

MUNICIPALITY:

Berwick, ME

ASSESSMENT YEAR:

Fiscal Year 2019

ASSESSMENT SERVICES PROVIDED:

Valuation Update

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SECTION A

Letter of Transmittal

November 25, 2019

Selectmen and Assessing Officials
Municipality of Berwick
11 Sullivan Street
Berwick, ME 03901

LETTER OF TRANSMITTAL

Dear Municipal Official:

The following report is intended to document the entire process associated with the data collection, review, analysis and reporting necessary to render a credible opinion of value(s) in accordance with the Uniform Standards of Professional Appraisal Practice (USPAP) and Rule 208, Revaluation Guidelines, as established by the Maine Bureau of Revenue Services.

The Intended Use of this Report: is to provide a basis for the revaluation of all real property in the Municipality of Berwick as required by the contract signed between the Municipality of Berwick and Municipal Resources Inc. A copy of this contract is retained in Appendix A.

The Intended Client of this Report: are the Municipal Officials.

Other Users of this Report: include the public, property owners and municipal officials.

The Date of Value Utilized in this Report: is April 1, 2019 in accordance with 36 MRS § 502 which states that all real estate and personal property in the State is: “[S]ubject to taxation on the first day of each April as provided.”

Type and Definition of Value Utilized in this Report: The type of value expressed in this report is *just value*, and is defined in 36 MRS § 701-A where:

“Assessors in determining just value are to define this term in a manner that recognizes only that value arising from presently possible land use alternative to which the particular parcel of land being valued may be put.”

Also in Article IX Section 8 of the Maine Constitution where it states: "All taxes upon real and personal estate assessed by the authority of this State shall be apportioned and assessed equally according to the just value there of."

An expanded definition of *just value*, herein mentioned as market value, as defined within the Maine Revenue Services Property Tax Division establishes the market value of a property must meet the following criteria:

- (a) Is the most probable price, not the highest, lowest or average price;
- (b) Is expressed in terms of money;
- (c) Implies a reasonable time for exposure to the market;
- (d) Implies that both buyer and seller are informed of the uses to which the property may be put;
- (e) Assumes an arm's length transaction in the open market;
- (f) Assumes a willing buyer and a willing seller, with no advantage being taken by either buyer or seller; and
- (g) Recognizes both the present use and the potential use of the property.

Identification of the Property Rights Assessed in this Report: The type of property rights is "fee simple." Fee Simple Estate is defined as:

"Absolute ownership unencumbered by any other interest or estate; subject only to the limitations imposed by the government powers of taxation, eminent domain, police power, and escheat (the right of government to take title to property when there are no apparent heirs)." (The Dictionary of Real Estate Appraisal, Third Edition, 1993, Page 140.).

Extent of Property Inspections: As required by the contract signed between the Municipality of Berwick and Municipal Resources Inc., a measure and list was required for the building permits and sales properties specified by the Municipality of Berwick.

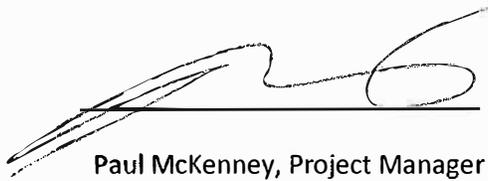
Certification of Value:

The undersigned certifies that, to the best of our knowledge and belief:

- 1) The statements of fact contained in this report are true and correct.
- 2) The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions and conclusions.
- 3) We have no present or prospective interest in the property that is the subject of this report, and we have no personal interest with respect to the parties involved.
- 4) We have no bias with respect to any property that is the subject of this report or to the parties involved with this assignment.
- 5) Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- 6) Our compensation for completing this assignment is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- 7) The analyses, opinions and conclusions were developed, and this report has been prepared in conformity with the Uniform Standards of Professional Appraisal Practice (USPAP).
- 8) We have not made a personal inspection of the properties that are the subject of this report other than the sale properties and the properties which had a building permit issued in the last year. These individuals, and anyone providing significant mass appraisal assistance to the individual signing this report, are identified in Appendix B.
- 9) Our opinion of the total market value in Berwick, Maine of April 1, 2019 is:

783,256,800

See the Total Value Report by Property Class for details of value in Appendix D

A handwritten signature in black ink, appearing to be 'PM', is written over a solid horizontal line. The signature is fluid and cursive.

Paul McKenney, Project Manager

Municipal Resources Inc.

November 25, 2019

SECTION B

Scope of Work

Identification of Assumptions and Limiting Conditions

The following Assumptions and Limiting Conditions apply only to the sale data utilized to complete the sales analysis, and to establish the basis for the statistical benchmarks incorporated into the analysis, for the contracted statistical revaluation. Any exceptions to the following Assumptions and Limiting Conditions will be documented on the individual property record cards, when applicable.

- 1) We have not been provided deeds to the assessed properties. Therefore, no responsibility is assumed for the legal description provided or for matters pertaining to legal issues and/or title.
- 2) We have not been provided deeds to the assessed properties. Therefore, the properties were assumed to be free of any and all liens and encumbrances. Each property has also been appraised as though under responsible ownership and competent management.
- 3) We have not been provided surveys of the assessed properties. Therefore, we have relied upon tax maps and other materials provided by the Municipality in the course of estimating physical dimensions and the acreage associated with assessed properties.
- 4) We have not been provided surveys of the assessed properties. Therefore, we have assumed that the utilization of the land and any improvements is located within the boundaries of the property described, and there is no encroachment on adjoining properties.
- 5) We assume that there are no hidden or unapparent conditions associated with the properties, subsoil, or structures, which would render the properties (land and/or improvements) more, or less, valuable.
- 6) We assume that the properties and/or the landowners are in full compliance with all applicable federal, state, and local environmental regulations and laws.
- 7) We assume that the properties are in full compliance with all applicable zoning and land use regulations.

- 8) We assume that all required licenses, certificates of occupancy, consents, or other instruments of legislative or administrative authority from any private, local, state, or national government entity have been obtained for any use on which the value opinions contained within this report are based.
- 9) We have not been provided a hazardous condition's report, nor are we qualified to detect hazardous materials. Therefore, evidence of hazardous materials, which may or may not be present on a property, was not observed. As a result, the final opinion of value is predicated upon the assumption that there is no such material on any of the properties that might result in a loss or change in value.
- 10) Information, estimates and opinions furnished to the appraisers and incorporated into the analysis and final report was obtained from sources assumed to be reliable and a reasonable effort has been made to verify such information. However, no warranty is given for the reliability of this information.
- 11) The Americans with Disabilities Act (ADA) became effective January 26, 1992. We have not made compliance surveys nor conducted a specific analysis of any property to determine if it conforms to the various detailed requirements identified in the ADA. It is possible that such a survey might identify non-conformity with one or more ADA requirements, which could lead to a negative impact on the value of the property(s). Because such a survey has not been requested and is beyond the scope of this appraisal assignment, we did not take into consideration adherence or non-adherence to ADA in the valuation of the properties addressed in this report.
- 12) The market forecasts, projections and operating estimates contained within the report are predicated upon current market conditions, and forecasts of short-term supply and demand factors. This information was obtained in the course of interviews with knowledgeable parties, and in published public and private resources. While this information was assumed to be credible, these forecasts are subject to change due to unexpected circumstances, including local, regional and/or national.

- 13) Any opinions of value in this report apply to an entire property, and any allocation or division of the value into separate fractional interests will invalidate the opinion of value reflected in this report.
- 14) Information pertaining to the sales of properties utilized in the analysis and subsequent report has been confirmed with either the buyer, seller, or a third party whenever possible, and is assumed to be reliable.
- 15) Possession of this report does not carry with it the right of reproduction, and disclosure of this report is governed by the rules and regulations of the State of Maine and is subject to jurisdictional exception and the Laws of Maine.

