to urge that the grant is void, because no compensation has been allowed to the owners of the soil.

THIS was an action to recover two hundred and fifty dollars, being a portion of the tax assessed upon the Providence Gas Co. The case was argued to the court upon an agreed statement of facts, from which it appeared: That the defendants as assessors of taxes of the city of Providence, for the year 1849, assessed the plaintiffs in the sum of four hundred dollars, for real estate valued at eighty thousand dollars, including in said assessment the gas-pipes of the plaintiffs laid in the streets of said city, and valued at fifty thousand dollars, as well as their lands and buildings, valued at thirty thousand dollars. The pipes were of iron; mostly of nine feet in length, with a socket at one end and connected in two different ways, a part of them being united by lead joints and a part by packing yarn and cement. The building for the manufacture of the gas was situated at the corner of Benefit and Pike

streets. The gas was stored in gas holders, from whence it passed by a pipe leading into the governor, situated within said building. This pipe entered the bottom of the governor, and was attached thereto by flange and bolts. The main outlet pipe was also attached to the bottom of the governor in the same manner, and passing perpendicularly into the ground to the depth of about three feet, within the area of the building, and thence extending horizontally under ground within said area at the same depth, was continued under ground (united by joints as above described) through or under the walls of the building and through the principal streets of the city. The service or supply pipes were connected with the main pipe by drilling the main pipe and screwing on the service pipes, which were carried under ground to the inside of the walls of buildings, and the meter was there attached, and from the meter the gas was distributed in smaller pipes as desired. The section of the charter which authorizes the Gas Company to lay the pipes in the street, is as follows: "Sec. 2. Said company shall have power and authority, with the consent of the Board of Aldermen of said city, to open the ground in any part of the streets, lanes and highways in said city, for the purpose of laying and repairing pipes for conducting said gas."

The Board of Aldermen in August, 1848, voted: "That consent be given to the laying of the pipes of said company, they in all cases complying with the provisions of "An ordinance in relation to streets and highways," provided, that nothing in this consent be construed to prevent the city from building culverts or otherwise improving any highway, but in all cases when said pipes are in the way of constructing any culverts or other improvement, they shall be removed by the Gas Company."

SEPTE

Providence Ga

By the 10th section
made subject to the p
Manufacturing Corpor
of the General Assemb

Ames and Payne, for
1st. By the 2d sect
of the Board of Alder
was granted to the p
streets of Providence, n
Aldermen. What is th
are owned by the publi
an ownership which enla
lic. The first public ri
of laying drains and aq
the public needs them.
has been granted by th
that it is to be done u
men. The effect of t
street for this purpose
the company. The g
be revoked, though th
vested rights of a publi
poration cannot be imp
pp. 275—306, note b, 2
ment, not capable of e
istence from the realty.
rule, the pipes would fo
of which they are an in
it is a license granted b
which the company ha
estate. A personal lic
unless it is granted me

By the 10th section of the charter, the corporation is made subject to the provisions of "An act in relation to Manufacturing Corporations," passed at the June session of the General Assembly, A. D. 1847.

Ames and Payne, for the defendants, contended:

1st. By the 2d section of their charter, and the vote of the Board of Aldermen in pursuance thereof, the right was granted to the plaintiffs to lay their pipes in the streets of Providence, under the direction of the Board of Aldermen. What is the effect of this grant? The streets are owned by the public for public purposes — and it is an ownership which enlarges with the demands of the public. The first public right is that of travel, but the right of laying drains and aqueducts and gas pipes arises when the public needs them. Now this right of laying pipes has been granted by the public, without reservation except that it is to be done under the supervision of the Aldermen. The effect of the grant is to vest the use of the street for this purpose in the Gas Co. during the life of the company. The grant has been vested and cannot be revoked, though the charter may be repealed. The vested rights of a public and much less of a private corporation cannot be impaired by the legislature. 2 Kent, pp. 275—306, note b, 309. This right then is an easement, not capable of corporeal seizin, but deriving its existence from the realty, and according to the well-known rule, the pipes would follow the character of the property of which they are an incident. Or, if you call it a license, it is a license granted by an act of the legislature, under which the company have acquired vested rights in real estate. A personal license in real estate is real estate, unless it is granted merely by parol, and is revocable at

will, which is the ground on which it has been held to be personal property.

2. The gas pipes are fixtures. This company owns real estate to which these pipes are necessarily attached, for the purposes for which they and the real estate are used. This makes them fixtures. A fixture is a thing affixed to the freehold. 2 Kent, 345, note a; 8 Missouri R. 444; Gibbons on Fixtures, pp. 1, 2, 38, 39. By a fixture is not meant a thing which cannot be removed, but rather a thing which may be removed, but which while it remains is a part of the realty. 2 Kent, 343; Gibbons, pp. 11, 12. These pipes are actually annexed to the freehold and used with it. They are laid in the freehold of the street, by virtue of a grant from the State, and partake of the nature of that freehold. Digest of 1844, sections 32 and 34. They are also affixed to the Gas-Works. In the case of a mill, the trenches and race-ways leading to and from the mill would pass by grant of the mill as an appurtenance thereto. Yet the trenches are no more real estate than these pipes. They are merely pipes open at the top. Suppose this company should sell the Gas-Works and all its fixtures and appurtenances, would not the pipes pass with them? The sleepers and rails of a railway lie on the ground, and yet they are taxed as real estate. The point established by 2 Smith's Leading Cases, 212, is not that the fixtures must be essential to the use of the soil to which it is annexed, but that where a thing is essential to the use of the freehold, it may be a fixture though not annexed.

The counsel likewise cited *The Queen* v. *Cambridge Gas Light Co.* 35 Eng. Com. Law R. 333, and *The Queen* v. *The London, Brighton and South Coast Railway Company*, 3 Eng. L. & E. R. 329; *Regina* v. *The Southampton Dock*

Company, Ibid. 464, to s
as real estate.

Bradley and Mathews
1. From a review of t
ing Cases, pp. 212, 213
constitute a thing a fixt
to the freehold, but es
freehold is applied, Tl
characteristics. By a fi
thing affixed directly to
off link after link for n
carrying the idea of ann
authority or principle to
the wires of a telegraph
office. Though there a
kinds frequently spoken
authority to show that th
lot. And if they were s
personal property in thi
tached to the freehold b
statute is itself personal p
the principal. Dig. of 18
the fixtures should be ess
The buildings are emplo
and anything annexed, w
ture of gas would be a fi
chinery for distributing a
facture of it could be carr

2. This right to lay the
streets of the city, but a
tion. This right is revo
revoked. Gale & Whatel

Company, Ibid. 464, to show that these pipes were taxable as real estate.

Bradley and Matheweon, for the plaintiffs, contended:

1. From a review of the authorities in 2 Smith's Leading Cases, pp. 212, 213 and 214, it was laid down that to constitute a thing a fixture, it should be not only annexed to the freehold, but essential to the use to which that freehold is applied, These pipes have neither of these characteristics. By a fixture is ordinarily meant something affixed directly to the freehold, not pipes running off link after link for miles from the freehold. This is carrying the idea of annexation farther than there is any authority or principle to sustain it. On the same ground the wires of a telegraph might be held fixtures of the office. Though there are pipes and aqueducts of all kinds frequently spoken of in the decisions, yet there is no authority to show that they are fixtures of any building or lot. And if they were so at common law, they would be personal property in this case, because they are not attached to the freehold but to an apparatus which by the statute is itself personal property, and the incident follows the principal. Dig. of 1844, p. 216, sec. 2. And secondly the fixtures should be essential to the use of the freehold. The buildings are employed in the manufacture of gas, and anything annexed, which is essential to the manufacture of gas would be a fixture. These pipes are the machinery for distributing and selling the gas, and the manufacture of it could be carried on without them.

2. This right to lay the pipes is not an easement in the streets of the city, but a personal license to the corporation. This right is revocable; an easement cannot be revoked. Gale & Whately, pp. 13, 21. The charter may

be repealed. Such a right is personal property. *Ashmun et al.* v. *Williams et al.*, 8 Pick. 462; *Marcey* v. *Darling*, 8 Pick. 283; *Putney* v. *Day*, 6 N. H. 430. The right, being personal to the company and revocable, is to be governed by the analogies of parol license rather than of easements, which are rights inhering in the soil and cannot be revoked. So far it has been assumed that the party making this grant owned the fee in the streets. The party here does not own the fee but merely an easement in the streets and have granted a right, if this is an interest in the land, which was not necessary to the public use, without the consent of the owners. Now, though we cannot deny the title of our grantor, yet the court will not suppose the grantor has given a greater right than he possessed, unless they are obliged so to construe it. If this is an interest in land it could not pass without the formality of a deed. But if it is a right or power to do certain things, if it is a delegated jurisdiction (so to speak) of the public, then it might be granted by the legislature and in this manner. "Power and authority" are the words employed in the charter; that, they could confer, but not an interest in land, without compensation to the owners, which distinguishes this case from that of railroads.

The English decisions, cited by the defendants' counsel, were decided under the 43d Eliz. ch. 2, which directly taxes the occupier. It has been decided under this statute, that the laying of pipes in land is an occupation of the land. Our statute (Dig. of 1844, p. 426, sec. 6,) authorizes the tax to be levied upon the owners of real estate or those who hold and occupy the same. Under the English statutes these pipes would undoubtedly be taxable, because that statute authorizes the taxing of an occupation which was not real estate. But under ours

they cannot be taxed
or use of the land is i
that it is personal prop
. They also cited *Th*
Law, 342; *The Kin*
of the Mersey and Ire
Chelsea Waterworks C
gust, 1851.

The opinion of the
GREENE, C. J. It
assessors of taxes for
plaintiffs for their gas
The ground upon whi
that these pipes are li
the sense of the act re
of taxes. The sixth
lows: "The assess
assessing taxes for re
upon the owners of
who hold or occupy

If the pipes in que
has been rightly ma
personal estate, it is
fendants that the ass
entitled to judgment.

The only question
pipes are fixtures.

In *Farrar* v. *Stac*
that where machine
which a building is
fixture, although on

onal property. *Ashmun* 2; *Marcey* v. *Darling*, 8 430. The right, being able, is to be governed ther than of easements, soil and cannot be re- l that the party making eets. The party here easement in the streets an interest in the land, e use, without the con- we cannot deny the will not suppose the an he possessed, unless If this is an interest in formality of a deed. ertain things, if it is a of the public, then it e and in this manner. ords employed in the ut not an interest in owners, which distin- uds.

he defendants' counsel, ch. 2, which directly cided under this stat- l is an occupation of 1844, p. 426, sec. 6,) on the owners of real py the same. Under would undoubtedly be rizes the taxing of an tate. But under ours

they cannot be taxed unless our right to the occupation or use of the land is itself real estate. And we contend that it is personal property.

They also cited *The King* v. *Thomas*, 17 Eng. Com. Law, 342; *The King* v. *The Company of Proprietors of the Mersey and Irewell Navigation*, Ibid. 341; and *The Chelsea Waterworks Company* v. *Bowley*, Law Times, August, 1851.

The opinion of the court was delivered by

GREENE, C. J. It is agreed that the defendants, as assessors of taxes for the city of Providence, assessed the plaintiffs for their gas pipes, laid in the streets of the city. The ground upon which the assessment has been made is, that these pipes are fixtures, and, therefore, real estate in the sense of the act regulating the assessing and collecting of taxes. The sixth section of that act provides as follows: "The assessors of taxes in the several towns, in assessing taxes for real estate, may assess the same either upon the owners of the real estate, or upon the person who hold or occupy the same."

If the pipes in question are real estate, the assessment has been rightly made. If on the other hand they are personal estate, it is conceded by the counsel for the defendants that the assessment was illegal, and the plaintiffs entitled to judgment.

The only question in the case, then, is whether these pipes are fixtures.

In *Farrar* v. *Stackpole*, 6 Greenleaf, 157, it was held that where machinery was essential to the purposes for which a building is employed, it must be considered as a fixture, although only attached to other machinery and

not to the premises themselves, and capable of being removed without immediate or physical injury of any sort.

In *Voorhies* v. *Freeman*, and *Pyle* v. *Pennock*, 2 Watts & Sergeant, 115, 390, the Supreme Court of Pennsylvania adopted the same rule.

The Supreme Court in Massachusetts, in *Gale* v. *Ward*, 14 Massachusetts, 352, decided, that the annexation of the fixtures must be such as to render removal impossible without physical injury to the freehold.

In *Smith* v. *Thompson*, 9 Conn. 67, the Supreme Court of Connecticut held, that a simple annexation to the freehold was not sufficient; that the annexation must be such that an injury would result from the mere act of removal independently of the subsequent want of the chattel removed.

In *Walker* v. *Sherman*, 20 Wendell, 638, the Supreme Court of New York held annexation to be necessary, although the chattel may be adapted to the uses for which the freehold was employed.

There is some conflict in the decisions of courts and in the opinions of jurists upon this subject.

We think the true rule is, that a personal chattel does not become a fixture so as to be a part of the real estate, unless it be so affixed to the freehold as to be incapable of severance from it without violence and injury to the freehold; and, if it be so annexed, it is a fixture, whether the annexation be for use, for ornament or from mere caprice.

In the present case, the pipes are sunk in the soil of the streets, to the depth of several feet under the surface, and cannot be removed without digging up the earth, and, if the Gas Co. owned the land in which the pipes were laid, we should have no doubt they would be fixtures.

But being laid in the public streets, by consent of the Board of Aldermen, under power granted to the corporation by the second section of their charter, the question is whether such annexation gives them the character of fixtures.

The charter of the corporation is liable to be repealed by an act of the General Assembly, whenever that body shall think proper to pass such an act.

This arises from the tenth section of the charter, which by this section is made subject to the provisions of "an act in relation to Manufacturing Corporations," passed at the June session, 1847.

On the part of the plaintiffs, it is contended that the power was a mere license, revocable at the will of the General Assembly, and the pipes, being laid under this license, cannot thereby become fixtures, and the case was likened to a class of cases, in which it has been held that if A erect a building on the land of B by parole license from B, such building is a personal chattel. *Ashmun et al.* v. *Williams*, 8 Pick. 402; *Marcey* v. *Darling*, 8 Pick. 283; *Aldrich* v. *Parsons & Latham*, 6 N. H. Rep. 555.

If these pipes had been laid in the land of an individual by parole license, they would not become fixtures thereby. But if the owner had granted by deed the right in fee to lay the pipes through his land, they would be fixtures, because the annexation would be under legal title.

So if A built his house in B's land, under a grant by deed of a right in fee so to do, the house would become real estate.

Is the grant of power contained in the charter when executed, of no more effect than the parole license of an individual, revocable at his will? Are the corporation to

be considered as tenants of their charter and of all the rights and property they hold under it, at the will of the General Assembly? Nearly all the charters which have been granted in Rhode Island for many years past are subject to repeal, especially Banking and Manufacturing corporations. A deed of land to such corporation and their successors conveys a fee, just as much as if they were not subject to repeal. And so corporate rights and franchises generally, under a repealable charter, are the same until the charter is repealed, as if not subject to repeal, and such is the case with the rights and franchises of the plaintiffs. It was further objected by the plaintiffs, that the grant was void because no compensation was provided for the owners of the land; but however valid this objection might be if made by the owners of the land, we do not think it competent for the plaintiffs to urge it, they being the grantees of the power and having exercised it under the grant. So far as the present question is concerned, we consider the case the same as if compensation had been provided.

What then is the nature of the right which the plaintiffs take under their charter? We think when exercised it is an easement—an incorporeal hereditament, like the right of a railroad company to build an occupy their road, or a canal company their canal, under the provisions in their charter which grant the power to take the land, upon rendering compensation to the owners.

In Binney's case, (2 Bland's Ch. Rep. 145,) the Chancellor held, that the whole estate of the Chesapeake and Ohio Canal Company, at least so far as it consisted of the canal itself, and its necessary buildings and the fixtures attached to the same, must according to the common law be regarded as realty.