Scope of Work as Identified in the Contract

The valuation report that follows is predicated upon the contract signed between the Municipality of Berwick and Municipal Resources Inc. A copy of the contract is in Appendix A of this report. The scope of work identified in the contract and incorporated into the following report comprised the following steps:

The contract stipulated that a measure and list was required for the sales properties specified by the Municipality of Berwick. All property transfers within the Municipality of Berwick spanning a period of two years prior to April 1, 2019 were reviewed and analyzed to determine if the transfer was an “arm’s-length transaction.” This was accomplished by interviewing the buyer, seller, representative sales agent or verification of Multiple Listing Service Information and Real Estate Transfer Declaration (RETTD) forms. The interview also identified the sales price and any terms or conditions surrounding the sale that might have influenced the negotiated price.

This property information was analyzed, and the highest and best use of each property identified, as described within this section. The qualified sale data was “stratified” by use type, such as single-family residential, land, commercial, etc. The sale data was also stratified by neighborhood, in order to isolate more discrete “locational” differences and/or influences. The verified sale data was then utilized to extract meaningful adjustments and/or benchmarks that became the basis for various tables, such as cost, depreciation, view influence, water influence, etc. All pertinent factors, including physical, legal, and economic considerations were considered and recognized, subject to the assumptions and limiting conditions referenced.

Once the preliminary benchmarks were established, “data calibration” was required in order to bring the computerized mass appraisal formulas and tables into conformity with the market. To do so, a field review and further analysis utilizing “ratios” (a comparison of the assessed value to its sale price) and the CAMA (Computer Assisted Mass Appraisal) software was conducted in order to refine the base tables and verify the alignment and consistency of the base tables. Vision Government Solutions is the CAMA software used by Berwick.

Finally, these benchmarks became the basis for the statistical analysis of these properties, and new property values were developed utilizing at least one of the three possible approaches to value (Sales Approach, Cost Approach, and/or Income Approach to value). Overall, every effort was made to help ensure that the values were uniform and equitable.

Upon completion of the final review and approval of the Municipality’s values by the Municipality, notices of value were then mailed to each taxpayer. These notices also included sufficient information (timing and location) to enable a taxpayer to attend an informal hearing to “appeal” the new assessed value. Hearings were then held at a time and location scheduled by the Municipality. Any changes that arose from the appeal and hearings process were reflected in the final tax bill for 2019.

This report was prepared in conformity with the Uniform Standards of Professional Appraisal Practice (USPAP) and the contract signed between the Municipality of Berwick and Municipal Resources Inc.

Brief Description of the Assessed Properties

In accordance with the contract located in Appendix A of this report, the Municipality of Berwick required all the real property in its respective municipal boundaries to be valued, apart from all utility and telecommunication parcels. A breakdown of the Municipality's real property by "use type" follows:

Commercial /Industrial	138
Utilities	10
Condominium	104
Manufactured Homes	391
Residential	2230
Vacant Residential Land	365
Current Use	41
Exempt	<u>62</u>
Total	3341

Determination of Highest and Best Use

Highest and Best Use is defined as:

"The reasonably probable and legal use of vacant land or improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are: legal permissibility, physical possibility, financial feasibility, and maximum profitability" ³ (The Dictionary of Real Estate Appraisal, Third Edition, 1993, Page 171).

In most cases the existing use is already at its highest and best use and will be evaluated and assessed accordingly.

Importantly, however, in the case of "transitional" uses, the assessor may evaluate the property based on its projected highest and best use. A "transitional" use is a property with a highest and best use that is no longer maximally profitable, and the existing use is likely to change due to market and economic forces. In these circumstances, the projected highest and best use is

determined by a market analysis that references the four criteria referenced above— legal permissibility, physical possibility, financial feasibility and maximum profitability. A common example of this would be a vacant tract of residential land, not in a current use program, that is surrounded by significant numbers of residential homes and/or lots and the market conditions indicate a favorable housing market. In this case, the assessor may justifiably assess the raw land based on its legitimate development potential.

Situations Where Highest and Best Use is Not Utilized

Highest and best use is not utilized in situations where the land is held in a state regulated current use program. When land is held in a current use program, after qualification and application, the land is assessed according to State guidelines. Examples of these programs include the Maine Tree Growth Program, Farmland Program and Working Waterfront Program. In such cases the properties are valued much less than what the land would appraise on the open market.

Approaches to Value Considered and Utilized

The residential properties were valued by the Sales Comparison and Cost approaches to value. Commercial properties were valued by the Income and Cost approaches to value. The Cost approach was reconciled with the other approaches and was used as the final value for assessment purposes.

Approaches to Value Not Utilized

Qualified sales for commercial properties were limited during the sales analysis period. The few sales that did occur were considered, but there were not enough sales for the various commercial types to rely on the Sales Comparison approach for a final value conclusion.

Valuation of Utility Properties

The valuation of utility properties, including the valuation of telephone poles and conduits were part of the assessing services provided. Utilities were valued in accordance with the State of Maine Laws.

SECTION C

Valuation Premises and Procedures

Description of Basic Valuation Theory and Mass Appraisal

Basic Valuation Theory:

- 1) The appraiser's first task is to identify what property is being appraised. This includes not only the physical aspects of the property, but the property rights as well.
- 2) There are six basic property rights associated with the private ownership of property, these include: 1) the right to use, 2) the right to sell, 3) the right to lease or rent, 4) the right to enter or leave the property, 5) the right to give away, and 6) the right to refuse to do any of these. These, and other rights, are known as the full "bundle of rights," which is understood to be attached to an ownership with "fee simple" title which has been described in the preceding section.
- 3) The next step is to identify the "highest and best use" of the property. Refer to the preceding discussion, as well as the discussion on highest and best use in the preceding "Assumptions and Limiting Conditions" section.
- 4) Once the highest and best and use has been determined, the appraiser begins the process of data collection, studies the market and accompanying economic forces (such as "supply and demand") that pertain to the highest and best use, and assembles the relevant data and statistics for incorporation into the analysis.
- 5) Strategies for data collection will vary with the type of data being sought and may not be the same for every property "use." Overall, the comparative data, which may include descriptions and/or confirmations of physical attributes (such as total size, number of bedrooms, presence of a finished attic or basement, etc.) cost, income and expense, and details of sale or transfer information are collected, if applicable.
- 6) At this point, neighborhood boundaries can be established in order to "stratify" the properties and the property-specific information collected in the field, and the statistical information pertaining to the market/economic forces that impact an area in a meaningful and cohesive way.
- 7) This market-derived information, such as sale information, improvement costs and depreciation is then entered into the Municipality's CAMA (Computer Assisted Mass

Appraisal) system, and forms the basis for the database “tables” that enable the CAMA system to generate specific property values.

8) There are primarily three “approaches” or analytical techniques utilized to develop an opinion of value, and these techniques are incorporated into the CAMA system.

9A) The first valuation technique is referred to as the “Sales Comparison Approach,” and is based on the premise that the appraiser can utilize sale prices of similar properties as evidence of value. In other words, assuming similar market conditions (supply and demand) a similar property would sell for a similar price. However, because no two properties are ever exactly alike, and market conditions can change, a systematic series of “adjustments” are made to the sale property in order to bring it into conformity with the appraised property. In the context of mass appraisal performed for assessment purposes, the “appraised” property begins with a “generic” property description that is utilized to establish a “baseline” for comparing similar properties. For instance, a “single-family residential ranch-style home, approximating 2,000 square feet, three-bedrooms, two-baths, and of average quality construction and condition.” The sales are then compared and adjusted in order to isolate the various market factors and baseline parameters that are then applied to the specific properties being assessed. Overall, the Sales Comparison Approach is based upon the principle of “substitution,” which assumes that when several similar properties are available the property with the lowest price will attract the greatest demand.

9B) The “Cost Approach” is based on the concept that the likely value of an existing property is the value of the underlying land plus the replacement cost of the depreciated improvements. Typically, a Cost Approach would not be utilized for an appraisal of vacant land. The replacement cost of the improvement is typically derived from published cost tables, or derived directly from localized information, and should be updated as required by market conditions. Importantly, the assessor typically evaluates the existing improvement based on its “utility” and function, rather than attempting to duplicate or exactly “reproduce” the assessed property. Similar to the Sales Comparison Approach, the Cost Approach is also based upon the principle of “substitution.”

9C) The “Income Approach” is based upon the principle of “anticipation” which recognizes that value is created by the owner’s expectation of future benefits. Typically, these

benefits are anticipated in the form of income, and/or in the anticipated increase in the property's value over time. This technique requires that the appraiser estimate the potential gross market income for the property at its highest and best use, subtract all appropriate expenses to derive the net operating income. The net operating income is then divided by a "capitalization" rate, or the market-derived rate investors would expect on alternative investments that share the same degree of risk as the appraised property. A simplified income approach is structured as follows:

Annual Potential Gross Income	
5 apartments @ \$1,000/month =	\$60,000
Annual Vacancy Rate = 5% annually =	<u>(\$3,000)</u>
Annual Effective Gross Income =	\$57,000
Annual Expenses =	<u>(\$23,000)</u>
Net Operating Income =	\$34,000
Capitalization Rate = 10%	
Property Value = \$34,000 / 10% = \$340,000	

9) Completion of all three of the preceding independent approaches to value is preferable, since each independent approach provides a useful "test of reasonableness," and more such tests are preferable to fewer such tests. However, it is not always possible to complete a specific approach due to the unavailability of meaningful data. Finally, the different values reached by independent techniques are "reconciled" by evaluating both the quality of the information utilized in each approach, and a final opinion of value is selected.

Mass Appraisal:

10) Mass appraisal utilizes many of the same concepts outlined above. However, due to the necessity to attach values to multiple properties, as opposed to a single property, mass appraisal emphasizes data management, statistical valuation models and statistical quality control. As a result, the use of an automated valuation model (AVM), also referred to as Computer Assisted Mass Appraisal (CAMA), software is required. The CAMA or AVM is a mathematically based computer software program

that produces an estimate of market value based on market analysis of location, market conditions, and real estate characteristics from information that was previously and separately collected. The distinguishing feature of CAMA or AVM software is that it is a market appraisal produced through mathematical modeling. Importantly, as in most if not all data processing systems, the credibility of the results is highly correlated with the quality of the input data utilized, and the skills of the assessor or analyst utilizing the CAMA or AVM software.

11) Therefore, a mass appraisal system generally relies upon four primary “subsystems” that include: 1) a data management system, 2) a sales analysis system, 3) a valuation system, and 4) an administration system. Each subsystem is briefly described below:

12A) The Data Management system is the core of the mass appraisal system and should be carefully designed and implemented. Fundamentally, the data management system is responsible for the data entry and subsequent editing, as well as the organization, storage and security oversight of the data. Essential to the data management system is quality control, as the reliability of the data will have a direct and profound impact on the quality of the resulting output and values.

12B) The Sales Analysis subsystem is responsible for the collection of sale data, sale screening, various statistical studies and sales reporting. The following statistical techniques are utilized to calibrate and fine-tune the data assumptions:

Ratio: refers to the relationship between the appraised or assessed values and market values as determined by a review of sales. The ratio studies, which are the primary product of this function, typically provide the most meaningful measures of appraisal performance and provide the basis for establishing corrective actions (re-appraisals), adjusting valuations to the market, and planning and scheduling administration. The requirement is to maintain a Median Ratio between 90% and 110% of market value. A Ratio of 100% is preferred, indicating the assessed value is identical to the market value.

COD: or Coefficient of Dispersion, is another important statistical tool utilized in mass appraisal and refers to the average percentage deviation from the median ratio. As a measure of central tendency, the COD represents the degree to which the data being analyzed clusters around a central data point, such as the median ratio. The

requirement is a COD no greater than 20%, and a lower COD is preferable to a higher COD.

PRD: or Price-Related Differential, is calculated by dividing the mean by the weighted mean. A PRD greater than 1.03 indicates assessment regressivity (when high-value properties are assessed lower or disproportionate to, than low value properties). A PRD lower than 0.98 indicates assessment progressivity (when high-value properties are assessed higher, or disproportionate to, low-value properties). The requirement is a PRD no greater than 1.03, and no lower than 0.98. Overall, a PRD equal to 1.0 is preferred.

12C) The Valuation System generally comprises the statistical application of the three approaches to value (identified in the preceding section). For instance, utilization of the Sales Comparison Approach includes a statistical analysis of current market sales data. The Cost Approach utilizes computerized cost and depreciation tables and reconciles these computerized cost-generated values with market-derived sales information. The Income Approach utilizes computer-generated income multipliers and overall capitalization rates. The Valuation System is also utilized to extract adjustments and/or factors that are utilized in the development of values.

12D) The Administrative System includes such core (often automated) functions as development of the property record cards and assessment roll or property tax base, the preparation of the tax notices, and retention of the appeals and other miscellaneous property files.

Period of Time Associated with Sales/Data Collection:

Sale data utilized for the purpose of completing this analysis spanned a two-year period from April 1, 2017 to March 31, 2019. Only sales confirmed to be qualified arms-length, or market-oriented, transactions were utilized in the analysis.

Data Collection and Sales Verification Procedures:

The County Registry of Deeds provides the Municipality's Assessing Department with copies of all recorded property transfers within 30 days of the date of transfer. Each individual sale was analyzed by the Municipality's assessing staff to determine if the transfer was a qualified sale; i.e., arm's-length and market oriented. The qualification procedure required either a direct interview

with the buyer, seller, or broker/representative familiar with the circumstances surrounding the negotiated transfer of the property or was verified through Real Estate Transfer Tax Declaration (RETTD) forms. Upon final qualification, an attempt was made to inspect the property and the property record cards were updated.

Number of Sales Utilized in Analysis:

As of the date of this report, there are 3341 total parcels situated in the Municipality. The breakdown of all property transfers for 4/1/2017 to 3/31/2019 within the Municipality by use type is as follows:

Commercial / Industrial	28
Utilities	1
Current Use	5
Residential	360
Condominium	29
Mobile Home	52
Vacant Residential Land	57
Exempt	<u>6</u>
Total	538

The breakdown of all qualified property transfers within the Municipality by “use type” follows:

Commercial / Industrial	7
Condominium	16
Residential	223
Mobile home	27
Vacant Land	<u>14</u>
Total	287

Description of Data Calibration Methods:

The sale data is verified for accuracy by submitting each one of these sale properties to a thorough physical (measure and list) and market analysis (by confirming a transaction was arm's length, with no unusual circumstances that might have influenced the negotiated sale price), including interior inspection whenever possible. Once verified, and the preliminary benchmarks were established, field reviews were conducted in order to refine the base tables and verify the alignment of properties and the tables by "use type" and location, for example. The preliminary values were further "validated" by the statistical testing of the sale data made possible by the CAMA software system. The CAMA software groups and sorts the data by various elements of consideration such as: improvement type, age, size, and neighborhood, and various "ratios" are developed that reveal discrepancies in the underlying valuation model.

Significance of Adjustments and Factors:

"Adjustments" and "factors" are mathematical changes to basic data (for example, a "base" table) to facilitate comparisons and understanding. This process assumes a "causal" relationship among the various factors for which the adjustments are made.

Examples of factors and/or adjustments can include such important elements of consideration as waterfront or view or water access amenities. Importantly, a "feature" can be a positive influence on property value, or a "negative" influence on property value. The specific adjustments or factors applied to properties with amenities such as these, are typically derived from a detailed sales analysis. Once the appropriate sales are identified and confirmed or "qualified," several techniques are utilized to extract, or isolate, the specific factor the appraiser is trying to identify.

One such technique is known as "extraction," where the appraiser subtracts the depreciated value of the improvements from the total sale price to arrive at the underlying value of the specific land component being analyzed. This is the most commonly used method. Another technique is known as a "matched-pair" comparison analysis; wherein sales of properties that retain these features are compared to sales of properties that do not retain these features and the specific "contributory" value or factor attributable to the feature is isolated.

SECTION D

Time And Market Trending Analysis

Explanation and Derivation of Time Trending Factors:

Time trending refers to an analysis of market conditions over a specific period with two objectives: Firstly, the assessor must identify whether the market has appreciated, remained stable, or declined since the last valuation/reporting period; Secondly, the assessor must determine the actual rate of such activity, typically on a percentage basis.