The same rule was applied to a Railway Company in the case of the *Queen* v. *London, Brighton and South Coast Railway Co.* 3 English Reports, 329.

The statute of Elizabeth subjects every occupier of lands, houses, &c., to be rated, and the Gas Co. by their pipes, apparatus, &c., and the Railway Co. by their road, were considered as occupiers of the land in which the pipes were laid and on which the road was built.

The statute of Rhode Island bears some resemblance in this respect to the act of Elizabeth. It subjects the owners of the real estate, or the persons who hold or occupy the same.

But the tax has not been assessed on the plaintiffs as occupants of the land by their pipes, &c., but upon their pipes as real estate. And these pipes, being annexed to the freehold, and the Gas Co. having an easement in fee, or right so to annex them and to use them, we think they are fixtures, and rightfully assessed as real estate.

The case of *Chelsea Waterworks Co.* v. *Bowley*, reported in the Law Times for August, 1851, is relied upon by the counsel for the plaintiffs. That case arose under the land tax act, 38 Geo. 3, ch. 5. The words of this act are, "bodies corporate having or holding any land or hereditament." The 17th section of the act authorizes the tenant who has paid the tax, to deduct it out of the rent. Lord Campbell, in giving the opinion of the court, inferred from this provision, that no other lands and tenements were intended to be assessed by the act, than such as might be let by landlord to tenant. This provision, he thought, entirely inapplicable to the case at bar, and the decision mainly turns upon this point. He says the company are not the owners of the land where the pipes lie, nor are they tenants of the land, and there is no rent from which

they could deduct the
they had paid it. He c
when exercised, in the
the nature of the pos
hereditaments.

And yet in the cases
statute, the Gas Compa
been held liable under
pants of the land.

However that may b
like the 17th section of
portant particular alrea
resemblance to the 43
and makes the owner, te

Judgment for the defe

WILLIAM B. ALVERS.

Where judgment was obtained
not answered, and execution w
defendant, who stated that he
on the original writ, having be
following, the defendant petitio
might be stayed and the judgm
that the petition could not be
prima facie proof of a valid de

MOTION for a new trial.
petition and affidavit that
ing his real estate, while
he returned before the ti

they could deduct the amount of the assessment, when they had paid it. He considered the right of the company, when exercised, in the nature of an easement, and not in the nature of the possession or occupation of land or hereditaments.

And yet in the cases which we have cited under the statute, the Gas Company and the Railway Company had been held liable under that statute to assessment as occupants of the land.

However that may be, our statute contains no provision like the 17th section of the act of Geo. III, but, in the important particular already adverted to, does bear a strong resemblance to the 43 Elizabeth. It subjects real estate and makes the owner, tenant or occupant liable for the tax.

Judgment for the defendants.

WILLIAM B. ALVERSON *v.* NELSON D. ALVERSON.

Where judgment was obtained by default in a case, which by accident was not answered, and execution was issued thereon in April and shown to the defendant, who stated that he intended to settle it, and real estate, attached on the original writ, having been advertised for sale on the 8th of November following, the defendant petitioned on the 7th of November that the sale might be stayed and the judgment set aside and a new trial granted, *held*, that the petition could not be granted, although the defendant produced *prima facie* proof of a valid defence.

MOTION for a new trial. It appeared by the plaintiff's petition and affidavit that the writ was served by attaching his real estate, while he was out of the State. That he returned before the time for answering the case and

SECTION V

METHODOLOGY

APPRAISAL PRACTICE

In our complex society, professional real estate appraisers perform a variety of functions and services. They estimate several types of defined value and may advise clients and participate in decisions about real estate.

Appraisers perform analyses and render opinions or conclusions relating to the nature, quality, value, or utility of specified interests in, or aspects of, identified real estate. *Appraisal is defined as the act or process of estimating value.*[9] Real estate appraisal involves selective research into appropriate market areas; the assemblage of pertinent data; the use of appropriate analytical techniques; and the application of knowledge, experience, and professional judgment to develop an appropriate solution to an appraisal problem.

The nature of the real estate problem indicates whether the task is an appraisal (valuation) or a consulting assignment (analysis or evaluation). The value estimated may be market value, insurable value, investment value, or some other properly defined value of an identified interest or interests in a specific parcel or parcels of real estate as of a given date. Valuation assignments may produce market value estimates of fee simple estates, leasehold estates, preservation easements, and many other interests. *Consulting is the act or process of providing information, analysis of real estate data, and recommendations or conclusions on diversified problems in real estate other than estimating value.*[10] Consulting assignments include land utilization studies, supply and demand studies, economic feasibility studies, highest and best use analyses, and marketability or investment considerations that relate to proposed or existing developments.

In an appraisal assignment, the appraiser provides the client with an estimate of real property value which reflects all pertinent market evidence. In a consulting assignment, current market activity and evidence are studied to form a conclusion which may not lead to a specific value indication. In both types of assignments, conclusions are derived from appropriate data analysis performed in conformance with accepted standards of professional practice.

The application of appraisal procedures and the report that communicates the appraiser's conclusions are guided by the nature of the assignment. To avoid misunderstandings, it is important that the client and the appraiser determine whether the assignment is an appraisal or a consulting assignment.

A third type of assignment that appraisers perform is *appraisal review*, which refers to *the act or procedure of critically studying a report prepared by another appraiser.*[11]

PURPOSE AND USE OF AN APPRAISAL

The purpose of an appraisal is the stated reason for an appraisal assignment, i.e., to estimate a defined value of any real property interest, or to conduct an evaluation study pertaining to real property decisions.[12] The purpose of an appraisal is established by the client. It points to the information that the client needs to an-

9. The Appraisal Foundation, *Uniform Standards of Professional Appraisal Practice* "Definitions" and Appraisal Institute, *Supplemental Standards of Professional Appraisal Practice* "Definitions Problems."
10. Ibid.
11. Ibid.
12. Specific definitions of the terms *appraisal* and *appraisal assignment* are cited in the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute. Members and affiliates of the Appraisal Institute should be familiar with these definitions.

swer specific qu
understood, the
of the informati

When an es
sought must be
insurable value,
value. Distinctio

The purpose
value conclusion
praisal. The stru
of the valuation
example, the val
for use in a purc
for rehabilitation
the circumstance
will be the same

The use of a
tion contained i
the client's needs
residence to avoi
Corporate client
an area to help
and private citize
developer may n
nity before const

An appraisal
use of an apprai
the appraisal pro
ent's requirement
standards of pro

An appraisal
does not reflect
pling of professi

Transfer of owne

- To help prospect
- To help prospect
- To establish a ba
- To establish a ba properties
- To determine the

swer specific questions pertaining to real property. If the client's questions are understood, the purpose of the appraisal can be clearly and fully stated in terms of the information requested.

When an estimate of value is required in an appraisal, the type of value sought must be defined at the outset. The defined value may be market value, insurable value, going-concern value, assessed value, use value, or investment value. Distinctions among these terms are discussed in Chapter 2.

The purpose of a valuation appraisal establishes the foundation for the final value conclusion, which does not change to accommodate the use of the appraisal. The structure of an appraisal report may be adapted to the intended use of the valuation estimate, but the valuation estimate itself will not change. For example, the valuation of a single-family property might be reported on a form for use in a purchase or sale, on a form for mortgage financing, in a letter report for rehabilitation decisions, or in a narrative report for use in litigation. Whatever the circumstances, the dollar figure or figures associated with the defined value will be the same.

The use of an appraisal is the manner in which a client employs the information contained in the appraisal report. The use of an appraisal is determined by the client's needs. For example, a client may want to know the market value of a residence to avoid paying too much for it or accepting too little for it in a sale. Corporate clients may need to ascertain the rent levels or demographic trends in an area to help determine the advisability of relocating there. Insurance companies and private citizens may wish to know the insurable value of buildings, and a developer may need to know the supply and demand factors at work in a community before constructing an apartment complex.

An appraisal provides a basis for a decision concerning real property, so the use of an appraisal depends on the decision the client wishes to make. In defining the appraisal problem, the appraiser should develop an understanding of the client's requirements that is acceptable to both parties and consistent with accepted standards of professional practice.

An appraisal may be requested in a number of situations. The following list does not reflect all possible uses for appraisals, but it does indicate a broad sampling of professional appraisal activities.

Transfer of ownership

- To help prospective buyers set offering prices
- To help prospective sellers determine acceptable selling prices
- To establish a basis for real property exchanges
- To establish a basis for reorganizing or merging the ownership of multiple properties
- To determine the terms of a sale price for a proposed transaction

industrial property where owner-occupants outbid investors. Wherever possible, appraisers should apply at least two approaches. The alternative value indications derived can serve as useful checks on one another.

Cost Approach

The cost approach is based on the understanding that market participants relate value to cost. In the cost approach the value of a property is derived by adding the estimated value of the land to the current cost of constructing a reproduction or replacement for the improvements and then subtracting the amount of depreciation (i.e., deterioration and obsolescence) in the structures from all causes. Profit for coordination by the entrepreneur is included in the value indication. This approach is particularly useful in valuing new or nearly new improvements and properties that are not frequently exchanged in the market. Cost approach techniques can also be employed to derive information needed in the sales comparison and income capitalization approaches to value.

The current costs to construct the improvements can be obtained from cost estimators, cost estimating publications, builders, and contractors. Depreciation is measured through market research and the application of specific valuation procedures. Land value is estimated separately in the cost approach.

Sales Comparison Approach

The sales comparison approach is most useful when a number of similar properties have recently been sold or are currently for sale in the subject property market. Using this approach, an appraiser produces a value indication by comparing a subject property with similar properties, called *comparable sales.* The sale prices of the properties that are judged to be most comparable tend to indicate a range in which the value indication for the subject property will fall.

An appraiser estimates the degree of similarity or difference between the subject property and the comparable sales by considering various elements of comparison.

- Real property rights conveyed
- Financing terms
- Conditions of sale
- Market conditions
- Location
- Physical characteristics
- Economic characteristics
- Use
- Nonrealty components of value

Dollar or percentage adjustments are then applied to the sale price of each comparable property with consideration for the real property interest involved. Adjustments are made to the sale prices of the comparables because the prices of these properties are known, while the value of the subject property is not. Through this comparative procedure, the appraiser estimates the value defined in the problem identification as of a specific date.

Data such as income multipliers and income rates may also be extracted through sales comparison analysis. In the sales comparison approach, appraisers consider these data, but do not regard them as elements of comparison. These data are applied in the income capitalization approach.

Income Capitalization Approach

In the income capitalization approach, the present value of the future benefits of property ownership is measured. A property's income streams and its resale value upon reversion may be capitalized into a present, lump-sum value. Two basic formulas are used in this approach.

$$\frac{\text{Income}}{\text{Rate}} = \text{Value}$$

$$\text{Income} \times \text{Factor} = \text{Value}$$

where

$$\text{Factor} = \frac{1}{\text{Rate}}$$

Like the cost and sales comparison approaches, the income capitalization approach requires extensive market research. Research and data analysis for this approach are conducted against a background of supply and demand relationships, which provide information about trends and market anticipation.

An investor in an apartment building, for example, anticipates an acceptable return *on* the investment as well as a return *of* the invested funds. The level of return needed to attract investment capital is a function of the risk inherent in the property. Moreover, the level of return required by investors fluctuates with changes in money markets and the returns offered by alternative investments. Appraisers must be alert to the changes in investor requirements indicated by the current market for comparable investment properties and by changes in the more volatile money markets which may suggest future trends.

The specific data that an appraiser investigates for this approach might include the property's gross income expectancy, the expected reduction in gross income caused by vacancy and collection loss, the anticipated annual operating expenses, the pattern and duration of the property's income stream, and the anticipated resale value or the value of other real property interest reversions. After income and expenses are estimated, the income stream or streams are capitalized by applying an appropriate rate or factor, or converted into present value through discounting. In discounted cash flow analysis, the quantity, variability, timing, and duration of a set of periodic incomes and the quantity and timing of the reversion are specified and discounted to a present value at a specified yield rate. The rates used for capitalization or discounting are derived from acceptable rates of return for similar properties.

RECONCILIATION OF VALUE INDICATIONS

The final analytical step in the valuation process is the reconciliation of the value indications into a single dollar figure or a range into which the value will most

Vernor, James D., and Joseph Rabianski. *Shopping Center Appraisal and Analysis.* Chicago: Appraisal Institute, 1992.

Wendt, Paul F. *Real Estate Appraisal Review and Outlook.* Athens: University of Georgia Press, 1974.

White, John Robert. *Real Estate Valuing, Counseling, Forecasting: Selected Writings of John Robert White.* Chicago: American Institute of Real Estate Appraisers, 1984.

Witherspoon, Robert E., Jon P. Abbett, and Robert M. Gladstone. *Mixed-Use Developments: New Ways of Land Use.* Washington, D.C.: Urban Land Institute, 1976.

Wolf, Peter. *Land in America: Its Value, Use, and Control.* New York: Pantheon, 1981.

Building Cost Manuals

Boeckh Building Valuation Manual. Milwaukee: American Appraisal Co., 1967. 3 vols.

Vol. 1—*Residential and Agricultural*; Vol. 2–Commercial; Vol. 3–*Industrial and Institutional.* Uses 1967 cost database and includes wide variety of building models. Built up from unit-in-place costs converted to cost per square foot of floor or ground area. *Boeckh Building Cost Modifier* is published bimonthly for updating with current modifiers.

Building Construction Cost Data. Duxbury, Mass.: Robert Snow Means Co., annual.

Lists average unit prices on many building construction items for use in engineering estimates. Components arranged according to uniform system adopted by the American Institute of Architects, Associated General Contractors, and Construction Specifications Institute.

Dodge Building Cost Calculator & Valuation Guide. New York: McGraw-Hill Information Systems Co. (looseleaf service, quarterly supplements).

Lists building costs for common types and sizes of buildings. Local cost modifiers and historical local cost index tables included. Formerly *Dow Building Cost Calculator.*

Marshall Valuation Service. Los Angeles: Marshall and Swift Publication Co. (looseleaf service, monthly supplements).

Cost data for determining replacement costs of buildings and other improvements in the United States and Canada. Includes current cost multipliers and local modifiers.

Residential Cost Handbook. Los Angeles: Marshall and Swift Publication Co. (looseleaf service, quarterly supplements).

Presents square-foot method and segregated-cost method. Local modifiers and cost-trend modifiers included.

Sources of Operating Costs and Ratios

Only a few published sources are cited below. Attention is directed to the first item listed.

Robert Morris Associates. *Sources of Composite Financial Data—A Bibliography.* 3rd ed. Philadelphia, 1971.

(2) Improved

e. Tests for Highest and Best Use must:

(1) be physically possible

(2) be a legal use

(3) be financially feasible

(4) be productive to the maximum

f. Additional consideration in a Highest and Best Use analysis

(1) There must be a demand for the use, currently or in the near future.

(2) The use must be a complementary use, rather than a competitive use.

(3) It must be the most profitable use for both land and improvements.

(4) The use must be based on economic study that traces patterns of consumer demand to demand for resources (land, labor, & capital).