The most useful and direct basis for extracting the rate of market change, whether up, down, or neutral, is to identify property that has sold twice with few changes in the property between the two sale dates. In such situations, the rate is calculated by comparing the change in sale price between the two periods. The reliability of this extracted rate of change is greatly improved when a several such sales are available. There were six properties that resold in a two-year period preceding April 1, 2019, which is too few sales to conduct a thorough analysis using this technique.

Another technique, less direct, but generally more statistically reliable due to the number of sales associated with the study, is to extract the rate of change in market conditions. This is called Sale Date Quartile stratification of sales to assessment ratios. The date range is from 4/1/2017 to 3/31/2019.

There were 266 qualified residential improved sales during this time period.

Sale Date Quarter	Count	Mean Sale Price	Mean Appraised	Mean A/S Ratio	Median SalePrice	Median Appraised	Median A/S Ratio	Median Abs Disp	COD	Weighted Average
2017, Q 2	40	212,919	217,232	1.02	209,000	217,950	1.03	0.08	7.89%	1.02
2017, Q 3	46	240,019	241,315	1.01	255,500	244,400	1.00	0.05	7.22%	1.01
2017, Q 4	39	226,686	228,623	1.03	225,400	216,700	1.01	0.06	8.63%	1.01
2018, Q 1	28	224,196	217,071	0.97	211,000	212,800	0.98	0.04	7.80%	0.97
2018, Q 2	37	231,341	222,468	0.96	234,000	223,800	0.94	0.04	7.10%	0.96
2018, Q 3	37	262,998	252,789	0.96	223,000	208,500	0.96	0.07	9.54%	0.96
2018, Q 4	39	271,917	254,797	0.94	265,000	253,200	0.94	0.05	6.87%	0.94
2019, Q 1	27	252,370	242,456	0.97	263,400	243,200	0.97	0.05	7.94%	0.96
		240,222	234,990	0.98	234,000	228,700	0.98	0.06	8.22%	0.98

Based on this method it was determined that a time adjustment was not needed when analyzing market sales for the 2019 revaluation of Berwick.

SECTION E

Land Data

Explanation of Land Valuation Methodology:

Land Valuation begins with an understanding that every municipality can be segregated into areas which are differentiated by varying characteristics, such as type and quality of roads, topographic and scenic features such as views and waterfront amenities, approved uses of property, and the quality and/or maintenance of such surrounding uses, etc. Typically, these distinguishing characteristics result in differing market responses, in terms of the underlying land value, that can be positive or negative. Therefore, land valuation depends upon using all the available data to establish a “base” or “typical” land rate for a municipality and then creating and applying a “schedule” of positive or negative adjustments corresponding to the degree of difference from that base.

To begin, local sale data is collected and examined. Sales of vacant land provide the most direct and reliable estimate of land value. However, when an insufficient number of vacant land sales are available, a land “extraction” technique can be utilized where the depreciated value of any structures or improvements on the property are deducted from the total sales price, resulting in the contributory value of the underlying land. Additional land value information can also be obtained by interviews with knowledgeable local brokers and real estate agents.

The two primary methods of valuing land are associated with the sales comparison approach. The “comparative unit” method enables the assessor to determine a typical per unit value for each strata of land, by calculating the median or mean sale price per unit. The “base lot” method requires the assessor to establish the value of the standard or “base” parcel in each stratum through a traditional sales comparison approach, with the base lot serving as the subject parcel. Once the base lot value is established, it is used as a benchmark to establish values for individual parcels, with adjustments made to each parcel as a result of their unique or varying characteristics.

Base Land Curve:

Whether by the “comparative unit” method, or the “base lot” method, a generic “base” value for land was established for each strata, reflective of the underlying market conformity of land values within the strata. Typically, there is an inverse curvilinear relationship between tract size and per acre prices. Larger sites are considered to sell for lower per acre values (all else being equal) and, inversely, smaller sites are considered to sell for larger per acre values. However, at some point these differences become too insignificant to be recognized in the market, and no adjustment is justified.

Residential base land curve values are typically developed both through the analysis of vacant land sales and use of the land extraction technique. Due to the insufficient number of qualified vacant land sales to conduct an analysis, the land extraction technique was utilized. Please see the Land Residual analysis in Appendix E.

If enough qualified land sales would have been available, arms-length transactions would have been utilized in the analysis. In that circumstance, preference would be given to those sales that required no location adjustments and are “typical” for the municipality. Adjusted Price is the trended sale price minus the value of any outbuilding on the property.

Considering all data regarding sales price comparative to lot size, the land curve for the municipality was set as follows:

<u>SQFT</u>	<u>PRICE/SF</u>	<u>LOT PRICE (ROUNDED)</u>
1,000	\$39.00	\$39,000
5,000	\$12.00	\$60,000
7,500	\$8.15	\$61,100
10,000	\$6.50	\$65,000
20,000	\$3.35	\$67,000
30,000	\$2.35	\$70,500
43,560	\$1.69	\$73,600

The price for excess acreage price was not derived from the land curve, but instead it was derived from the sales analysis for lot size for anything greater than one acre. Based on this analysis, it was determined that the excess land price be \$3,000 per acre.

Neighborhood Factor:

The next step is to identify the larger areas of town that might require an overall adjustment to this base value and establish the corresponding boundaries associated with each. As examples, these boundaries could be based on such things as geographic location, traffic flow, proximity to commercial or industrial areas, available amenities, zoning or any other homogeneous grouping of parcels that are similar in characteristics. These areas are identified by Neighborhood Factors and have corresponding value adjustments. During the analysis of sale patterns, Neighborhood Codes (listed as “ST Idx” on the field cards) were applied to similar parcels based on the observations of revaluation staff.

When sale properties with Neighborhood designations used for valuation are analyzed, the overall Median sales ratio is a .98 with a COD of 8.22%. See the Sales Analysis grouped by neighborhood below for further detail. Following the analysis, refer to the table of Neighborhood Codes and adjustments.

Land NBHD	Count	Mean Sale Price	Mean Appraised	Mean A/S Ratio	Median SalePrice	Median Appraised	Median A/S Ratio	Median Abs Disp	COD	Weighted Average
	12	205,000	204,542	1.00	206,500	208,150	0.99	0.04	7.32%	1.00
40	3	294,667	276,600	0.94	299,000	274,400	0.94	0.01	1.06%	0.94
45	8	234,188	240,725	1.03	222,500	229,850	1.01	0.04	9.03%	1.03
50	166	228,555	220,540	0.97	225,350	214,150	0.97	0.07	9.37%	0.96
55	42	282,660	276,436	0.98	275,250	272,000	0.98	0.05	6.51%	0.98
60	16	300,166	302,612	1.02	311,500	311,800	1.00	0.04	5.25%	1.01
65	4	305,500	299,100	0.99	299,950	298,050	0.97	0.05	6.19%	0.98
CG	4	259,675	255,900	0.99	266,100	256,300	0.97	0.01	2.84%	0.99
VIL	38	218,224	220,003	1.02	197,900	200,600	0.98	0.04	6.98%	1.01
		240,222	234,990	0.98	234,000	228,700	0.98	0.05	8.22%	0.98

Neighborhood Codes and Corresponding Adjustments:

NHBD Code	Land Adj
0	1.00
1.00	1.00
10	1.00
20	0.70
30	0.80
40	0.90
45	0.95
50	1.00
55	1.05
60	1.15
65	1.25
70	1.35
80	1.53
90	1.00
CDO	.50
CG	1.35
VIL	1.25
VL	1.00

Site Index Factor:

It is often required to further identify smaller pockets of properties within these larger areas that have additional characteristics requiring adjustment. Examples might include location within a subdivision, water views, specific waterfront locations, etc. Through the land analysis process, ten distinct site indexes were developed for residential parcels and coded numerically and alphabetically.

Site Index Code	Adjustment Factor
1	0.25
2	0.50
3	0.80
4	0.90
5	1.0
6	1.10
7	1.20
8	1.30
9	1.40
A	1.20

A 5 Site Index is considered typical for the municipality and bears no adjustment factor. The factors for codes 1,2,3,4, 6, 7, 8, 9 and A were applied based on the appraiser’s observation of the desirability of the designated area. Please note, the analysis below includes commercial codes E and H. These factors were tested against the trended sales and produced median ratios in a range of 0.90 -1.05. See the Sales Analysis grouped by Site Index below for further detail.