7. Appraisal Principles which form the foundation for Highest and Best Use analysis:

a. Anticipation. Present worth of future benefits associated with the ownership of property.

b. Balance. Appraisers analyze the market to determine if there is a proper mix of types and uses of property.

c. Competition. Availability must be in harmony with

5.2. Student Outline

Assigned Reading— PAAA: Chapter 8; PAV: Chapters 7, 8

I. Foundations of the Cost Approach

A. The cost approach is also known as the summation approach and is based on the principle of substitution.

B. The formula for the cost approach is V = LV + IV.

1. V = Market Value
2. LV = Land Value
3. IV = Improvement Value = (RCN-D)

C. Cost approach can be applied to all types of properties.

II. Steps in the Cost Approach

A. Estimate site value, presuming it is vacant.

B. Estimate replacement cost new or reproduction cost new.

C. Estimate the amount of accrued depreciation.

D. Subtract the estimate of accrued depreciation from estimated cost new.

E. Add estimated site value to estimate of depreciated replacement or reproduction cost.

III. Elements of Cost

A. Direct costs

B. Indirect Costs

IV. Types of Costs

A. Original (historical) Cost -- Cost at time of construction

B. Reproduction Cost -- Cost new to build an exact replica

demand. If one or the other is in excess, prices will escalate or drop.

d. Substitution. Basic to the approaches to appraisal — people will not spend more, pay the cost of, or invest more than is necessary to acquire an equally desirable substitute property.

e. Consistent Use. Consistent use is the concept that land cannot be valued on the basis of one use, while the improvements are valued on the basis of another.

f. Surplus Productivity. The income remaining after the costs of labor, management, and capital have been paid. This income is attributable to the land.

g. Variable Proportions. Also called the law of decreasing returns, this states that as quantities of one productive service increases, the quantities of other productive services remaining fixed, the resulting increment of product will decrease after a certain point.

h. Supply. The amount of product that producers are willing to sell under various conditions during a given period.

i. Demand. Quantities of various goods that people are willing and able to buy during some period, given the choices available to them.

j. Change. The tendency of the social and economic forces

C. Replacement Cost -- Cost new to replace the building today with one of like utility, using modern methods and materials

V. Important Characteristics of Cost

A. Quality

B. Design Type (refers to use for which they were designed)

C. Construction Type

D. Floor Area (square footage)

E. Building Shape

F. Story Height

VI. Methods of Estimating Cost

A. Quantity Survey Method

B. Unit-in-Place (expresses all direct and some of the indirect costs as units).

1. Horizontal Costs
2. Vertical Costs
3. Lump Sum Costs

C. Square Foot or Comparative Unit Method

D. Trended Original Costs or Factored Historical Costs

VII. Cost Manuals — set of cost factors organized in schedules or tables with instructions for their use

A. Based on or adjusted to local conditions

B. Easy to use and update

C. Third party cost manuals

D. Development of local cost manuals

VIII. Depreciation

A. Accrued Depreciation: Loss of value from all causes

B. Cost and value are most similar when improvements are new and represent highest and best use.

IX. Three Causes of Accrued Depreciation

A. Physical Deterioration — Loss in value due to wear and tear and the forces of nature

B. Functional Obsolescence — Loss in value due to inability of the structure to adequately perform the function for which it is used as of the appraisal date

C. External obsolescence (also called locational or external obsolescence) — Loss in value as a result of impairment in utility and desirability caused by factors outside the property's boundaries

X. Types of Depreciation

A. Physical Curable -- Cost of repair or replacement is offset by the value added to the property.

B. Physical Incurable -- Cost of repair exceeds the gain in value, not generally economical to repair or replace. It affects those physical components of a structure which are not easily seen.

C. Functional Curable Obsolescence -- Cost to cure is economically justified as of the appraisal date.

D. Functional Incurable Obsolescence -- Cost to cure the condition exceeds the increase in value.

E. External obsolescence -- Incurable in most instances.

XI. Methods of Measuring Depreciation

A. Indirect Methods

1. Sales Comparison

D	=	RCN – (S-LV)
D	=	Accrued Depreciation
RCN	=	Replacement Cost New
S	=	Sale Price
LV	=	Land Value

2. Capitalization of Income

B. Direct Methods

1. Overall Age Life -- Based on straight line depreciation

2. Engineering Breakdown -- Detailed age life method used in conjunction with quantity survey or unit-in-place methods of cost estimating

3. Observed Condition - Breaks down depreciation into its various components

a. Physical Deterioration

(1) curable -- measured by cost to cure

(2) incurable -- measured by age-life of individual item

b. Functional Curable Obsolescence

(1) deficiency — measured by the excess cost to cure

(2) modernization — measured by the cost to cure, less the physically depreciated value of the existing item

(3) superadequacy — current RCN, less any physical deterioration already charged, plus the cost to install a normally adequate item

c. Functional Incurable Obsolescence

(1) measured by direct market comparison

(2) measured by capitalization of rent loss

d. External obsolescence

(1) measured by direct market comparison

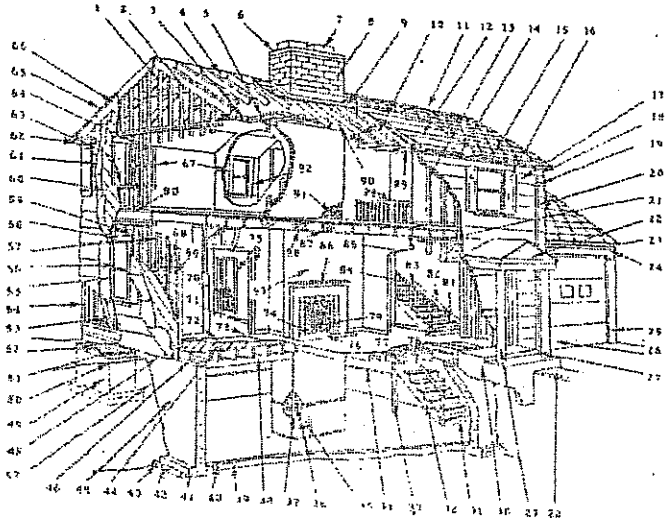
(2) measured by capitalization of rent loss modified by the land-to-building ratio

4. Gross Rent Multiplier -- Relationship between gross rent and the value of the property

5.3. Demonstrations

Demonstration 5-1: Third Party Cost Manuals

RESIDENTIAL CONSTRUCTION NOMENCLATURE



1 Gable stud
2 Collar beam
3 Ceiling joist
4 Ridge board
5 Insulation
6 Chimney cap
7 Chimney pot
8 Chimney
9 Chimney flashing
10 Rafters
11 Ridge
12 Roof boards
13 Stud
14 Eave trough or gutter
15 Roofing
16 Blind or shutter
17 Bevel siding
18 Downspout or leader gooseneck
19 Downspout or leader strap
20 Downspout, leader or conductor
21 Double plate
22 Entrance canopy
23 Garage cornice
24 Frieze
25 Door jamb
26 Garage door
27 Downspout or leader shoe
28 Sidewalk
29 Entrance post
30 Entrance platform
31 Basement stair riser
32 Stair stringer
33 Girder post
34 Chair rail
35 Cleanout door
36 Furring strips
37 Corner stud
38 Girder
39 Cinder or gravel fill
40 Concrete basement floor
41 Footing for foundation wall
42 Tar paper strip
43 Foundation drain tile
44 Diagonal subflooring
45 Foundation wall
46 Mud sill
47 Backfill
48 Termite shield
49 Areaway wall
50 Grade line
51 Basement sash
52 Areaway
53 Corner brace
54 Corner studs
55 Window frame
56 Window light
57 Wall studs
58 Header
59 Window cripple
60 Wall sheathing
61 Building paper
62 Frieze or barge board
63 Rough header
64 Cripple stud
65 Cornice moulding
66 Fascia board
67 Window casing
68 Lath
69 Insulation
70 Wainscoting
71 Baseboard
72 Building paper
73 Finish floor
74 Ash dump
75 Door trim
76 Fireplace hearth
77 Floor joists
78 Stair riser
79 Fire brick
80 Sole plate
81 Stair tread
82 Finish stringer
83 Stair rail
84 Balusters
85 Plaster arch
86 Mantel
87 Floor joist
88 Bridging
89 Lookout
90 Attic space
91 Metal lath
92 Window sash
93 Chimney breast
94 Newel post

Demonstration 5-3: Third Party Cost Manuals

ONE STORY

Square Foot Costs
Average Quality

RESIDENCE:

Total Area	WOOD FRAME Plywood or Hardboard	Stucco	Siding or Shingle	Masonry Veneer	Total Area	MASONRY Common Brick	Concrete Block
600	$45.44	$46.34	$46.62	$51.86	600	$57.07	$47.51
800	43.22	44.00	44.24	48.69	800	52.91	45.12
1000	41.58	42.27	42.49	46.62	1000	49.90	43.34
1200	40.28	40.91	41.10	44.82	1200	47.56	41.94
1400	39.19	39.79	39.97	43.42	1400	45.67	40.80
1600	38.29	38.85	39.01	42.26	1600	44.10	39.83
1800	37.51	38.03	38.19	41.25	1800	42.75	38.99
2000	36.83	37.32	37.46	40.38	2000	41.59	38.26
2400	35.67	36.12	36.24	38.90	2400	39.64	37.03
2800	34.72	35.13	35.24	37.69	2800	38.06	36.01
3200	33.92	34.30	34.40	36.68	3200	36.75	35.16

SQUARE FOOT ADJUSTMENTS:

ROOFING:

Composition shingle or Built-up, small rock	(base)
Wood shingle	+ $ .76
Wood shake	+ .92
Concrete Tile	+ 1.83
Metal, preformed	+ .68

SUBFLOOR:

Wood subfloor	(base)
Concrete slab	− $1.64

FLOOR COVER:

Allowance (if not itemized)	+ $1.95
Resilient floor cover	+ 1.71
Carpet	+ 1.76
Wood Flooring	+ 5.07
Ceramic tile	+ 5.38

PLASTER INTERIOR: + $1.63

LUMP SUM ADJUSTMENTS:

PLUMBING: 6 fixtures 1 rough-in (base)

Per fixture	+ or − $525
Rough-in	+ or − 235

FIREPLACES:

Single, 1 story	$1,600 - $2,050
Double, 1 story	2,129 - 3,076

HEATING/COOLING:

Forced air	(base)
Oil-fired	+ $ .54
Floor or wall furnace	− 1.12
Electric, radiant	− .11
Baseboard or panel	− .16
Hot water, baseboard	+ 1.02
Warm & cooled air	+ 1.32
Heat pump	+ 1.55
Evap. cooling w/ducts	+ 1.46
Air-air exchange sys	+ .93

ENERGY ADJ.: Moderate climate (base)

Mild climate	− $ .50
Extreme climate	+ 1.68
Superinsulated	+ 2.85

FOUNDATION: Moderate climate (base)

Mild climate	− $1.20
Extreme climate	+ 1.66

BUILT-IN APPLIANCES:

Allowance (if not itemized)	+ $1,685
Range & Oven	+ 910
Hood & Fan	+ 165
Dishwasher	+ 435
Garbage Disposer	+ 165
Exhaust Fan or Bath Heater	+ 100
Trash Compactor	+ 395

BASEMENT: Outside entrance: $860

Unfinished basement:	200	400	600	1200	1600	2000	2400
Concrete walls	$18.49	$13.10	$10.38	$ 9.08	$ 8.28	$ 7.76	$ 7.41
Concrete block walls	16.25	11.63	9.23	8.12	7.53	7.09	6.85
Add for finish, minimal	3.96	3.69	3.45	3.32	3.22	3.15	3.09
partitioned	17.01	15.23	13.01	11.49	11.25	10.74	10.32

PORCH/BREEZEWAY:

Area	Floor Structure: Open Slab	Open W/Steps	Wood Deck	Wall Enclosure: Screen Only	Knee Wall W/Glass	Solid Wall	Add For Roof	Add For Ceiling
25	$ 3.60	$ 6.86	$14.40	$ 8.94	$30.58	$21.86	$ 6.81	$ 2.46
50	3.33	6.26	12.09	6.63	24.39	14.38	7.82	2.32
100	3.17	6.03	8.58	4.97	16.29	10.77	7.30	2.17
300	2.96	5.44	5.58	2.76	10.15	5.98	6.53	1.96

GARAGE:

	Area	Plywood or Hardboard	Stucco	Siding or Shingle	Masonry Veneer	Common Brick	Concrete Block	Add For Finish
Attached	200	$16.61	$17.11	$17.41	$19.04	$21.26	$18.24	$ 3.48
	400	12.76	13.08	13.12	13.95	14.88	13.04	2.87
	600	11.15	11.35	11.40	11.85	12.03	11.43	2.09
Detached	200	$20.59	$21.40	$21.55	$24.20	$28.12	$22.82	$ 4.02
	400	15.75	16.10	16.49	17.93	20.24	17.61	3.22
	600	14.19	14.40	14.83	15.90	17.58	15.41	2.98

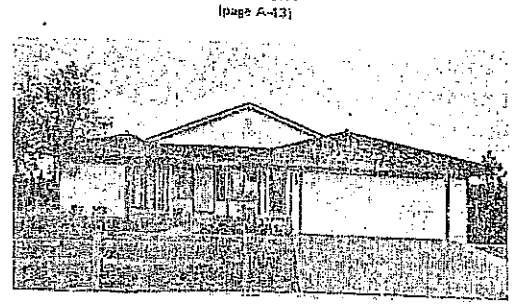
Basement Garages, add lump sum to unfin. bsmt. costs. Single: $1,040. Double: $1,415
Carports: Shed or Flat roof: $8.34, Gable roof: $8.69

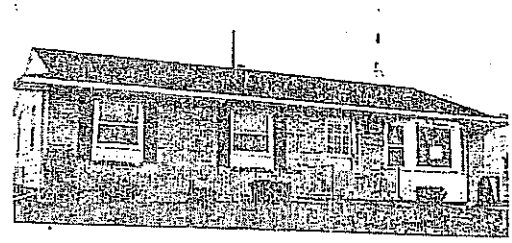
RESIDENTIAL COST HANDBOOK
© 1991 - MARSHALL & SWIFT - PRINTED IN U.S.A.

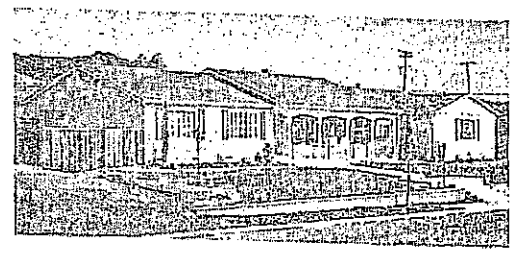
9-91

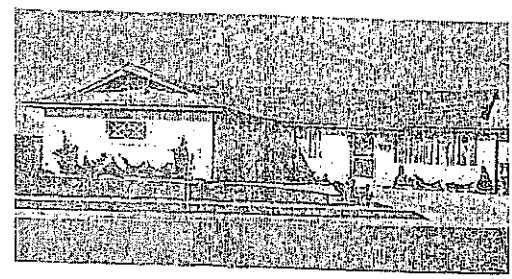
AVERAGE QUALITY

ONE STORY
(page A-43)









Tax Assessor

From: Green, Michael [Michael.Green@shawgrp.com]
Sent: Thursday, July 31, 2003 11:34 AM
To: Tax Assessor
Subject: RE: depreciation

The simplest method of calculating a cost approach is to obtain from the taxpayer vintage original cost data and apply a Handy-Whitman Index factor to each year of historical cost by plant account. This can be done for electric, gas and water properties. I know of no similar index for railroads.

We calculate physical depreciation as follows:

actual age divided by (actual age + remaining life)

Remaining life is derived from average service lives (ASLs) and Iowa Curve types (e.g. L1, R3, etc.) by plant account as approved by the regulatory commission.

My phone number is 334-270-1200. Please give me a call if I can be of further assistance.

-----Original Message-----
From: Tax Assessor [mailto:moleary@cumberlandri.org]
Sent: Monday, July 28, 2003 8:39 AM
To: Green, Michael
Subject: depreciation

hey mike,
i met you at the utility seminar (iaao) in tampa.
i am looking for a simplified explanation of the cost approach to pricing utility tangible equipment. this includes all property for railroad, gas, electric & water.
the allocation seminar you gave was excellent but i would have trouble defending that idea because i am not that familiar with the concept.
thanks for your help.
send me you phone # please.
sincerely,
mike o'leary
tax assessor
cumberland, ri
fax 401 475-1851

DEFINITIONS

Depreciation is loss in value due to any cause. It is the difference between the market value of a structural improvement or piece of equipment and its reproduction or replacement cost as of the date of valuation. Depreciation is divided into three general categories, as discussed below.

1. Physical depreciation is loss in value due to physical deterioration.
2. Functional or technical obsolescence is loss in value due to lack of utility or desirability of part or all of the property, inherent to the improvement or equipment. Thus a new structure or piece of equipment may suffer obsolescence when built.
3. External, locational or economic obsolescence is loss in value due to causes outside the property and independent of it, and is not directly included in the tables.

Effective age of a property is its age as compared with other properties performing like functions. It is the actual age less the age which has been taken off by face-lifting, structural reconstruction, removal of functional inadequacies, modernization of equipment, etc. It is an age which reflects a true remaining life for the property, taking into account the typical life expectancy of buildings or equipment of its class and its usage. It is a matter of judgment, taking all factors, current and those anticipated in the immediate future, into consideration. Effective age on older structures may best be calculated by establishing a remaining life which, subtracted from a typical life expectancy, will result in an appropriate effective age with which to work. Effective age can fluctuate year by year or remain somewhat stable in the absence of any major renewals or excessive deterioration.

Extended life expectancy is the increased life expectancy due to seasoning and proven ability to exist. Just as a person will have a total normal life expectancy at birth which increases as he grows older, so it is with structures and equipment.

Remaining life is the normal remaining life expectation. It is the length of time the structure may be expected to continue to perform its function economically at the date of the appraisal. This does not imply a straight-line expiration, particularly for mortgage purposes, since normal recurring maintenance and renewal of replaceable items will continue to contribute toward an extended life expectancy. This extended life process is accomplished by use of effective age as the sliding scale and not by continually lengthening the typical life expectancy as the structure ages chronologically.

Percent good equals 100% less the percentage of cost represented by depreciation. It is the present value of the structure or equipment at the time of appraisal, divided by its replacement cost.

APPROACHES TO DEPRECIATION

The simplest and, in past years, a widely used accounting-type concept of depreciation, particularly with individual short-lived components, is the straight-line (age/life) approach. A life expectancy is estimated and a constant annual percentage (equal wear or serviceability each year) is taken for depreciation so that at the end of that life the depreciation equals 100% of the initial cost. This linear approach is simple and easy to use but does not represent reality in most cases since time is not the only factor affecting depreciation and it fails to recognize any value-in-use. The passage of time may not in itself create additional depreciation if the property or component is well maintained and functionally sound.

While age is a critical factor, the best approach to the physical depreciation estimate is a combination of age and condition. The observed condition of each component subject to wear is estimated relative to new condition. A major replaceable component, such as a HVAC system under heavy loading in a hot, humid climate, can wear out quite rapidly, shortening the life expectancy before replacement, while many other portions of a structure, such as excavations, foundations, and concrete exterior walls, wear out slowly if at all. Such long-lived portions often represent a major portion of the total reproduction cost and if still functional will contribute toward an extended life expectancy. Physical depreciation cannot be considered a straight-line deduction from reproduction cost, since necessary and normal maintenance can offset, retard and, in some cases, even eliminate deterioration.

Another approach to depreciation was called the mid-life theory. This takes into account that most buildings depreciate little during the first few years. When it becomes evident that the buildings are no longer new, even though they are adequately maintained, the maintenance expenses rise, rentals tend to decrease and the building depreciates faster. After a number of years, they reach the period called mid-life, at which time, if the buildings are structurally sound and properly maintained, the depreciation remains constant. The mid-life theory suffers from the fact that maintenance expenses on the average building continue to go up in order to maintain the same appearance and utility, and at any age, certain building features may suffer from obsolescence.

These concepts lead to a third theory, the extended life concept, which starts with the hypothesis that buildings age in much the same manner as people and that the older they get, the greater is their total life expectancy. This concept recognizes that a building is in the prime of life before mid-life and that the r is downhill after that, but that correction of deficiencies may lower the effective age and lengthen remaining life. This recurring revitalization process periodically reverses a continuous progression do the effective age scale, reducing the indicated depreciation percentage as components are renev throughout the life-span of the building. This nonlinear approach accounts for a greater present valu slower depreciation rate in the early years as compared to the later years when diminishing serviceab and higher maintenance can accelerate depreciation.

EXPLANATION OF DEPRECIATION TABLES

The general depreciation tables in this section were developed from actual case studies of sales market value appraisals and formed the basis of the extended life theory which encompasses a remair life and effective age approach. From confirmed sales prices the land value was deducted to obtai building residual, and the replacement cost of the building was computed. The difference between replacement cost new of the building and the residual sales price of the building was divided by replacement cost new, to give the market depreciation in percentage. A similar procedure was follov with the market value appraisals, always excluding those observed cases having excessive obsolescer

The data was then collated by type of construction and usage, plotted with similar typical total expectancies, with curves computed for the groupings, for which sufficient data was available, for statist reliability. From these curves, a matching family of empirical mathematical curves was found, from wh the depreciation for any initial (when new) life expectancy could be computed under normal mai conditions.

A check of equipment depreciation by similar procedures showed that portions of the family of curv which was used for nonresidential properties, were suitable as an indicator of that depreciation.

Churches were found to fit in the depreciation category of residential structures, and those tables sho therefore be used. Motels, hotels and larger apartments are included in the nonresidential tables, wl small apartments or multiples are residential in nature. The division between residential and nonresiden depreciation appears to lie in the usage, whether operated solely for income or for amenities.

Thus, a hotel operated commercially would be expected to fit into the commercial family of curves, bu the same building were operated as a private club, its normal depreciation would be expected to follow residential curve. The proper curve to use is therefore a matter of judgment on the part of the apprais considering the usage and the type of return normally expected, whether cash, equity or intangi amenities.

USE OF THE DEPRECIATION TABLES

1. Note from your inspection the overall and/or individual condition, severity of use, utility and remain life of all building or equipment components.
2. Determine the true age of the structure or equipment.
3. Compare with like properties and study the effect of, or the lack or need of, typical maintenance or a modernization or major repair to determine the effective age.
4. Check the tables and discussion on Pages 5 through 15 for the recommended initial typical (norm useful life of the occupancy, component or piece of equipment and for any further modification befc establishing an appropriate life.
5. Check the properties listed in each depreciation table to see which to use. (Page 16, Non-residenti Page 17, Residential; Page 18, Fixtures and Equipment.)
6. Enter the proper table choosing a typical life expectancy and effective age and read off the norm depreciation, or use the remaining life expectancy as an aid as described below.
7. Note any excessive obsolescence that may require special consideration separate from the norm depreciation developed from the tables. (Review Pages 2 and 3.)

REMAINING LIFE TABLES

The remaining life tables are based on mortality tables derived from studies of building and equipmer discarding all cases of mortality due to excessive obsolescence. Their primary mission is to provide a easy way for the appraiser to determine the normal remaining life expectancy of buildings for use in th capitalization process, using the effective age and the typical life expectancy.

Many times, the remaining life expectancy of a building or piece of equipment can be established mor readily than the effective age. The Remaining Life Table on the right side of each depreciation page ma then be entered with the remaining life in the proper typical life column and the effective age read off at th left, or the appraiser may move straight across to the left side of the page and read the depreciation directl

with population and industrial trends in the territory served by the company, the regulatory agencies to which the company is subject, the competitive position of the company, its overall performance record, and any unusual contractual arrangements to which the company is committed. For example, the question of gas reserves is now critical to natural gas pipelines; the availability and cost of fuel are critical to railroads and the electric companies; the cost and availability of debt capital are critical to the capital-intensive electric utilities.

At the present time, many of the companies discussed here are tending to diversify their activities. The appraiser must be familiar with the contribution to earnings of the particular segment he is appraising. The fact that unrelated activities are producing income would have no effect on the value of the particular operating segment of the company he is appraising.

THE PURPOSE OF APPRAISAL

Appraisal of these utility properties for property tax involves additional peculiar problems. One of these is the value definition, which must be based on the law of the taxing jurisdiction. This may be at the state or local level. Generally, however, the purpose of the value estimate is to arrive at an estimate of market value. The terminology may vary from one jurisdiction to another and include such names as "fair value," "fair cash value," "full cash value," "justifiable value," or "market value."

THE PROPERTY TO BE APPRAISED

The appraisal of utility properties for property tax also involves questions concerning the definition of the property to be appraised. It is my firm belief that the best method for estimating the market value of the property of railroads and public utility or public service companies is the unit method, which provides a value estimate for the whole property without dividing the whole into geographic or function areas. This method is much more accurate—and simpler to administer—than an attempt to make an extremely large number of value estimates for small segments of property and sum up these individual appraisals to arrive at the estimated value of the whole. One isolated piece of pipe, one small section of a railroad track without connection to the main line, or one small segment of telephone or electrical wire without connection to the main system would have little value. The individual segment is valuable only if and to the extent that it contributes its share of earnings to the entire unit.

One of the most difficult problems in the unit method of valuation is determining what constitutes the unit. It is my opinion that the unit should consist of all of the property the company uses directly in its business. This would require the inclusion of all operating property and the exclusion of all nonoperating property. Because each portion of the operating property is an

integral part of the unit, it is essential that the property be looked upon as a complete unit. The value contribution of any segment of the unit to the whole property may be determined by appropriate allocation procedures once the value estimate for the entire system is completed. The unit method of valuation has been used widely and has been accepted by most courts throughout the years. If it were not accepted and almost universally used, the alternative would be a fractional appraisal of components of enterprises that operate in many different states or in many individual types of taxing jurisdictions. Most local tax assessors simply are not equipped to handle this type of appraisal. As a result, most railroads and public utilities or public service companies are assessed at the state level.

Many taxing jurisdictions do not separate real property from the personal property of railroads and public utility or public service companies. This is a practical approach, because it is often difficult to determine where real property ends and personal property begins. Because each segment of the property contributes its share of value and directly or indirectly contributes to the entire earnings of the enterprise, it appears that such a separation would serve no valuation purpose. However, the separation may be legally necessary, as for tax collection purposes; in this case, the separation may be done after the total valuation is performed. However, the appraiser must be careful to avoid double-valuation of property.

Another problem is that in some states local jurisdictions assess all properties above ground. When the appraiser is involved in such a jurisdiction he must be very aware of which portion of the property is locally assessed; otherwise, his appraisal here again will result in double taxation. The appraiser must review the local taxing statutes and applicable regulations before beginning his appraisal.

APPRAISAL TECHNIQUES

The same appraisal principles that apply to any type of property are equally applicable to the appraisal of railroads and public utility or public service companies. The only differences are the special appraisal techniques that are mandated by the effect of government regulations on earnings.

In general appraisal practice, there are three recognized approaches to estimating market value: cost, income, and market comparison. In the appraisal of railroads and public utility or public service companies, there are also three recognized approaches: cost, income, and a version of the market comparison approach called the stock and debt approach.

COST APPROACH

The appraiser of railroads and public utility or public service companies must be familiar with four types of cost. These are:

1) *Original Cost*. The actual acquisition cost of a property when first acquired or constructed. Items that must be included in this figure are

controlled closely by regulatory agencies in most instances. Many items are included in cost that would not be capitalized in a nonregulated construction project. In addition, some of the old original costs on the books of railroads actually are estimates in lieu of accurate cost figures.

2) *Book Value.* The original historical cost of a property less the accrued depreciation. In most cases, both cost and depreciation are as required by the regulatory agency. Book value sometimes is called net plant.

3) *Reproduction Cost.* The present dollar cost to produce an exact duplicate of the existing property, using identical materials. This no longer is being used in valuing railroad and utility property in most areas.

4) *Replacement Cost.* The cost in current dollars to replace an item with one having similar or equal utility. This does not require replacement with an identical property as is required in the reproduction cost.

Original cost, book value, reproduction cost, and replacement cost are rarely the same as market value. There are some few instances when an item is new and represents the most modern equipment or building available, and the decision to acquire or construct it is based on competent judgment; when this occurs, cost and market value are the same. In most instances, there are items of obsolescence present when the cost approach is considered. In recent years, the rapid advance of technology and rapidly changing economic conditions have caused substantial obsolescence to be present in most railroad and public utility or public service company properties. The availability and cost of fuel and the impact of the environmentalist have become major factors.

All three customary types of obsolescence must be considered in the appraisal of these properties:

1) *Physical Deterioration.* This form of depreciation is loss in value caused by normal deterioration of property, usually the result of normal aging. However, inadequate maintenance has a direct bearing on the amount of physical deterioration present. The effect of inadequate track maintenance is a major factor with many railroads today.

2) *Functional Obsolescence.* This form of depreciation is loss in value caused by functional deficiency within the property itself. Rapid technological changes within the past few years have accelerated the functional obsolescence in most properties.

3) *Economic Obsolescence.* This form of depreciation is loss in value caused by factors outside the property. This loss in value is in addition to normal physical deterioration and any functional obsolescence. In the appraisal of railroads and public utility or public service company property, economic obsolescence is of substantial importance. One pertinent factor is that earnings are regulated. In many instances, competing forms of transportation are subsidized. The government also often intervenes in wage disputes and imposes operating regulations. The regulatory agencies usually are customer-oriented in setting low rates of return that have caused many utilities serious financial trouble. All of these factors can and do impose economic obsolescence that must be handled in the cost approach.

ALLOCATION OF UNIT VALUE TO TAXING JURISDICTIONS

Once the value of the entire unit is estimated, it is necessary to allocate this value among the various taxing jurisdictions. There are many allocation methods in use. They can be broken down into allocation by density of use and allocation by investment; some methods are based on a combination of these two. No one allocation method may be applied uniformly to all types of railroad and public utility or public service company properties. It is my opinion that the method should be based on the particular circumstances and characteristics of the property involved. The method should take into account those factors that would most accurately assign portions of the value to the taxing jurisdiction involved. In many instances, for example, the taxing jurisdiction involved in the appraisal is nothing more than a bridge area and originates little or no direct income. However, it is necessary for these bridge areas to exist to allow the entire unit to receive earnings. In this particular situation, the use of sales as an allocation factor would be entirely inappropriate. Any allocation factor should contain within it appropriate consideration of all items included in the unit value.

SUMMARY

No one can pretend to have all the answers to the problems in this very interesting and complicated field. Every appraisal of any type of railroad and public utility or public service company property presents a challenge that always demands one's best effort. Anyone who is seriously interested in the appraisal of such properties will continue to study and gain knowledge and ability.

A brief summary of this presentation states that the unit method of appraisal is much better than fragmented appraisals of small segments of interstate railroads and/or public utility or public service company properties. The cost and income approaches are applicable universally to this class of property. The stock and debt approach has very limited application and does not apply at all to appraisals of companies engaged in diversified activities. Finally, allocation of the total system's value to various taxing jurisdictions should be based on individual company characteristics.

SUMMARY OF ADVANTAGES AND DISADVANTAGES OF "ORIGINAL COST" AND "FAIR (PRESENT) VALUE" AS A RATE BASE

The usual "*original cost*" method utilizes the company's depreciated book values. The basic differences between "original cost" and "fair value" are matters of philosophy and law. Should the rate base, on which a utility is allowed a fair rate of return on *present* value, give effect to inflationary or deflationary changes, as well as to depreciation which occurred after the original cost was incurred? Fundamentally, the problem resolves itself into the question of taking private property without compensation by allowing less than a fair return on present value. Collaterally the question is raised as to the extent to which this is countenanced (or restricted) by statute and by law. The extensive inflation of recent years had made the "original cost" method as a base value for return on investment, grossly unfair to utility stockholders. In most other types of investment, increased value of useful physical assets due to inflation is reflected on equity values of investors. However, it is argued by some experts that "fair value" may better be achieved through indexing original costs, than by actual cost base engineering valuations. Depending on the character of the plant and equipment appraised, there is probably something to be said, in specific cases, in favor of each method.