Site Index	Count	Mean Sale Price	Mean Appraised	Mean A/S Ratio	Median SalePrice	Median Appraised	Median A/S Ratio	Median Abs Disp	COD	Weighted Average
	2	270,500	244,400	0.90	270,500	244,400	0.90	0.04	4.44%	0.90
2	13	206,538	206,992	1.00	208,000	211,200	1.00	0.04	7.08%	1.00
5	270	236,717	231,391	0.98	235,700	231,800	0.97	0.06	8.41%	0.98
A	5	226,100	228,420	1.01	195,000	196,500	1.00	0.02	2.40%	1.01
E	1	310,000	324,500	1.05	310,000	324,500	1.05	0.00	0.00%	1.05
H	2	902,500	865,100	1.04	902,500	865,100	1.04	0.09	8.17%	0.96
		240,222	234,990	0.98	234,000	228,700	0.98	0.05	8.22%	0.98

Land Condition Factor:

It is often necessary to further adjust the value of land when there are characteristics of the parcel that are unique to that parcel, such as restrictions, easements, access, topography, excess waterfront, etc. The chart below lists some guidelines typically used.

<i>Typical Land Adjustments</i>	
Type	Adjustment
Building Lots - accesses, Right of Ways, etc.	Minus 5 - 10%
Vacant buildable lots	No adjustment
Unbuildable -Size, shape, topography	Minus 75-90%
Landlocked	Minus 75-90%
Excess Acreage - steep/wet	Minus 10 - 90%
Current Use	per State guidelines

Land Pricing Instructions:

After consideration of the base rate, factor adjustments and excess acreage, land is priced as follows:

Land Line 1: The base lot is entered and includes any land up to 43,560 SF. The Site Index and Neighborhood Code adjustments are utilized to adjust for location. Any access, right of way, allowable use or topography adjustments are made in the Condition Factor section.

Land Line 2: Any excess acreage over the first acre will be priced here at \$3,000/acre. This would appear as an adjustment in Land Line 2.

In addition, any applicable topography, easements, (condition factor adjustments/considerations) can be adjusted here in the condition factor section as needed. Site index codes are not utilized on excess acreage, but Neighborhood codes apply.

Land Valuation Model:

The land valuation model for each land line is defined as Land Value = Size x Unit Price x Site Index factor x Condition Factor x Neighborhood factor.

Please see the following example property record card in Appendix E.

Base Acre Example: Vision ID 123

43,560 Square Foot Lot

\$1.69 per Sq. ft. (from Land Curve)

Site Index Factor 1.00 (SI 5)

Condition Factor 1.00

Neighborhood Factor 1.00 (Street Index 50)

$43,560 \times \$1.69 \times 1.00 \times 1.00 \times 1.00 = \$73,616.4$

Land Value = \$73,600 rounded

Excess Acreage Example: Vision ID 123

20.30 Acres

\$3,000 per Acre of excess land (derived from sales analysis for lots greater than an acre)

Site Index Factor 1.00 (SI is not used for excess acreage)

Condition Factor .80

Neighborhood Factor 1.00 (Street Index 50)

$20.30 \times \$3,000 \times 1.00 \times .80 \times 1.00 = \$48,720$

Value of Excess Acreage= \$48,700 rounded

Total Land Value:

\$73,600 (Base acre) + \$48,700 (Excess Acreage) = \$122,300

SECTION F

Improved Property Data

Residential Valuation Process using Cost/Market Approach Modeling:

In order to value property, all the pertinent physical data regarding the improvements needs to be collected and the replacement cost of the building needs to be determined. The most common, and effective, method to value improved residential property is by using the Cost Approach. The Cost Approach intends to arrive at the replacement cost of the structure and utilizes cost tables to establish values. The Computer Assisted Mass Appraisal (CAMA) cost tables are based on construction materials, quality and size, and are utilized to develop a replacement cost for the building. Once the cost of the building is developed, depreciation from normal wear and tear, and from functional and economic obsolescence, is deducted.

As discussed in Section A, as well as the end of this section, the Cost Approach methodology is tested against the other approaches to value, Sales Comparison Approach and Income Approach.

For the Berwick analysis, base rates for improvements were developed from Marshall & Swift Cost tables (August 2018), Section 12, pages 1-7 and 25-38, and adjusted to market sales data using sales from 4/1/2017 to 3/31/2019.

Collecting, Validating and Reporting Data:

For the purposes of the contracted revaluation, all improved properties in Berwick had an external review to verify the accuracy of the real estate data. It is necessary to observe the style, quality, condition and sub area of each component of the building, or buildings, on the property. The following elements have been rated as to quality, workmanship and special physical characteristics:

Style Type (Ranch, Colonial, etc.)	Model (Residential, Commerical, etc.)	Grade (Quality)	Stories	Occupancy
Exterior Wall	Roof Structure	Roof Cover	Interior Wall	Interior Floor
Heating Fuel & Type	Air Conditioning Type	Bedrooms	Bathrooms	Year Built
Condition of Property	Functional Obsolescence	Economic Obsolescence	Outbuildings	Extra Features

Determining Building Style:

Below is an explanation of typical styles of single-family residential houses.

Ranch: This style was built generally after 1940's, although some houses were built earlier and could fall within this category. A ranch is a one-story house, which is usually rambling and low to the ground with a low-pitched roof.

Split Level: Generally built after 1940's. The living area is on two or more levels with each level having a single-story height, generally seen on uneven terrain lots. It can be a front/rear or side/rear split or a combination of the two.

Colonial: Traditional design built from 1700's to present. Generally, 2 or 2 ½ stories with balanced openings along the main façade. Second floor overhangs are common. Newer colonials attempt to imitate this classic New England design.

Cape Cod: Built "close to the ground" with simple lines. A high roof ridge often supplemented with full or partial dormers may provide a second level of living area, but not a full upper story. Generally, have a gable roof.

Bungalow: Most bungalows were built in the early 1900's. A small, one-story design often seen with an expansion attic area and/or dormer. Usually with an open or enclosed front porch. Narrow across the front and deep from front to back.

Conventional: An older type of house with no specific architectural design. Story heights generally range from 1.5 to 2.5 stories.

Modern or Contemporary: Constructed since 1940's WWII. One-story, two-stories or split-level. Characterized by large windows, open planning, horizontal lines and simple details.

Raised Ranch: This style combines the ranch and tri-level designs. The basement area sets on or slightly below the ground level and is usually partially, or entirely, finished. Basement garages are common.

FGR/Apt: This style consists of a detached garage with a living unit above that has a full kitchen and full bath.

Camp: This is a small home with minimal improvements and utility. Usually built for seasonal use and, at some point, may have been converted to year-round use.

Please see Appendix F for a full list of Building Styles used in Berwick.

Establishing a Quality Adjustment Rating:

A pure replacement cost system of valuation relies only on quality of materials, design and workmanship in quality grade determinants. Unfortunately, a pure cost system does not address what might be a major value ingredient on improvement values- neighborhood and location. Materials, design and workmanship should be the primary quality grade determinant, but the neighborhood's appeal, or lack thereof, may have a secondary impact. Any variations from the pure Cost Approach quality rating should be made only with supportable conclusive market evidence, using neighborhood sales to justify these adjustments. Once the quality grade determinants are determined, the final quality grades should be similar, on similar homes, within similar neighborhoods. Equitability and consistency are paramount.

Within the CAMA System, there are quality adjustments available to cover a wide range of possible construction qualities. The quality grades applied to the properties are multipliers, or factors, applied to the basic construction rate, which is derived from the structural components.

What follows are the guidelines in establishing quality grades based purely on a Cost Approach system, unadjusted for market neighborhood conditions.

Quality Grading Guidelines:

The general quality specifications for each grade are as follows:

Minimum Grade (01): Buildings constructed with very cheap grades of materials.

No extras, only bare minimum.