In summary, a division of opinion (irrespective of the Hope case) still exists regarding the merits of "original cost" vs. depreciated replacement cost (fair value) as a base. For reasons previously mentioned, there is a strong predilection for the "fair value" basis of valuing plant and equipment as a rate base for investment interest return on, and recapture of, *present* value. For this reason a need exists for services of engineers and appraisers as well as accountants' expertise in public utility rate cases. The actual reproduction cost estimates are reduced by depreciation (loss in value due to all causes: physical, economic and functional). Of these, perhaps economic and functional depreciation are the most difficult to estimate correctly. Equipment in place, however, probably lends itself better and more practically to indexing (trending) original cost, than inventory and estimated replacement cost of buildings less depreciation.

"ORIGINAL COST" VERSUS "FAIR VALUE"

The relative advantages and disadvantages of the use of the "original cost" and "fair value" method of establishing a rate base for public utilities might be summarized as follows:

ORIGINAL COST

Advantages

Simplicity—avoids value estimates (appraisals), is definite and readily accessible.

Cost of regulation (experts for commission) might be reduced.

Commission renounced an earlier U.S. Supreme Court decision, Smyth vs. Ames, which held that a public utility was entitled to depreciation (recapture) on the current value of the property rather than its original cost. While the Federal Power Commission barred the use of the depreciated replacement cost as a base for reasonable rate changes, the Supreme Court did not. The Supreme Court merely denied the claim of the appellant that they were in error to use original cost as a base.

COMPUTING THE RETURN

In discussing this point, the opinion states that there are various permissable ways any rate base on which a return is computed may be derived. It was finally concluded that "the end result [of the commission's computations] in this case cannot be condemned under the act as unjust and unreasonable from the investor or company viewpoint." Nevertheless, since the Hope decision, the Federal Commissions on interstate rate cases have adopted the "original cost" and not "replacement cost" of plant and equipment as a basis.

The problem of setting a value on plant and equipment under the *"original cost"* basis sometimes becomes difficult when one utility is taken over by another. The acquisition cost generally exceeds the depreciated original cost on the books. Thus under the "original cost" method, the difference between book cost and purchase price is not considered as a basis for interest and recapture of capital, but creates a special accounting problem.[6]

Moreover, in cases before State Commissions, the Hope case is frequently quoted in intrastate cases against utilities to deny the use of a present reproduction cost basis. Nevertheless, many states subscribe to the concept of basing a rate on present "fair value" as against "original cost." Testimony is accepted as to both "original cost" and current "depreciated reproduction cost." However, the computations as to the value of the commission's finding of the "fair value" of plant and equipment are often obscure, and not susceptible to exact tabulation. In 1971 in a split decision, the majority of the Iowa Supreme Court supported the Iowa State Commerce Commission in its use of "original cost" as a rate base. The majority decision stated: "As applied to the case at hand we find no preponderating argument in favor of 'fair value or reproduction cost' over 'original cost on prudent investment' in the determination of a reasonable and just utility rate base," thus dismissing the utility's complaint that a replacement cost basis should have been used.[7] (see Table 1–page 201)

However, this complaint was recognized in a strong dissent from the majority opinion. The dissent noted that in previous cases the court had held that "Our [Iowa] constitution required a fair return on the *present value* of

6. op. cit. Bonbright, p. 175.

7. See case study Table 1 for computations of the commission in this case which illustrates utilization of the "original cost" method.

Specialty property should not be valued using comparable sales approach

A valuation of a property categorized as a specialty would not be based on comparable sales since, by definition, there is no market for the property, according to the Court of Appeals of New York.

Niagara Mohawk Power Corporation, a public utility in New York, sought review of the tax assessments for approximately 23 parcels it owned during the years 1990 through 1993. While Mohawk conceded that most of the properties were specialties (that is, uniquely adapted to the business conducted on it and not convertible to other uses without the expenditures of substantial sums of money), it took issue with such categorization for four of those properties. The trial court agreed with Mohawk but was reversed by the Appellate Division, which concluded that all the parcels were specialty properties that could not be valued by using the comparable sales method.

The appellate court said that the reproduction cost less depreciation approach was the appropriate methodology to value specialty property, but should be used only in those limited instances in which no other method of valuation will yield a legally and economically realistic value for the property. The court said that there was credible evidence that the four parcels at issue here were being used primarily for the storage of electrical equipment and were no longer operational. Accordingly, the court concluded that Mohawk had provided substantial evidence that a credible dispute existed about the proper characterization of its properties and, consequently, the validity of the valuation methodology. The case was returned for further proceedings.

Niagara Mohawk Power v. Town of Geddes
Court of Appeals of New York
July 7, 1998
(AJ/01/0.—$10)

State may not tax hotel property on federal land

The State of Ohio has no jurisdiction to assess a real property tax on a hotel operated at an air force base on land leased from the U.S. government, according to the Supreme Court of Ohio.

The Hope Hotel & Conference Center is located on the Wright-Patterson Air Force Base in Ohio. The land on which the hotel is located was leased from the U.S. Air Force by H. A. I. Inc. and Vantage Group, Inc. That lease was subsequently assigned to Visicon, Inc. The lease was for the sole purpose of erecting a 250-room visitors quarter and conference center, primarily for use by military and civilian personnel traveling in support of air force missions. The United States, as owner, was sent a tax bill for the year 1994 on only the building. Visicon filed an application for exemption. The tax commissioner upheld a use tax assessment against Visicon and denied its application for exemption. The Board of Tax Appeals affirmed.

The appellate court said that, with regard to land over which the United States has exclusive jurisdiction, as here, not only is the property immune from state taxation because of the supremacy of the federal government, but state laws, not adopted directly or in an implied way by the United States, are ineffective in taxing or regulating other property or persons on that enclave. Further, the court said that, unless Congress specifically waives immunity from taxation, property located on land over which the United States has exclusive jurisdiction is not taxable. The decision of the Board of Tax Appeals was reversed as unreasonable and unlawful.

Visicon, Inc. v. Tracy
Supreme Court of Ohio
September 23, 1998
(AJ/02/0.—$10)

PROPERTY TAX JOURNAL
Vol. 7 • No. 2 • June 1988

The *Property Tax Journal* (ISSN 0731-0285) is published quarterly by the International Association of Assessing Officers with editorial offices at 1313 East 60th Street, Chicago, Illinois 60637-9990.

Indexed in *PAIS Bulletin*, published by the Public Affairs Information Service, Inc., New York, New York.

Subscription rates:

One-year Subscriptions:	
Members residing in the U.S.	$25
Members not residing in the U.S.	$29
Nonmembers residing in the U.S.	$45
Nonmembers not residing in the U.S.	$49
Two-year subscriptions:	
Members residing in the U.S.	$46
Members not residing in the U.S.	$50
Nonmembers residing in the U.S.	$86
Nonmembers not residing in the U.S.	$94

Additional copies $15 (IAAO members, $12)

The Appraisal of Public Utilities and Railroads for Ad Valorem Taxation: Application of the Unit Rule

F. Gregg Dickerson

F. Gregg Dickerson is the public utility valuation manager for the Georgia Department of Revenue, Property Tax Division.

The methods of valuing public utilities and railroads for ad valorem taxation under the unit rule are continually being debated and examined both by practitioners and the courts. This article presents the theory and application of the unit rule based on an interpretation of Bonbright's The Valuation of Property. *Though published over fifty years ago, Bonbright's treatise is the last major publication to examine the legal history of the application of the unit rule in ad valorem taxation.*

Introduction

More than fifty years ago, in 1937, Bonbright published his treatise on the legal and economic theories of property valuation, *The Valuation of Property*. His work is probably most notable today for its analysis of the unit rule as it applies to the valuation of public utilities and railroads for ad valorem taxation. His work is still considered the standard in this field.

The unit rule is the method "under which the value of (or income from) property located within a specific geographical area is taken to be equal to a certain share of the value of (or income from) a larger aggregate of property, of which the former property is an integral part" (Bonbright, 1937, 633). Applied to public utility or railroad ad valorem assessments, the unit rule dictates that the assessment within a particular jurisdiction shall be based on a portion of the value of the entire operating enterprise. The term "operating" in this paper is used not only to indicate an ongoing operation but also to limit the assets, real and personal, tangible and intangible (or income derived from those assets) that are included in the unit. Operating assets are those assets necessary for the enterprise to

perform its primary function. For example, for a railroad company, only the assets necessary to provide railroad transportation services are included in the unit, not assets such as natural resource holdings or other unrelated investments.

Although no one can expect two appraisers to arrive at identical opinions of value, one might expect that, fifty years after Bonbright's treatise, the practitioners of the art of unit rule appraisals would agree on what the unit rule is and maybe even agree on the basic methods appropriate in preparing a unit rule appraisal. Unfortunately, there is no agreement on either issue. Some of the more respected practitioners of unit rule appraisals do not accept that the unit being appraised is an operating enterprise, not just a group of tangible assets. These appraisers must in turn advocate different valuation methods than appraisers who consider the unit to be an operating enterprise. Until there is agreement on what the unit being appraised is, there can be no agreement on the methods to be used in preparing such an appraisal. This paper assumes, as Bonbright concluded, that the unit is appropriately treated as an operating enterprise.

> The attempt by legislatures, assessors, and courts to solve this problem while retaining the enterprise as the unit of valuation has resulted in the development of the so-called "unit rule." Under this rule, in its more thoroughgoing form, the entire enterprise is first valued as a unit, some "fair share" of this value (perhaps after the deduction of certain asset values deemed inappropriate for allocation) being attributed to the particular state or district that is imposing the tax. The resulting figure is presumed to measure the "true value" of that portion of the corporate property which comes under the assessor's taxing power (Bonbright 1937, 633).

The remainder of this paper addresses the methods appropriate in preparing an appraisal of the unit as an operating enterprise. The other aspect of a unit rule appraisal, allocation of some "fair share" to a particular jurisdiction, is not dealt with. Aside from the fact that there is no one right method of allocation, but only reasonable methods of allocation, variations in state laws may also dictate differences in allocation methods.

In preparing a valuation of an enterprise, appraisers must always remain alert to the fact that they are indeed valuing an enterprise and not just tangible assets. Although the underlying appraisal theory is constant, application methods may vary according to the type of property being appraised. The following commentary on the approaches to value as applied to appraisal of public utilities is separated into the three traditional approaches: cost, income, and market.

Cost Approach

The cost approach is not valid for valuing an enterprise. It is valid only for valuing tangible assets. However, it should not be completely ignored.

The book value of an enterprise is a number that investors look at when contemplating investment. For rate base regulated utilities, the book value is an indication of earning power. When computed for a rate base regulated utility, the net book value should be adjusted to arrive at a rate base value. Typically, accumulated deferred income taxes and customer deposits must be subtracted from the net book value of the operating assets to derive the rate base value. The result of this calculation should not be considered a unit value indicator, but should be referred to as what it is, a rate base value.

> In all respects the relationship between the commercial value of a business and the so-called physical value of its assets is highly indirect and uncertain. Almost never does it justify an assumption that the "values" (that is, the depreciated costs) of the latter even roughly measure the value of the former (Bonbright 1937, 265).

For taxing authorities that are restricted to taxing only physical assets or that tax the physical assets and the intangible franchise or going concern value at different rates, a reproduction cost new less depreciation calculation may be useful in allocating the tangible asset value from the total enterprise value.

Income Approach

The income approach is almost universally accepted as the best approach to valuing an income producing enterprise. It is the only valid approach that does not require the appraiser to make an allocation of the operating enterprise from some larger total enterprise valuation. In most instances, it is the value indicators from the income approach that should be given the most credence in arriving at a final estimate of the value of an operating enterprise. Perhaps because it is so important in determining the final value estimate, the income approach has generated the most controversy among unit rule appraisers.

The application of any income approach method requires the appraiser to estimate two items: (1) the amount of expected income, or series of incomes, to be derived from ownership of the property; and (2) a rate, or factor, to convert that income, or series of incomes, into an estimate of value. The process of converting income into an estimation of value is called capitalization. Both direct and yield capitalization methods have been developed for use in unit rule appraisals.

Direct Capitalization

Theory. Direct capitalization methods are a process by which an estimate of a single year's income expectancy is converted into an indication of

method; (2) a cost influence method; and (3) deduction of the nonoperating assets at book value.

Correlation of Value Indicators

After determining value indicators using the various approaches and methods within each approach, the task of correlating the several indicators into one final estimate of value for the operating enterprise remains. The correlation process requires that the relative strengths and weaknesses of each method be examined.

The direct capitalization method requires two estimates, the first future income and the capitalization rate. The underlying data for each item should be analyzed for consistency. The most reliable estimate for income would come from historic incomes with a very definite pattern or trend. The most reliable estimate for the capitalization rate would come from a capitalization study with a very narrow range of rate indicators for the industry group or subgroup. The principal criticism of direct capitalization is in the derivation of the capitalization rate. Critics argue that none of the companies traded in the stock market is sufficiently comparable to the operating enterprise being appraised to use the data to indicate the appropriate capitalization rate. Although the argument of comparability may have some validity, it does not make the method invalid, but can affect the relative weight to be given to its value indicator. The companies used to indicate the rate should be the most comparable available. The primary elements of comparability to be considered are profitability, risks, and growth opportunities. The same critics usually use a cost of capital, or discount rate, to capitalize net operating income. The use of a discount rate to capitalize an earnings estimate is improper without market evidence that the present value of growth opportunities for the enterprise is zero and the earnings estimate is the average future earnings the enterprise could generate under a no-growth policy (Brealey & Myers 1984, 58).

The yield capitalization method requires three estimates, the first future free cash flow, an expected pattern for all subsequent free cash flows, and the capitalization rate. The underlying data for the first future cash flow and the capitalization rate should be analyzed in the same manner as in the direct capitalization method. The expected pattern for subsequent free cash flows will usually be the least supported and most criticized estimate in this method. Although the magnitude of the estimated rate of change may be criticized, there is no validity to the argument that growth through the acquisition of new assets cannot be considered. That argument is valid only when valuing tangible assets, not when valuing an enterprise. It must be remembered that the free cash flows being capitalized do not include the cash that will be used to purchase new assets. It is important that the growth rate reflect only the growth expected through reinvestment of earnings and not through the investment of new capital.

The market, or stock and debt, approach's main strength is its close tie to the marketplace. Its weakness is in the number of estimates that have to be made to arrive at a final indicator of value. Usually, the value of the common stock and the value of the current liabilities do not come directly from market transactions involving the specific stock or liability being estimated. The allocation of the operating value out of the total value is also a critical estimate and can vary greatly according to the method used. It is the allocation that receives the most criticism. Usually, the best that can be done is to look at several allocation methods and select an allocation that is reasonable.

In preparing all estimates of value, it is advisable to determine a range of possible answers for each estimate and examine the effect on the corresponding value indicator. Naturally, the range for each estimate made will depend on the consistency of the data. The magnitude of the range is one indication of the relative reliability of the estimate.

Ideally, the final estimate of the value of the operating enterprise will fall within the ranges of each individual method. Although a point estimate of the final value is usually required, an indication of a range for the final value is recommended.

Summary

This paper is based on the assumption that the unit being appraised in a unit rule appraisal is an operating enterprise, an assumption well supported by the standard text for this field, Bonbright's *The Valuation of Property*. Even with that assumption, there are debatable issues on the correct application and relative merits of the various approaches to value presented. Appraisers involved in this field must examine the principles and theories involved without bias and without regard to the possible consequences for the bottom line of their appraisals.

References

American Institute of Real Estate Appraisers. 1983. *The appraisal of real estate*. 8th ed. Chicago.

Bonbright, James C. 1937. *The valuation of property*. New York: McGraw Hill. The Michie Company.

Brealey, Richard, and Stewart Myers. 1984. *Principles of corporate finance*. 2d ed. New York: McGraw-Hill, Inc.

Uniform Standards of Professional Appraisal Practice of The Appraisal Foundation1

The International Association of Assessing Officers has adopted standards 1 through 10 of the Uniform Standards of Professional Appraisal Practice.

Standard 1. In developing a real property appraisal, an appraiser must be aware of, understand, and correctly employ those recognized methods and techniques that are necessary to produce a credible appraisal.

Standard 2. In reporting the results of a real property appraisal, an appraiser must communicate each analysis, opinion, and conclusion in a manner that is not misleading.

Standard 3. In reviewing an appraisal and reporting the results of that review, an appraiser must form an opinion as to the adequacy and appropriateness of the report being reviewed and must clearly disclose the nature of the review process undertaken.

Standard 4. In performing real estate or real property consulting services, an appraiser must be aware of, understand, and correctly employ those recognized methods and techniques that are necessary to produce a credible result.

Standard 5. In reporting the results of a real estate or real property consulting service, an analyst must communicate each analysis, opinion, and conclusion in a manner that is not misleading.

Standard 6. In developing a mass appraisal, an appraiser must be aware of, understand, and correctly employ those generally accepted methods and techniques necessary to produce and communicate credible appraisals.

Standard 7. In developing a personal property appraisal, an appraiser must be aware of, understand, and correctly employ those recognized methods and techniques that are necessary to produce a credible appraisal.

Standard 8. In reporting the results of a personal property appraisal, an appraiser must communicate each analysis, opinion, and conclusion in a manner that is not misleading.

Standard 9. In developing a business or intangible asset appraisal, an appraiser must be aware of, understand, and correctly employ those recognized methods and procedures that are necessary to produce a credible appraisal.

Standard 10. In reporting the results of a business or intangible asset appraisal, an appraiser must communicate each analysis, opinion, and conclusion in a manner that is not misleading

1 The Appraisal Foundation. 2003. *Uniform Standards of Professional Appraisal Practice.* Chicago, IL: The Appraisal Foundation. NOTE: Pages viii – xxii were reprinted with permission from The Appraisal Foundation.

International Association of Assessing Officers
Code of Ethics and
Standards of Professional Conduct

Preamble

The purposes of this *Code of Ethics and Standards of Professional Conduct* are to establish professional guidelines for assessing officials and all members of the International Association of Assessing Officers (IAAO) and set forth standards by which to judge an IAAO member whose conduct is in question.

Members of IAAO shall conduct themselves in a manner that will reflect favorably upon themselves, the appraisal profession, the property tax system, and IAAO, and avoid any action that could discredit themselves or these entities.

Definitions

As used in this *Code*:

Appraisal refers to an opinion of the value of specified interests in, or aspects of, identified real estate or personal property.

Appraisal assignment refers to those appraisal services in which the appraiser is employed or retained to act (or would be perceived by third parties or the public as acting) as a third disinterested party in rendering an unbiased estimate or opinion of the value of specified interests in or aspects of identified real estate or personal property. (Property tax consultants are not usually considered to be acting as disinterested third parties; therefore, property tax consulting assignments are not considered to be appraisal assignments within the meaning of the *Code*, unless an appraisal as defined by the *Uniform Standards of Professional Appraisal Practice* is made and expressed.)

Appraisal report means any communication, written or oral, of an opinion as to the value of specified interests in or aspects of identified real or personal property. In this context, the purpose of the appraisal of real estate is immaterial; therefore, valuation reports, real estate counseling reports, real estate tax counseling, real estate offering report memoranda, mortgage banking offers, highest and best use studies, market demand and economic feasibility studies, and all other reports communicating an opinion of value are appraisal reports, regardless of their title. The same is true with identified personal property; therefore, all valuation reports, financial statements, stockholders' equity statements, highest and best studies, supply and demand studies, and all reports communicating an appraisal opinion are appraisal reports, regardless of their title.

Assessment-related assignment refers to the preparation of the assessed value of a single parcel or of an item of real or personal property, the total assessed value of all properties within the boundaries of the tax jurisdiction, or the assessed value of any group of properties. Although appraisal is an important aspect of ad valorem tax administration, other important aspects, including satisfying a variety of information needs, result in appraiser-client relationships that are unique.

A **file memorandum** is a record in the file of the appraiser setting forth the data, reasoning, and conclusions upon which an appraisal is based. Several of the *Code's* Canons and Ethical Rules require either the preparation of a written appraisal report containing data, reasoning, and conclusions, or the inclusion of a file

compliance with the *Uniform Standards of Professional Appraisal Practice*; and appraisal conclusions.

Personal property means identifiable, movable, and tangible and intangible items or objects that are not classified as real estate.

perform its primary function. For example, for a railroad company, only the assets necessary to provide railroad transportation services are included in the unit, not assets such as natural resource holdings or other unrelated investments.

Although no one can expect two appraisers to arrive at identical opinions of value, one might expect that, fifty years after Bonbright's treatise, the practitioners of the art of unit rule appraisals would agree on what the unit rule is and maybe even agree on the basic methods appropriate in preparing a unit rule appraisal. Unfortunately, there is no agreement on either issue. Some of the more respected practitioners of unit rule appraisals do not accept that the unit being appraised is an operating enterprise, not just a group of tangible assets. These appraisers must in turn advocate different valuation methods than appraisers who consider the unit to be an operating enterprise. Until there is agreement on what the unit being appraised is, there can be no agreement on the methods to be used in preparing such an appraisal. This paper assumes, as Bonbright concluded, that the unit is appropriately treated as an operating enterprise.

> The attempt by legislatures, assessors, and courts to solve this problem while retaining the enterprise as the unit of valuation has resulted in the development of the so-called "unit rule." Under this rule, in its more thoroughgoing form, the entire enterprise is first valued as a unit, some "fair share" of this value (perhaps after the deduction of certain asset values deemed inappropriate for allocation) being attributed to the particular state or district that is imposing the tax. The resulting figure is presumed to measure the "true value" of that portion of the corporate property which comes under the assessor's taxing power (Bonbright 1937, 633).

The remainder of this paper addresses the methods appropriate in preparing an appraisal of the unit as an operating enterprise. The other aspect of a unit rule appraisal, allocation of some "fair share" to a particular jurisdiction, is not dealt with. Aside from the fact that there is no one right method of allocation, but only reasonable methods of allocation, variations in state laws may also dictate differences in allocation methods.

In preparing a valuation of an enterprise, appraisers must always remain alert to the fact that they are indeed valuing an enterprise and not just tangible assets. Although the underlying appraisal theory is constant, application methods may vary according to the type of property being appraised. The following commentary on the approaches to value as applied to appraisal of public utilities is separated into the three traditional approaches: cost, income, and market.

Cost Approach

The cost approach is not valid for valuing an enterprise. It is valid only for valuing tangible assets. However, it should not be completely ignored.

The book value of an enterprise is a number that investors look at when contemplating investment. For rate base regulated utilities, the book value is an indication of earning power. When computed for a rate base regulated utility, the net book value should be adjusted to arrive at a rate base value. Typically, accumulated deferred income taxes and customer deposits must be subtracted from the net book value of the operating assets to derive the rate base value. The result of this calculation should not be considered a unit value indicator, but should be referred to as what it is, a rate base value.

> In all respects the relationship between the commercial value of a business and the so-called physical value of its assets is highly indirect and uncertain. Almost never does it justify an assumption that the "values" [that is, the depreciated costs] of the latter even roughly measure the value of the former (Bonbright 1937, 265).

For taxing authorities that are restricted to taxing only physical assets or that tax the physical assets and the intangible franchise or going concern value at different rates, a reproduction cost new less depreciation calculation may be useful in allocating the tangible asset value from the total enterprise value.

Income Approach

The income approach is almost universally accepted as the best approach to valuing an income producing enterprise. It is the only valid approach that does not require the appraiser to make an allocation of the operating enterprise from some larger total enterprise valuation. In most instances, it is the value indicators from the income approach that should be given the most credence in arriving at a final estimate of the value of an operating enterprise. Perhaps because it is so important in determining the final value estimate, the income approach has generated the most controversy among unit rule appraisers.

The application of any income approach method requires the appraiser to estimate two items: (1) the amount of expected income, or series of incomes, to be derived from ownership of the property; and (2) a rate, or factor, to convert that income, or series of incomes, into an estimate of value. The process of converting income into an estimation of value is called capitalization. Both direct and yield capitalization methods have been developed for use in unit rule appraisals.

Direct Capitalization

Theory. Direct capitalization methods are a process by which an estimate of a single year's income expectancy is converted into an indication of

method; (2) a cost influence method; and (3) deduction of the nonoperating assets at book value.

Correlation of Value Indicators

After determining value indicators using the various approaches and methods within each approach, the task of correlating the several indicators into one final estimate of value for the operating enterprise remains. The correlation process requires that the relative strengths and weaknesses of each method be examined.

The direct capitalization method requires two estimates, the first future income and the capitalization rate. The underlying data for each item should be analyzed for consistency. The most reliable estimate for income would come from historic incomes with a very definite pattern or trend. The most reliable estimate for the capitalization rate would come from a capitalization study with a very narrow range of rate indicators for the industry group or subgroup. The principal criticism of direct capitalization is in the derivation of the capitalization rate. Critics argue that none of the companies traded in the stock market is sufficiently comparable to the operating enterprise being appraised to use the data to indicate the appropriate capitalization rate. Although the argument of comparability may have some validity, it does not make the method invalid, but can affect the relative weight to be given to its value indicator. The companies used to indicate the rate should be the most comparable available. The primary elements of comparability to be considered are profitability, risks, and growth opportunities. The same critics usually use a cost of capital, or discount rate, to capitalize net operating income. The use of a discount rate to capitalize an earnings estimate is improper without market evidence that the present value of growth opportunities for the enterprise is zero and the earnings estimate is the average future earnings the enterprise could generate under a no-growth policy (Brealey & Myers 1984, 58).

The yield capitalization method requires three estimates, the first future free cash flow, an expected pattern for all subsequent free cash flows, and the capitalization rate. The underlying data for the first future cash flow and the capitalization rate should be analyzed in the same manner as in the direct capitalization method. The expected pattern for subsequent free cash flows will usually be the least supported and most criticized estimate in this method. Although the magnitude of the estimated rate of change may be criticized, there is no validity to the argument that growth through the acquisition of new assets cannot be considered. That argument is valid only when valuing tangible assets, not when valuing an enterprise. It must be remembered that the free cash flows being capitalized do not include the cash that will be used to purchase new assets. It is important that the growth rate reflect only the growth expected through reinvestment of earnings and not through the investment of new capital.

The market, or stock and debt, approach's main strength is its close tie to the marketplace. Its weakness is in the number of estimates that have to be made to arrive at a final indicator of value. Usually, the value of the common stock and the value of the current liabilities do not come directly from market transactions involving the specific stock or liability being estimated. The allocation of the operating value out of the total value is also a critical estimate and can vary greatly according to the method used. It is the allocation that receives the most criticism. Usually, the best that can be done is to look at several allocation methods and select an allocation that is reasonable.

In preparing all estimates of value, it is advisable to determine a range of possible answers for each estimate and examine the effect on the corresponding value indicator. Naturally, the range for each estimate made will depend on the consistency of the data. The magnitude of the range is one indication of the relative reliability of the estimate.

Ideally, the final estimate of the value of the operating enterprise will fall within the ranges of each individual method. Although a point estimate of the final value is usually required, an indication of a range for the final value is recommended.

Summary

This paper is based on the assumption that the unit being appraised in a unit rule appraisal is an operating enterprise, an assumption well supported by the standard text for this field, Bonbright's *The Valuation of Property*. Even with that assumption, there are debatable issues on the correct application and relative merits of the various approaches to value presented. Appraisers involved in this field must examine the principles and theories involved without bias and without regard to the possible consequences for the bottom line of their appraisals.

References

American Institute of Real Estate Appraisers. 1983. *The appraisal of real estate*. 8th ed. Chicago.

Bonbright, James C. 1937. *The valuation of property*. New York: McGraw Hill. The Michie Company.

Brealey, Richard, and Stewart Myers. 1984. *Principles of corporate finance*, 2d ed. New York: McGraw-Hill, Inc.

PROPERTY TAX JOURNAL
Vol. 7 • No. 2 • June 1988

The *Property Tax Journal* (ISSN 0731-0285) is published quarterly by the International Association of Assessing Officers with editorial offices at 1313 East 60th Street, Chicago, Illinois 60637-9990. The statements made or views expressed in the *Property Tax Journal* are those of the authors and do not necessarily reflect the viewpoint or policies of the International Association of Assessing Officers.

Indexed in *PAIS Bulletin*, published by the Public Affairs Information Service, Inc., New York, New York.

Subscription rates:

One-year Subscriptions:	
Members residing in the U.S.	$25
Members not residing in the U.S.	$29
Nonmembers residing in the U.S.	$45
Nonmembers not residing in the U.S.	$49
Two-year subscriptions:	
Members residing in the U.S.	$46
Members not residing in the U.S.	$50
Nonmembers residing in the U.S.	$86
Nonmembers not residing in the U.S.	$94

Additional copies $15 (IAAO members, $12)

The Appraisal of Public Utilities and Railroads for Ad Valorem Taxation: Application of the Unit Rule

F. Gregg Dickerson

F. Gregg Dickerson is the public utility valuation manager for the Georgia Department of Revenue, Property Tax Division.

The methods of valuing public utilities and railroads for ad valorem taxation under the unit rule are continually being debated and examined both by practitioners and the courts. This article presents the theory and application of the unit rule based on an interpretation of Bonbright's The Valuation of Property. *Though published over fifty years ago, Bonbright's treatise is the last major publication to examine the legal history of the application of the unit rule in ad valorem taxation.*

Introduction

More than fifty years ago, in 1937, Bonbright published his treatise on the legal and economic theories of property valuation, *The Valuation of Property*. His work is probably most notable today for its analysis of the unit rule as it applies to the valuation of public utilities and railroads for ad valorem taxation. His work is still considered the standard in this field.

The unit rule is the method "under which the value of (or income from) property located within a specific geographical area is taken to be equal to a certain share of the value of (or income from) a larger aggregate of property, of which the former property is an integral part" (Bonbright, 1937, 633). Applied to public utility or railroad ad valorem assessments, the unit rule dictates that the assessment within a particular jurisdiction shall be based on a portion of the value of the entire operating enterprise. The term "operating" in this paper is used not only to indicate an ongoing operation but also to limit the assets, real and personal, tangible and intangible (or income derived from those assets) that are included in the unit. Operating assets are those assets necessary for the enterprise to

Specialty property should not be valued using comparable sales approach

A valuation of a property categorized as a specialty would not be based on comparable sales since, by definition, there is no market for the property, according to the Court of Appeals of New York.

Niagara Mohawk Power Corporation, a public utility in New York, sought review of the tax assessments for approximately 23 parcels it owned during the years 1990 through 1993. While Mohawk conceded that most of the properties were specialties (that is, uniquely adapted to the business conducted on it and not convertible to other uses without the expenditures of substantial sums of money), it took issue with such categorization for four of those properties. The trial court agreed with Mohawk but was reversed by the Appellate Division, which concluded that all the parcels were specialty properties that could not be valued by using the comparable sales method.

The appellate court said that the reproduction cost less depreciation approach was the appropriate methodology to value specialty property, but should be used only in those limited instances in which no other method of valuation will yield a legally and economically realistic value for the property. The court said that there was credible evidence that the four parcels at issue here were being used primarily for the storage of electrical equipment and were no longer operational. Accordingly, the court concluded that Mohawk had provided substantial evidence that a credible dispute existed about the proper characterization of its properties and, consequently, the validity of the valuation methodology. The case was returned for further proceedings.

Niagara Mohawk Power v. Town of Geddes
Court of Appeals of New York
July 7, 1998
(AJ/01/0.—$10)

State may not tax hotel property on federal land

The State of Ohio has no jurisdiction to assess a real property tax on a hotel operated at an air force base on land leased from the U.S. government, according to the Supreme Court of Ohio.

The Hope Hotel & Conference Center is located on the Wright-Patterson Air Force Base in Ohio. The land on which the hotel is located was leased from the U.S. Air Force by H. A. I. Inc. and Vantage Group, Inc. That lease was subsequently assigned to Visicon, Inc. The lease was for the sole purpose of erecting a 250-room visitors quarter and conference center, primarily for use by military and civilian personnel traveling in support of air force missions. The United States, as owner, was sent a tax bill for the year 1994 on only the building. Visicon filed an application for exemption. The tax commissioner upheld a use tax assessment against Visicon and denied its application for exemption. The Board of Tax Appeals affirmed.