Below Average Grade (02): Buildings constructed with a minimum grade material, usually "culls" and "seconds" and poor-quality workmanship resulting from unskilled, inexperienced, "do-it-yourself" type labor. Contain low-grade heating, plumbing and lighting fixtures.

Average Grades (03, 04, 05): Buildings constructed with average quality materials and workmanship throughout, conforming to the base specifications used to develop

the pricing schedule. Minimal architectural treatment. Average quality interior finish and built-in features. Standard grade heating, plumbing and lighting fixtures.

Good Grades (06, 07, 08): Buildings constructed with good quality materials and workmanship throughout. Moderate architectural treatment. Good quality interior finish and built-in features. Good grade heating, plumbing and lighting fixtures.

Excellent Grades (09, 10): Buildings generally having excellent architectural style and design, constructed with excellent quality materials and workmanship throughout. Excellent quality interior finish and built-in features. Excellent grade heating, plumbing and lighting fixtures.

Applying Depreciation:

Once the cost of the building is developed, the building needs to be depreciated. Depreciation is the loss in value from any cause, and is typically associated with reasons that are physical, functional, and/or economic as defined below:

Physical: Loss in value due to physical deterioration and/or ageing.

Functional: Loss in value due to deficiencies in the structure's design.

Economic: Loss in value due to factors external to the appraised property.

In the appraisal of a single property (not Mass Appraisal), the three primary methods for estimating depreciation are:

- the market extraction method
- the age-life method, and,
- the breakdown method.

Typically, the market extraction and age-life calculation techniques are utilized to capture the total depreciation in a property from all sources.

In mass appraisal, the identification of depreciation relies upon the application of computer modeling, CAMA, techniques. Importantly, regardless of the methodology utilized to identify depreciation, it is imperative that the final estimate of depreciation reflects the loss in value from all sources.

The remaining value is considered the Replacement Cost Less Depreciation (RCLD). The market indicated land value and any other outbuilding values are added to give you a final value. This

value is compared to market sale prices of similar properties to ensure that the property is appraised at market value for April 1, 2019.

For the analysis, qualified sales between 4/1/2017 and 3/31/2019 were utilized and analyzed based on style, year built, location, sales price, lot size and building size. Refer to the Appendix D for the Sales Study Reports.

Considering Effective Area Factors:

The term effective area is used in the CAMA system as a conceptual valuation tool. Additionally, effective area is used to compare properties and determine if they are assessed in same the manner, resulting in equity.

As a valuation tool, effective area helps assessors account for the contributory value of different parts of a building. Each subarea of a building has its own effective area based on the contribution of value to the entire property.

It makes sense that a porch, basement or garage would not have the same contributory value as the living area of the building. To properly account for the value, the effective areas of these spaces are added to the living area to equal the total effective area.

Building 1	Building 2
Colonial Style	Colonial Style
1,252 Square Feet of Living Area	1,252 Square Feet of Living Area
Actual Year Built is 2004	Actual Year Built is 2004
Exterior Siding is Vinyl	Exterior Siding is Vinyl
Attached Garage 180 SF, 54 SF effective area	No Garage
Screen Porch 168 SF, 30 SF effective area	No Porch

The homes illustrated above have a similar style and identical living area, but they would probably not sell for the exact same price. For the purposes of assessment valuation, applying the same price per square foot to the total living area of both homes would not compensate for the additional features of the first home. Applying the price per square foot to the total effective square footage of the home results in a higher value for the enhancements of the first home.

For the Effective Area calculations, please see the Sub Area Codes Report Appendix F.

Building Valuation Model:

The building valuation model is defined as follows:

Base Rate +/- Number of Baths, etc. +/- Size Adjustment +/- Grade of Construction = Adjusted Base Rate.

Adjusted Base Rate x Effective Area – Depreciation Adjustment = Building Value.

Please note: The story height, listed under construction detail on the property record card, is only descriptive and is not used to calculate building cost. However, story height is calculated using an effective area, which is generated by the subarea codes as designated on the sketch.

Please see the following example property record card in Appendix F.

Building Valuation Example: Vision ID 123 Ranch Style Home

Use Code= 1010 (Single Family)	Cost Rate Group = SIN	Model ID= P01
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Base Rate: 85 (starting base rate, based on style)

Base Rate Adjustments: 1.7 (for amenities described below)

Size Adjustment: 1.01638 (adjustment for building size)

Adjusted Base Rate = (85 + 1.7) * 1.01638= 88.12

The Adjusted Base Rate does not include quality of construction grade adjustments.

Adjusted Base Rate: 88.12

Effective Area: 1875

Flat Value Additions: 10,000 (described below)

Grade Adjustment 03 (Average): 1

Replacement Cost New (RCN)= (((88.12* 1875) +10,000) * 1) + 0

RCN= \$175,225 (cost new)

Replacement Cost New Less Depreciation (RCNLD) = 175,225 X .86 (Percent Good) =

\$150,700 Rounded

Base Rate Adjustments (For Amenities as referenced above)

Exterior Wall 1 25 = .85 +Base Rate

Interior Wal 1 05 = 1.7 + Base Rate

Roof Structure 03 = -0.85 + Base Rate

Total: 1.7

Flat Value Additions (As referenced above)

Full Bathroom= \$10,000 + RCN

Factor Adjustments

GRADE ADJUSTMENT 03 (Average) = 1 x RCN

Adjustment for quality of construction grade.

Depreciation= Percent Good = 86

Commercial Valuation Process

The purpose of the mass appraisal is to determine an opinion of the market value of all properties, including commercial properties, in the Municipality for 4/1/2019. In the appraisal of commercial real estate, there are three recognized approaches to value. These are: Cost Approach, Sales Comparison Approach and Income Approach.

Cost Approach Methodology: The cost approach is based on the theory that an informed buyer would not pay more for a property than the cost to build a reasonable substitute. The cost approach is therefore based on a comparison of the subject property to the cost to produce a new subject property or a substitute property. Items considered in this estimate are the age, condition and utility of the property.

In applying the cost approach, the appraiser will first value the land of the subject based on comparable land sales, sales land residuals or income land residuals. Second, the appraiser will estimate the cost to construct the existing structure, along with any site improvements, and then deduct any accrued depreciation from the cost. The land value is added to the cost value to derive an indication of market value by the cost approach.

Cost Approach Modeling: The final assessed values utilized by the Municipality will be broken out by land and building values. The cost approach is the only approach that identifies both components individually. The other two approaches will also be considered and depending on the type of property will be given the most weight in the reconciliation stage.

The Vision Government Solutions CAMA cost tables were utilized, supported by national cost valuation services, Marshall and Swift, to develop a replacement cost for a building. Once the cost of the building was developed, depreciation from normal wear and tear and from functional and economic obsolescence was deducted. The remaining value is considered the Replacement Cost Less Depreciation (RCLD). The market indicated land value and any other outbuilding values are added to give you a final value.

Sales Approach Methodology: The sales comparison approach is the process of comparing the subject property to other comparable properties, which have sold within a reasonable period, adjusting the sale prices of those comparable properties to compensate for differences, and weighing the value indications developed to arrive at an opinion of market value for the subject property.

The sales comparison approach reflects the actions and reactions of typical buyers and sellers in the marketplace. A comparative analysis process is completed to determine and define similarities and differences of properties and transactions that can affect value. These elements may include property rights appraised, financing terms, market conditions, size, location and physical features.

Sales Approach Modeling: This cost value is compared to market sale prices of similar properties to ensure that the property is appraised at market value for April 1, 2019. There were a limited number of qualified commercial sales in Berwick. This data was considered, but based on the small sample size, this approach was not given as much weight as the other approaches.

Income Approach Methodology: This approach is based on set of procedures that derives a value by analyzing and determining an income flow from the market, and then capitalizing this stream of income into a value. Income producing property is typically purchased as an investment. Therefore, the premise is the higher the earnings the higher the value. An investor who purchases income producing real estate is trading present day dollars for the expectation of receiving future dollars.

Income Approach Modeling

Market Rent Analysis: The first step in analyzing properties income potential is to establish market rent for land and improvements. To establish a basis for market rent, rentals of comparable properties in the city for all property types have been considered. Market rent is the rental income that a property would most probably command in an open market; indicated by current rents paid and asked for comparable space as of the date of the appraisal. Market rent may differ from contract rent, which is rent paid as a result of a specific agreement. Market rent is applicable when the property rights appraised are fee simple. To estimate the property's market rent, rental data from comparable properties are required to be gathered and analyzed.

Income and expense statements were mailed out to all commercial property owners throughout the town. This data was examined, qualified and analyzed to develop market rent schedules and vacancy/expense ratios for each property type (i.e. retail, office, industrial, etc.). National real estate publications were also reviewed to further support the market rents that were established. The rates determined are for properties of average quality and location. Further adjustments are applied for utility, location, building condition and specific vacancy conditions. Income location adjustment factors were mapped consistently with site index adjustment factors to reconcile

between the approaches. Individual quality adjustments were also applied to each property to account for higher or lower utility of the property.

Once all these factors have been considered, a final net operating income (NOI) is established for each property based on current market conditions for the fee simple interest.

Direct Capitalization Method: Capitalization is the process of converting a net income stream into an indication of value. The selection of a capitalization rate (Ro) can be developed by several methods. Direct Capitalization is a method used to convert an estimate of a single year's income expectancy into an indication of value in one direct step, either by dividing the income estimate by an appropriate rate or by multiplying the income estimate by an appropriate factor. Extraction of a capitalization rate (Ro) from market surveys and by the band of investment technique are the most commonly accepted methods. They will be utilized to determine a direct capitalization rate for each commercial property type. Another method to develop a capitalization rate is through extracting it from comparable sales. This process was also considered when good market data was available.

Market Survey of Capitalization Rates: Is an analysis of market surveys that were completed to determine capitalization rates for the various commercial property types in the Municipality as of 4/1/2019.

Band of Investment Technique: This is a technique in which the capitalization rates attributable components of a capital investment are weighted and combined to derive a weighted average rate that is attributable to the total investment. The two components are the mortgage position and the equity position. The variables considered are the mortgage interest rate, amortization period, holding period, loan to value ratio and the equity yield rate.

Once the capitalization rate is developed the NOI is divided by this rate to determine a value by the income approach.

Reconciliation Methodology: The final step of the appraisal process is the reconciliation. The appraiser considers the strengths and weaknesses of each applicable approach and reconciles the values indicated by these approaches to determine a final value opinion. In this determination, the appraiser weighs the relative importance, applicability, and defensibility of each of the three approaches and relies strongly on the approach that is most appropriate to the nature of the appraisal.

Final Reconciliation: Reconciliation spreadsheets by property type were developed and analyzed. When possible, all approaches to value were reconciled within a range of 0.90 to 1.10 and the cost model was used as the final value estimate. When not possible, the most relevant approach to value for a given parcel was selected. The income approach model was deleted during the reconciliation process when not appropriate to the valuation of a given parcel or property type.

Land Valuation Models: The Commercial/Industrial land sales, sales residuals and income residuals were analyzed by street to derive typical land value ranges. Site Index adjustment factors were derived to modify the basic land curve to the market characteristics of each neighborhood.

SECTION G

Appendices

Appendix A: Copy of Contract Specific to this Report

Appendix B: Individuals Responsible/Assisting in Completion of Report

Project managers:

Paul McKenney, Certified Maine Assessor, CMA &
Certified New Hampshire Property Assessor Supervisor, CNHA

Analysis and Data Listers:

Paul McKenney, CMA, CNHA

Karen Fortier, Certified Maine Assessor

Mike O'Leary, Certified Maine Assessor (Retired)

Edward Tinker, Certified New Hampshire Property Assessor Supervisor, CNHA

Appendix C: Qualifications

Appendix D: Residential Valuation Reports

- Qualified Land Sales
- All Land Sales
- Sales Studies:
 - Land Use
 - Lot Size
 - Site Index
 - Neighborhood
 - Style
 - Actual Year Built
 - Building Size
 - Residential Grade
 - Sale Price Quartile
 - Sale Date
 - Condominium
- Total Value Report by Property Class
- Price Related Differential
- Sales Validity Codes
- Visit History Codes
- All Sales Report
- Qualified Sales Report

Appendix E: Land Tables

- Land Use Codes
- Land Use Codes Cost Settings (by Land Class)
- Land Curve Parameters
- Land Curve Report
- Land Residuals
- Land Neighborhood Descriptions and Adjustments
- Site Index Table
- Example Property Record Card

Appendix F: Building Tables

- Cost Rate Codes (Building Styles)
- Sub Area Codes
- Allowable Construction Entries
- Cost Model Report
- Outbuilding Codes
- Extra Feature Codes
- Depreciation Tables
- Condominium Codes
- Example Property Record Card

Appendix G: Commercial Valuation Reports

- Commercial/Industrial Sales
- Market Rent Schedule and Adjustment Factors
- Capitalization Rates
- Economic Valuation Spreadsheet
- Cost/Income Correlation Report
- Actual Vacancy Report
- Income/Cost Comparison Report

Appendix H: Definitions

Abatement: (1) An official reduction or elimination of one's assessed valuation after completion of the original assessment. (2) An official reduction or elimination of one's tax liability after completion of the tax roll.

Abstraction Method: Method of land valuation in the absence of vacant land sales, whereby improvement values obtained from the cost model are subtracted from sales prices of improved parcels to yield residual land value estimates. Also called residual land technique.

Ad Valorem Tax: A tax levied in proportion to the value of the thing(s) being taxed. Exclusive of exemptions, use-value assessment provisions, and the like, the property tax is an ad valorem tax.

Adjustments: Modifications in the reported value of a variable, such as sale price. For example, adjustments can be used to estimate market value in the sales comparison approach by modifications for differences between comparable and subject properties. Note: Adjustments are applied to the characteristics of the comparable properties in a particular sequence that depends on the method of adjustment selected.

Age/Life method (depreciation): A method of estimating accrued depreciation founded on the premise that, in the aggregate, a neat mathematical function can be used to infer accrued depreciation from the age of a property and its economic life. Another term is "straight-line depreciation" (see depreciation, accrued; and depreciation method, straight-line).

Allocation by Abstraction: A method of separating a whole property value into land and improvement components. The appraiser estimates replacement cost new, subtracts an appropriate amount for depreciation, and subtracts the remainder from the whole property value to estimate the land value.

Allocation Method: A method used to value land, in the absence of vacant land sales, by using a typical ratio of land to improvement value. Also called land ratio method.

Amenity: A feature of an improvement that enhances its suitability for its basic use. A fireplace in a single-family residence is an amenity, as is covered parking at an apartment complex. Amenities always increase value.

Anticipated Use Method: A method used to appraise underdeveloped land. Expected improvements to the land are specified, and total development costs are estimated and subtracted from the projected selling price to give an estimate of the value of the undeveloped land.

Appeal: A process in which a property owner contests an assessment either informally or formally.

Appraisal Card, Building: A card used by an assessor or appraiser on which is carried a sketch or photograph of a building, a description of its location, a list of the principal factors affecting its reproduction cost and depreciation, and the calculations by which such cost and depreciation are estimated. Note: The building appraisal card is frequently combined with the land appraisal card into a single document. In such event, the combination card may be used for a composite appraisal as well as for a summation appraisal. **Also called a “property record card”.**

Appraisal Card, Land: A card used by an assessor or appraiser on which is carried a sketch or an adequate description of a parcel of land, a description of its location, a list of the principal factors affecting its market value, and the calculations by which the market value is estimated.

Appraisal Date: The date as of which a property's value is estimated.

Appraisal Foundation: The organization authorized by the United States Congress as the source of appraisal standards and appraiser qualifications. The Appraisal Foundation publishes the Uniform Standards of Professional Appraisal Practice (USPAP).

Appraisal Methods: The three methods of appraisal, that is, the cost approach, income approach, and sales comparison approach.

Appraisal Report: The oral or written communication of a completed appraisal.

Appraisal-Sale Price Ratio: The ratio of the appraised value to the sale price (or adjusted sale price) of a property; a simple indication of appraisal accuracy.