The appellate court said that, with regard to land over which the United States has exclusive jurisdiction, as here, not only is the property immune from state taxation because of the supremacy of the federal government, but state laws, not adopted directly or in an implied way by the United States, are ineffective in taxing or regulating other property or persons on that enclave. Further, the court said that, unless Congress specifically waives immunity from taxation, property located on land over which the United States has exclusive jurisdiction is not taxable. The decision of the Board of Tax Appeals was reversed as unreasonable and unlawful.

Visicon, Inc. v. Tracy
Supreme Court of Ohio
September 23, 1998
(AJ/02/0.—$10)

International Association of Assessing Officers
Code of Ethics and
Standards of Professional Conduct

Preamble
The purposes of this *Code of Ethics and Standards of Professional Conduct* are to establish professional guidelines for assessing officials and all members of the International Association of Assessing Officers (IAAO) and set forth standards by which to judge an IAAO member whose conduct is in question.

Members of IAAO shall conduct themselves in a manner that will reflect favorably upon themselves, the appraisal profession, the property tax system, and IAAO, and avoid any action that could discredit themselves or these entities.

Definitions
As used in this *Code*:

Appraisal refers to an opinion of the value of specified interests in, or aspects of, identified real estate or personal property.

Appraisal assignment refers to those appraisal services in which the appraiser is employed or retained to act (or would be perceived by third parties or the public as acting) as a third disinterested party in rendering an unbiased estimate or opinion of the value of specified interests in or aspects of identified real estate or personal property. (Property tax consultants are not usually considered to be acting as disinterested third parties; therefore, property tax consulting assignments are not considered to be appraisal assignments within the meaning of the *Code*, unless an appraisal as defined by the *Uniform Standards of Professional Appraisal Practice* is made and expressed.)

Appraisal report means any communication, written or oral, of an opinion as to the value of specified interests in or aspects of identified real or personal property. In this context, the purpose of the appraisal of real estate is immaterial; therefore, valuation reports, real estate counseling reports, real estate tax counseling, real estate offering report memoranda, mortgage banking offers, highest and best use studies, market demand and economic feasibility studies, and all other reports communicating an opinion of value are appraisal reports, regardless of their title. The same is true with identified personal property; therefore, all valuation reports, financial statements, stockholders' equity statements, highest and best studies, supply and demand studies, and all reports communicating an appraisal opinion are appraisal reports, regardless of their title.

Assessment-related assignment refers to the preparation of the assessed value of a single parcel or of an item of real or personal property, the total assessed value of all properties within the boundaries of the tax jurisdiction, or the assessed value of any group of properties. Although appraisal is an important aspect of ad valorem tax administration, other important aspects, including satisfying a variety of information needs, result in appraiser-client relationships that are unique.

A **file memorandum** is a record in the file of the appraiser setting forth the data, reasoning, and conclusions upon which an appraisal is based. Several of the *Code's* Canons and Ethical Rules require either the preparation of a written appraisal report containing data, reasoning, and conclusions, or the inclusion of a file memorandum in the appraiser's file. The file memorandum shall include a statement, outline or reference form, with work sheets, data sheets, and related material, containing sufficient information to demonstrate substantial compliance with the *Uniform Standards of Professional Appraisal Practice*. In most cases sufficient information should include: identification/brief description of real estate or personal property; real or personal property interest being appraised; purpose of the appraisal; definition of value being estimated; effective date of the appraisal; scope of the appraisal; all assumptions and limiting conditions; information considered, procedures followed, and reasoning in support of the analyses, opinion, and conclusion of any of the valuation approaches; any additional information required to demonstrate compliance with the *Uniform Standards of Professional Appraisal Practice*; and appraisal conclusions.

Personal property means identifiable, movable, and tangible and intangible items or objects that are not classified as real estate.

1. identifying the property to be appraised
2. determining the property rights to be appraised
3. defining the purpose and function of the appraisal
4. specifying the date of appraisal
5. defining the type of value

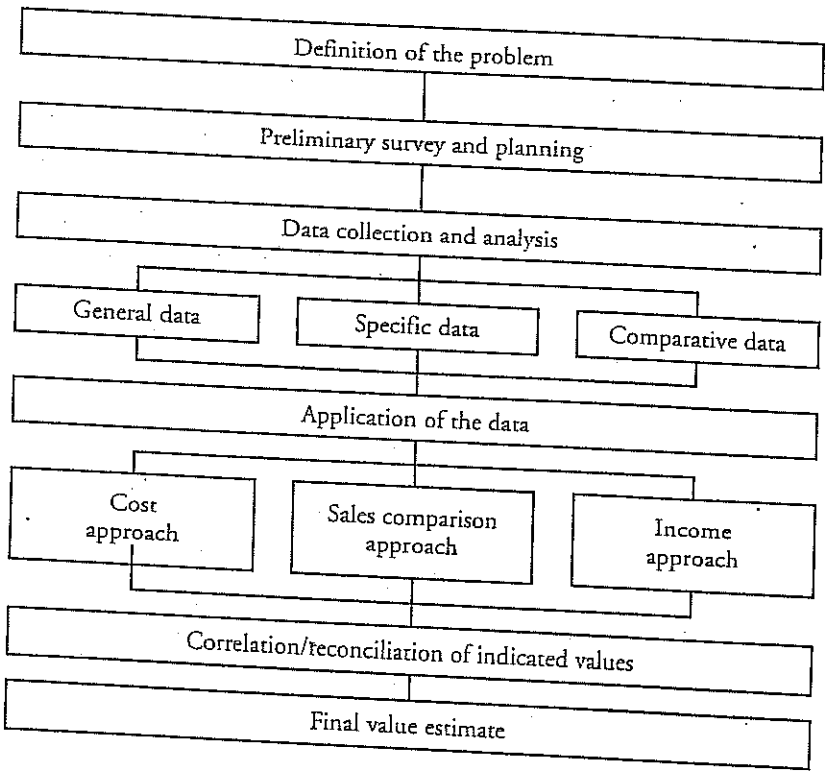
Identifying the Property

There are several ways to identify a property:

- street address
- legal description
- assessor's parcel identifier

Legal descriptions appear in several forms:

Figure 3.1
The Appraisal Process



SECTION VI

THE APPRAISER

MICHAEL W. O'LEARY
196 Old River Rd. 8E East
Lincoln, RI 02865-1114
(401-334-8554)

SUMMARY

Certified Rhode Island Assessor for Cumberland. Effective communicator with 16 years of management expertise. Highly developed interpersonal skills and the ability to motivate others. Possesses the necessary vision to implement productive systems thereby increasing profitability and total client satisfaction. Known as a capable problem solver.

PROFESSIONAL

TAX ASSESSOR FOR THE TOWN OF CUMBERLAND
Cumberland, RI (15,500 parcels)

2001 – Present

Implemented a new CAMA System and new values for the 2001 state mandated Statistical Update.
Created a new Tangible file in CAMA to calculate values.
Closely regulates the filings of "all" exemption criteria.
Reduce "lost tax dollars" in all areas of taxable properties.
Currently creating a **website** to reduce counter and phone traffic.
Entering the **chain of title** in CAMA for customer research.
Introducing use of a **field computer tablet** increasing field productivity.
Reducing clerical **duplication and manual procedures** for overall cost effective clerical procedures.

1990-2001

SUPERVISOR (East Coast)
Cole-Layer-Trumble Company, Dayton, Ohio, the oldest and largest mass appraisal firm in the United States.

Accomplishments

- Appointed chief hearing officer for informal appeals.
- Court appearances supporting final values.
- Data conversions and market modeling.
- Unique data collection techniques for complicated properties.
- Appraisals for utility properties based on income analysis.

<u>RHODE ISLAND</u> – 1999-2000
Providence, RI – all Commercial/Industrial/Utility values including Downtown (Capital Center)
Smithfield, W. Warwick and Pawtucket Commercial analysis.

CONNECTICUT - 1998-1999
Greenwich, Conn. – Private Country Clubs and marina's.
Hartford, Watertown, Thomaston, Munroe & Willington
Commercial review & apartment complex analysis.

NORTH CAROLINA – **1996-1997**
Halifax County, North Carolina – Project Supervisor
Allegheny, Wade, Wilson and Pasquatank Counties;
Commercial, Residential & Utility final values.

PENNSYLVANIA – 1994-1996
Montgomery, Chester and Delaware Counties - residential and commercial review. AlsoUtility output analysis and values. Montgomery County has 265,000 parcels.

VERMONT – 1993-1994
Burlington and Colchester, Vermont valuation of lakefront properties, downtown & contaminate Shell Oil Site.

NEW YORK – 1990-1992
Brookhaven, Huntington and Nassau Counties, Long Island, New York residential and commercial data collection and Fire Island ocean front properties final values.

MAINE – 1989-1990
Portland, Maine group supervision of data collection and development of quality control procedures and field training exercises. Valuation of apartment complexes and data collection of International Paper Company Mill in Westbrook, Maine.

EDUCATION:

Bachelor of Science Degree from the School of Business Administration at the University of Maine at Orono Majoring in Marketing and Management

IAAO UTILITY SEMINARS – 2003, 2002, 2001, 2000.
DESIGNATION CANDIDATE.
SITE ANALYSIS AND APPRAISAL OF LAND
COST APPROACH TO VALUE
INCOME APPROACH TO VALUE
ADVANCED INCOME APPROACH
MARKET DATA APPROACH TO VALUE
MASS APPRAISAL OF RESIDENTIAL PROPERTIES

APPRAISAL INSTITUTE – DESIGNATION CANDIDATE
BASIC INCOME CAPITALIZATION
ADVANCED INCOME CAPITALIZATION
RESIDENTIAL CASE STUDY
UTILITY INCOME VALUE ANALYSIS
SUPPORTING CAPITALIZATION RATES

LINCOLN INSTITUTE FOR LAND POLICY
IMPLICATIONS OF GIS ON THE VALUATION PROCESS
VALUATION OF LAND WITH CONSERVATION EASEMENTS
VALUATION CASE: PROTECTING LAND WITH CONSER. EASE.

RHODE ISLAND APPRAISAL LICENSING & CERT. COURSES
SALES COMPARISON APPROACH
COST & INCOME APPROACHS
APPRAISAL STANDARDS & ETHICS
INCOME CAPITALIZATION METHODS
URAR (FNMA) APPRAISAL REPORT

EDUCATION: 1992 – 2001

TEMPLE UNIV. R.E. INSTITUTE
RESIDENTIAL PROPERTY APPRAISING
APPRAISAL OF INCOME PRODUCING PROPERTY
UTILITY APPRAISAL OVERVIEW

NATIONAL ASS. INDEP. FEE APPRAISERS (NAIFA)
MARKET DATA ANALYSIS OF RES. R.E. APPRAISING
PROFESSIONAL STANDARDS OF PRACTICE
PRINCIPALS OF UTILITY APPRAISING
TECHNIQUES TO INCOME PROPERTY APPRAISING
VALUATION OF PUBLIC UTILITIES BASED ON OUTPUT
CASE STUDY OF REGULATION OF PUBLIC UTILITIES

STATE OF PENNSYLVANIA
APPRAISING LANDFILLS
SECTION EIGHT HOUSING
GAS & ELECTRIC POWER VALUATION (REGULATED)
VALUATION OF QUARRIES
CEMETERIES FOR PROFIT
EMINENT DOMAIN
NUCLEAR POWER OUTPUT VALUATION TECHNIQUES

LICENSED AS A COMMERCIAL/INDUSTRIAL/UTILITY APPRAISER FOR AD VALORUM (TAX) VALUES:
NEW YORK, PENNSYLVANIA, NO. CAROLINA, VERMONT, MAINE AND CONNECTICUT

REALTOR

National Association of REALTORS
Residential Appraisal Education Program
Course VII: Appraisal URAR (FNMA)
Single Family Appraisal Report

This certificate is hereby awarded to

Michael W. O'Leary

as evidence of successful completion of fifteen hours of course work and written examination as conducted and sponsored by the Rhode Island Association of REALTORS

March 8, 2003

Education Director

REALTOR

National Association of REALTORS
Residential Appraisal Education Program

COURSE VI
Elementary Income

This certificate is hereby awarded to

Michael O'Leary

as evidence of successful completion of fifteen hours of course work and written examination as conducted and sponsored by the Rhode Island Association of REALTORS®

September 28, 2002

Education Director

REALTOR

National Association of REALTORS
Residential Appraisal Education Program

COURSE V
Appraisal Standards & Ethics
USPAP

This certificate is hereby awarded to

Michael O'Leary

as evidence of successful completion of fifteen hours of course work and written examination as conducted and sponsored by the Rhode Island Association of REALTORS®

June15, 2002

Education Director

REALTOR

National Association of REALTORS
Residential Appraisal Education Program

COURSE IV
Cost & Income Approaches

This certificate is hereby awarded to

Michael O'Leary

as evidence of successful completion of fifteen hours of course work and written examination as conducted and sponsored by the Rhode Island Association of REALTORS®

August 21, 2002

Education Director

REALTOR

National Association of REALTORS
Residential Appraisal Education Program
Course III:
The Sales Comparison Approach

This certificate is hereby awarded to

Michael W. O'Leary

as evidence of successful completion of fifteen hours of course work and written examination as conducted and sponsored by the Rhode Island Association of REALTORS

March 20,2003

Education Director

Appraisal Institute®
Professionals Providing Real Estate Solutions

Rhode Island Chapter

2 Indian Rd.
Riverside, RI 02915-5102
T 401-433-0985
F 401-433-5865
www.riappraiser.com

EDUCATION VOUCHER FORM
for
APPRAISAL CONTINUING EDUCATION CREDITS

Title of Program : COURSE 420 – BUSINESS PRACTICES AND ETHICS

Program Date : September 18, 2003
Program Location : Comfort Inn, 2 George Street, Pawtucket, RI

Program Sponsor :RHODE ISLAND CHAPTER OF THE APPRAISAL INSTITUTE

Instructional Hours : 7
Exam Hours : 1
Total Credit Hours : 8

Name of Instructor : John J. Cena, SRA

Brief Description : Participant learns how the organization's Code of Professional Ethics can empower one to practice their profession in accordance with the Appraisal Institute's guiding values and principles, and why this is important as a practicing appraiser.

Name of Applicant :
Address of Applicant :

Michael O'Leary
Town of Cumberland
P.O. Box 7
Cumberland RI 02864

I certify that I have completed the above-described activity, I am aware that any misrepresentations by me may become subject to disciplinary action.

Michael O'Leary
Signature of Applicant

Date: 9/22/03

The above names applicant did attend course named above for the hours indicated.

RHODE ISLAND CHAPTER OF THE APPRAISAL INSTITUTE

By: Elsie S. John
Elsie S. John, Executive Secretary

Appraisal Institute™
Professionals Providing Real Estate Solutions

Rhode Island Chapter

2 Indian Rd.
Riverside, RI 02915-5102
T 401-433-6985
F 401-433-5665
www.riappraiser.com

EDUCATION VOUCHER FORM
for
APPRAISAL CONTINUING EDUCATION CREDITS

Title of Program : SUBDIVISION ANALYSIS

Program Date : May 15, 2003
Program Location : Comfort Inn
2 George Street, Pawtucket

Program Sponsor :RHODE ISLAND CHAPTER OF THE APPRAISAL INSTITUTE

Instructional Hours : 7
Exam Hours : 0
Total Credit Hours : 7

Name of Instructor : Vincent M. Dowling, MAI, SRA

Brief Description : Participants gain new insights on how to improve subdivision analysis techniques and application. Subdivision assignments require a comprehensive highest and best use analysis and the proper application of all three approaches to value. Participants learn how USPAP applies to the valuation of a subdivision.

Name of Applicant :
Address of Applicant :

Michael O'Leary
Town of Cumberland
P.O. Box 7
Cumberland RI 02864

I certify that I have completed the above-described activity, I am aware that any misrepresentations by me may become subject to disciplinary action.

Signature of Applicant _____ Date: _____

The above names applicant did attend course named above for the hours indicated.

RHODE ISLAND CHAPTER OF THE APPRAISAL INSTITUTE

By: _____
Elsie S. John, Executive Secretary

Appraisal Institute™
Professionals Providing Real Estate Solutions

550 W. Van Buren St.
Suite 1000
Chicago, IL 60607

T 312-335-4100
F 312-335-4400
www.appraisalinstitute.org

Official Academic Record for Appraisers

This document certifies that

Michael W. O'Leary
45 Broad Street, 1st floor
P.O. Box 7
Cumberland, RI 02864-0007

has successfully completed the Appraisal Institute's course II420N - Business Practices and Ethics at Comfort Inn in Pawtucket, RI on 09/18/2003 - 09/18/2003.

Classroom hours: 7.0

Exam hours: 1.0

Attendance was 90% or better with a passing grade

Verified by Larisa Phillips on 09/25/2003.

Larisa Phillips
State Certification/Licensing

TA

INTERNATIONAL ASSOCIATION OF ASSESSING OFFICERS
130 East Randolph Street, Suite 850
Chicago, IL 60601
Tel. 312/819-6100
Fax 312/819-6149
www.iaao.org

2003 PUBLIC UTILITY SEMINAR

March 27-29, 2003
Tampa, Florida

Table of Contents

Seminar Program

1. Business Valuation in the Real World
   Gregg Dickerson
2. Railroad Valuation in the 21st Century
   Peter Crossett & Mike Zeigler
3. Changes in Telecommunications Technologies and the Implication for Valuation
   Doug Mo & Stacey Sprinkle
4. The Valuation of Electric Companies – Past, Present and Future
   Judith Ross
5. Legal Update
   Loren Levy & Charles Daw
6. Florida Round Table Discussion – Unit Valuation on the Local Level
   Jim Pence, Moderator
7. Telecommunication Issues and the Cost of Capital
   Toby Reese
8. Auditing a Public Utility
   Vergie Booty
9. The Effect of Recent GAAP Pronouncements on Property Tax Assessments
   Robert Reilly & Frank Carr
10. Utah's Rule Governing Utility Appraisals
    Marc Johnson
11. Capitalization Rates – Is Stock Price King?
    William Mack
12. Valuing Telecommunications using the Cost Approach
    Stephen Barreca
13. Allocation – Room for Improvement?
    Michael Green
14. The Valuation of Natural Gas Pipeline Companies
    Jeff Amburgey
15. Round Table Discussion – Utility Valuation Issues in Florida
    Jim Pence, Moderator

IAAO 2003 Public Utility Seminar
Seminar Agenda

Thursday March 27, 2003

7:00 – 8:30	Registration and Continental Breakfast
8:30 – 9:00	Welcome & Introductions *Paul A. Welcome, CAE, IAAO President* *William F Mack, Chair of Public Utility* *Jeff Amburgey, Vice Chair of Public Utility Section*
9:00 – 9:30	Business Valuation in the Real World, *Gregg Dickerson*
9:30 - 10:30	Railroad Valuation in the 21st Century, *Peter Crossett & Mike Zeigler*
10:30 - 10:45	Break
10:45 – 12:00	Changes in Telecommunications Technologies and the Implications for Valuation, *Doug Mo and Stacey Sprinkle*
12:00 – 1:30	Lunch
1:30 – 2:15	The Valuation of Electric Companies – Past, Present and Future, *Judith Ross*
2:15 – 3:15	Legal Update, *Loren Levy and C.A Daw*
3:15 – 3:30	Break
3:30 – 5:00	Florida Round Table Discussion – Unit Valuation on the Local Level, *Jim Pence, Moderator*

Friday, March 28, 2003

7:00 – 8:30	Registration and Continental Breakfast
8:30 – 9:15	Telecommunications Issues and the Cost of Capital, *Toby Reese*
9:15 – 10:00	Auditing Public Utility, *Vergie Booty*
10:00 – 10:15	Break
10:15 – 12:00	The Effect of Recent GAAP Pronouncements on Property Tax Assessments – Robert Reilly and Frank Carr
12:00 – 1:30	Lunch
1:30 – 2:15	Utah's Rule Governing Utility Appraisals, *Marc Johnson*
2:15 – 3:00	Capitalization Rates – Is Stock Price King?, *William Mack*
3:00 – 3:15	Break
3:15 – 4:00	Valuing Telecommunications Using the Cost Approach , *Stephen Barreca*
4:00 – 5:00	IAAO Public Utility Section Business Meeting

IAAO 2003 Public Utility Seminar
Seminar Agenda

Saturday, March 29, 2003

7:00 – 8:30	Registration and Continental Breakfast
8:30 – 9:15	Allocation - Room for Improvement?, *Michael Green*
9:15 – 10:00	The Valuation of Natural Gas Pipeline Companies, *Jeff Amburgey*
10:00 – 10:15	Break
10:15 – 12:00	Round Table Discussion- Utility Valuation Issues in Florida, *Jim Pence, Moderator*

Name: [illegible] O'LEARY Phone: [illegible]

To obtain credit, have the room monitor stamp the appropriate box at the end of the session.

Tuesday, September 16, 2003

Drive Ride-Share, or Take the Limo? Putting You on the Information Highway! – P. Thum/A. Metcalf (1.5 Credits)
Commercial Valuation 100+ - P. Korpacz (1.5 Credits)
Great Caesar's Ghost! Who's Going to Need Real Appraisers Anymore! AVMs and the Future for Us – L. Allen/M. Ireland, CAE/G. Lawson/J. Cirincione/J. Hunt, CAE, MAI/E. Norman (1.5 Credits)
Best Practices in Tax Collection – W. Rodda, CAE (1.5 Credits)
Billing/Collections-An Enterprise Perspective – J. Meyers (1.5 Credits)
Current Events, State and Local Tax Issues – R. Cline/H. Duncan (1.5 Credits)

Tuesday, September 16, 2003

Best of Legal Seminar – T. Jaconetty, Esq./W. Tenebaum, Esq. (1.5 Credits) "OFFICIAL SEAL" International Association of Assessing Officers Department of Professional Development 15
Technology and Data Standards News Assessors Will Need to Know – Panelists from NSGIC and IAAO (1.5 Credits)
Web-Everyday: Doing Business a New Way! – G. Harris, CAE/G. McCabe, CAE (1.5 Credits)
Valuation on the High End and in High Growth Areas – C. Law/M. Gallo, CMS (1.5 Credits) "OFFICIAL SEAL" International Association of Assessing Officers Department of Professional Development 15
Welcome to Controversy Central on the Assessor Channel – A. Miller/E. Crane (1.5 Credits)
COMMUNICATE IT! – N. Hoy/R. Turner/M. Means (1.5 Credits)

Name: [illegible] D O'KEEFE Phone: 9/16/03

To obtain credit, have the room monitor stamp the appropriate box at the end of the session.

Tuesday, September 16, 2003

Best of CAMA/GIS Conference 2003 – L. Schlotter (1.5 Credits)

US Census Bureau and the Assessor – E. Richardson (1.5 Credits)

MAF/Tiger Enhancement Program – T. Loo (1.5 Credits)

Tuesday, September 16, 2003

Lincoln Institute of Land Policy - THE PROPERTY TAX AS A FISCAL LIFELINE

The Property Tax: More Important Than Ever – D. Brunori

Will Problems with Sales and Corporate Income Taxes Push Governments to the Property Tax? – W. Fox

Tax Avoidance Schemes and the Decline of State Corporate Income Taxes – L. Luna (~~3.0 Credits~~)

Are There Better Ways to Design Economic Development Incentives? – M. Murray (3.0 Credits)

THE INTERNATIONAL ASSOCIATION OF ASSESSING OFFICERS

Certificate of Completion

The International Association of Assessing Officers
presents this certificate to

MICHAEL OLEARY

in recognition of satisfactory completion of

IAAO 101
Fundamentals of Real Property Appraisal

(30 hours)

conducted by
The International Association of Assessing Officers

November 7, 2003

Executive Director

Certificate No. 44

Date Issued 1/31/2003

State of Rhode Island and Providence Plantations

Certificate of Designation

The Designation of

Rhode Island Certified Assessor

is hereby awarded to

Michael W. O'Leary

In recognition of the successful completion
of all requirements

Personnel Administrator

Governor

STATE OF CONNECTICUT

Certificate No: 555

Expiration Date: April 30, 2004

SECRETARY OF OFFICE OF POLICY AND MANAGEMENT
Intergovernmental Policy Division
be it known that

Michael W. O'Leary

having met the necessary requirements and regulations
is hereby certified to perform revaluation functions for

Land/Residential
Commercial/Industrial
Personal Porperty
Supervisor

in witness thereof, this certificate is issued by

Marc S. Ryan
Secretary

Michael J. Cicchetti
Undersecretary

NORTH CAROLINA DEPARTMENT OF REVENUE

MICHAEL W. O'LEARY

in recognition of having successfully completed a comprehensive examination in the appraisal of property for ad valorem tax purposes.

Presented this the 11th day of November 1997

Secretary of Revenue
State of North Carolina

DISPLAY THIS CERTIFICATE PROMINENTLY. NOTIFY AGENCY WITHIN 10 DAYS OF ANY CHANGE

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
P.O. BOX 2649, Harrisburg, PA 17105-2649

Classification

CERTIFIED PENNSYLVANIA EVALUATOR

Certificate Number	Certification Date	Issued	Expires
AV-000691-L	DEC 11 1995	APR 22 1997	JUN 30 1999

Issued To:

MICHAEL WALTER OLEARY
1211 FOXMEADOW DRIVE
ROYERSFORD PA 19468

Signature

Dorothy Childress

Commissioner of Professional and Occupational Affairs

ALTERATION OF THIS DOCUMENT IS A CRIMINAL OFFENSE UNDER 18 PA.C.S. 4904

Division of
Property Valuation
and Review
43 Randall Street
Waterbury, VT 05676-1512

Tel.: (802) 241-3500
Fax: (802) 241-3510
TDD: (802) 241-3511

February 22, 1994

Michael W. O'Leary
157 North Ave. #2
Burlington, VT 05401

Dear Mr. O'Leary:

Based on the information your provided, I am pleased to approve your application as a "Appraiser" under the provisions of 32 V.S.A., section 4052, and Rule 86-P65.

Congratulations,

Stearns B. Allen Jr., Director

cg

: (802) 241-3503

Current Use: (802) 241-3505

Mapping: (802) 241-3507

Systems

Exhibit 2

THOMAS M. BRUCE, III

106 Farm Drive, Cumberland, Rhode Island, 02864
(401) 658-3923 • e-mail: tomellb@aol.com

OBJECTIVE

To serve as an effective Government Finance Administrator while applying developed skills in the areas of fund accounting and budgetary control, financial systems development and human resource management

PROFESSIONAL EXPERIENCE

Town of Cumberland, Cumberland, Rhode Island 2/02 – present
Finance Director

- Responsible for the management and administration of finance, information technology and purchasing functions
- Managed the effective recruitment and staff development of municipal accounting personnel
- Supervise functions of personnel management, labor relations matters and collective bargaining agreements
- Implemented computerized accounting systems, electronic lockbox and web enabled tax collections and provided oversight of the development of the first municipal-wide area network
- Oversee a $70 million budget with three consecutive General Fund annual operating surpluses secured 2002-2004
- Completed GASB 34 requirements resulting in a clean unqualified audit opinion, June, 2003
- Moody Investors Service bond rating of Cumberland upgraded February, 2003 to Baa2 and March, 2004 to Baa1
- Competed the development of the first Town Police Pension System Plan Document and assisted Pension Board Members in the improvement of administrative standards and plan funding levels

Johnston Public School System, Johnston, Rhode Island 3/00 – 2/02
Director of Administration

- Responsible for the management and administration of all finances, human resources and information technology
- Developed and controlled a $31 million dollar budget covering 3500 students, 550 employees and 9 individual schools
- Coordinated and oversaw personnel-related matters including employee recruitment, food services, purchasing and student transportation
- Researched and developed an accounting system and staff recruitment process with an end result of improving district operational efficiency

City of Woonsocket, Woonsocket, Rhode Island 2/96 – 3/00
Finance Director

- Responsible for the management and administration of finance, information technology and purchasing functions
- Supervised all personnel management decision-making, labor relations matters and collective bargaining agreements
- Implemented computerized accounting systems and a municipal-wide area network
- Oversaw a budget consisting of four consecutive General Fund annual operating surpluses
- Secured improved bond rating (January 1999) from Fitch BBB+ to A-

Town of West Warwick, West Warwick, Rhode Island 10/93 – 2/96
Finance Director

- Provided complete budget formulation and fund financial reporting responsibilities, management of tax, information technology and purchasing functions
- Implemented a town-wide accounting system and established the automation of fixed assets records
- Managed a budget consisting of two consecutive General Fund annual operating surpluses
- Secured improved bond rating, October 1996, Moody's (below Investment Grade Ba to Investment Grade Baa)
- Unqualified audit opinion attained, June 1995
- Served as Finance Director during the mayoral and manager forms of government reporting directly to the Town Council during the 1994 process of transition

Rhode Island Bureau of Audits, RI Dept. of Administration, Providence, Rhode Island 12/92 – 10/93
Auditor

- Assigned to local government and computer-related projects reporting to the Director of the State Police Financial Crimes Unit relative to investigations associated with local government computerized tax and accounting systems
- Provided financial insight and management assistance to municipalities

- Reported to the State Budget Commission responsible for overseeing and reviewing the financial management of the Town of West Warwick

Resource Control Associates, Pawtucket, Rhode Island 4/91 – 12/92
Controller
- Duties included financial management, systems and reporting responsibilities for an environmental engineering firm

DLH Systems, New Bedford, Massachusetts 8/84 – 10/90
Municipal Software Support Manager
- Managed the installation and client support services of an IBM Corporation related industry software provider whose financial product line consisted of municipal and school system applications
- Serviced municipal and education department clients located in nineteen states
- Served as Corporate Treasurer reporting directly to the company President

City of Providence, Providence, Rhode Island 7/82 – 8/84
Fiscal Officer
- Responsible for the preparation and analysis of financial statements
- Audit engagement responsibilities for capital projects and enterprise fund groups

EDUCATION

Johnson & Wales University, Providence, Rhode Island - 1984
Graduate Studies: Advanced Accounting

University of Rhode Island Graduate School, Kingston, Rhode Island - 1981-1982
Graduate Studies: Auditing, Financial Accounting Theory, Corporate Taxation, Business Law, Advanced Financial Theory

Rhode Island College, Providence, Rhode Island - 1981, Graduated Cum Laude
Bachelor of Science in Management (Accounting Track)

PROFESSIONAL AFFILIATIONS

Rhode Island Government Finance Officers Association (1982-present)
- ***President*** (July, 2000-June, 2001)
- ***Chairperson, RI Legislation Committee*** (1998-2000)
- ***Executive Board Member*** *(1997 to present)*

New England State Government Finance Officers Association
- ***1st Vice President*** (Sept 2000-present)
- ***President*** (Sept 2001 to Oct 2002)
- ***Host President for the Association Annual Conference*** (Oct 2002)
- ***Executive Board Member*** *(1999 to present)*

Rhode Island and National Associations of School Business Managers (2000-present)
- ***Member***

Cumberland Municipal Employees Credit Union - 2002 to present
- ***Member, Board of Directors***

Rhode Island Blue Cross & Blue Shield - 2002-present
- ***Member, Municipal Advisory Board***

MUNIS Local Government Financial Software - 1996 – 2000
- ***RI Representative, Client Advisory Board***

COMMUNITY SERVICE

Cumberland Municipal Finance Task Force (1/01-2/02)