Appraisal Standards Board: The division of The Appraisal Foundation that develops, publishes, interprets, and amends the Uniform Standards of Professional Appraisal Practice on behalf of appraisers and users of appraisal services.

Appraiser: One who estimates the value of property; more commonly, one of a group of professionally skilled persons holding themselves out as experts in valuation

Appreciation: Increase in value of a property, in terms of money, from causes other than additions and betterments. For example, a farm may appreciate if a shopping center is built nearby, and property of any sort may appreciate as a result of inflation.

Appurtenance: In appraisal, an appurtenance is any addition to a property that becomes a part of that property. Generally, an appurtenance differs from a fixture in that the fixture was once personal property.

Arm's-Length Sale: A sale in the open market between two unrelated parties, each of who is reasonably knowledgeable of market conditions and under no undue pressure to buy or sell.

Assemblage: The assembling of adjacent parcels of land into a single unit. Compare "plottage".

Assess: To value property officially for the purpose of taxation.

Assessed Value: (1) A value set on real estate and personal property by a government as a basis for levying taxes. (2) The monetary amount for a property as officially entered on the assessment roll for purposes of computing the tax levy. Assessed values differ from the assessor's estimate

of actual (market) value for three major reasons: fractional assessment ratios, partial exemptions, and decisions by assessing officials to override market value.

Assessment: (1) In general, the official act of determining the amount of the tax base. (2) As applied to property taxes, the official act of discovering, listing, and appraising property, whether performed by an assessor, a board of review, or a court. (3) The value placed on property in the course of such act.

Assessment Equity: The degree to which assessments bear a consistent relationship to market value.

Assessment Progressivity or Regressivity: An appraisal bias such that high-value properties are appraised higher (or lower) than low-value properties in relation to market values. See “price-related differential” (PRD).

Assessor: (1) The head of an assessment agency; sometimes used collectively to refer to all administrators of the assessment function. (2) The public officer or member of a public body whose duty it is to make the original assessment.

Assessment Year: A year beginning on the day after the assessment date and ending on the assessment date in the calendar year next following. (2) The 365 days beginning with the appraisal date.

Automated Valuation Model (AVM): An automated valuation model (AVM) is a mathematically based computer software program that produces an estimate of market value based on market analysis of location, market conditions, and real estate characteristics from information that was previously and separately collected. The distinguishing feature of an AVM is that it is a market appraisal produced through mathematical modeling. Credibility of an AVM is dependent on the data used and the skills of the modeler producing the AVM.

Bias: A statistic is said to be biased if the expected value of that statistic is not equal to the population parameter being estimated. A process is said to be biased if it produces results that

vary systematically with some factor that should be irrelevant. In assessment administration, assessment progressivity or regressivity is one kind of possible bias.

Board of Assessment Review: Empowered by 36 MRS § 843, the Board of Assessment Review has responsibility for: 1) hearing appeals of individual tax assessments, not including nonresidential property greater than \$1,000,000; 2) hearing appeals for tax assessments on the basis of hardship or poverty

Capitalization Rate: Any rate used to convert an estimate of future income to an estimate of market value; the ratio of net operating income to market value.

Coefficient of Dispersion (COD): The average deviation of a group of numbers from the median expressed as a percentage of the median. In ratio studies, the average percentage deviation from the median ratio.

Computer Assisted Mass Appraisal (CAMA): A system of appraising property, usually only certain types of real property, that incorporates computer-supported statistical analyses such as multiple regression analysis and adaptive estimation procedure to assist the appraiser in estimating value.

Confidence Interval: For a given confidence level, the range within which one can conclude that a measure of the population (such as the median or mean appraisal ratio) lies.

Contributory Value: The amount a component of a property contributes to the total market value. For improvements, contributory value must be distinguished from cost.

Cost Approach: (1) One of the three approaches to value, the cost approach is based on the principle of substitution—that a rational, informed purchaser would pay no more for a property than the cost of building an acceptable substitute with like utility. The cost approach seeks to determine the replacement cost new of an improvement less depreciation plus land value. (2) The method of estimating the value of property by: (a) estimating the cost of construction based on replacement or reproduction cost new or trended historic cost (often adjusted by a local

multiplier); (b) subtracting depreciation; and, (c) adding the estimated land value. The land value is most frequently determined by the sales comparison approach.

Deferred Maintenance: Repairs and similar improvements that normally would have been made to a property but were not made to the property in question, thus increasing the amount of its depreciation.

Depreciation: Loss in value of an object, relative to its replacement cost new, reproduction cost new, or original cost, whatever the cause of the loss in value. Depreciation is sometimes subdivided into three types: physical deterioration (wear and tear), functional obsolescence (suboptimal design in light of current technologies or tastes), and economic obsolescence (poor location or radically diminished demand for the product).

Effective Tax Rate: (1) The tax rate expressed as a percentage of market value; will be different from the nominal tax rate when the assessment ratio is not equal to 1. (2) The relationship between dollars of tax and dollars of market value of a property. The rate may be calculated either by dividing tax by value or by multiplying a property's assessment level by its nominal tax rate.

Escheat: The right to have property revert to the state for nonpayment of taxes or when there are no legal heirs of someone who dies without leaving a will.

Encumbrance: Any limitation that affects property rights and value.

Equalization: The process by which an appropriate governmental body attempts to ensure that all property under its jurisdiction is assessed at the same assessment ratio or at the ratio or ratios required by law. Equalization may be undertaken at many different levels. Equalization among use classes (such as agricultural and industrial property) may be undertaken at the local level, as may equalization among properties in a school district and a transportation district; equalization among counties is usually undertaken by the state to ensure that its aid payments are distributed fairly.

Equalized Values: Assessed values after they have all been multiplied by common factors during equalization.

Estate: a right or interest in property.

Expense: A cost, or that portion of a cost, which, under accepted accounting procedures, is chargeable against income of the current year.

External (Economic) Obsolescence: The loss of appraisal value (relative to the cost of replacing a property with property of equal utility) resulting from causes outside the property that suffers the loss. Usually locational in nature in the depreciation of real estate, it is more commonly market wide in personal property, and is generally considered to be economically infeasible to cure.

Factor: (1) An underlying characteristic of something (such as a house) that may contribute to the value of a variable (such as its sale price), but is observable only indirectly. For example, construction quality is a factor defined by workmanship, spacing of joists, and materials used. Factor definition and measurement may be done subjectively or by a computer-assisted statistical algorithm known as factor analysis. (2) Loosely, any characteristic used in adjusting the sales prices of comparables. (3) The reciprocal of a rate. Assessments may be equalized by multiplying them by a factor equal to the reciprocal of the assessment ratio, and value can be estimated using the income approach by multiplying income by a factor equal to the reciprocal of the discount rate.

Fee Simple Estate: The property rights that refer to absolute ownership unencumbered by any other interest or estate (a right or interest in property), subject only to the limitations imposed by governmental powers such as eminent domain, taxation, police power, and escheat.

Field Review: The practice of reviewing the reasonableness of assessments by viewing the properties in question, sometimes by examining their interiors but more often by looking at their exteriors.

Fixture: (1) Attached improvements that can be real or personal property. If attached to the realty in such a manner that its removal would damage the real property or the fixture, the fixture is realty. If the fixture is removable without damage, it is generally considered personal property. (2) An item of equipment that, because of the way it is used, the way it is attached, or both, has become an integral part of a building or other improvement. A fixture, such as a bathtub, is classified as real property, but trade fixtures (fixtures used in the conduct of business) are classified as personal property.

Full-Market-Value Assessment Standard: Assessments for which a law or other standard requires that the assessment ratio equals 100%.

Functional Depreciation: Synonymous with the preferred term “obsolescence”.

Functional Obsolescence: Loss in value of a property resulting from changes in tastes, preferences, technical innovations, or market standards.

Highest and Best Use: A principle of appraisal and assessment requiring that each property be appraised as though it were being put to its most profitable use (highest possible present net worth), given probable legal, physical, and financial constraints. The principle entails first identifying the most appropriate market, and, second, the most profitable use within that market. The concept is most commonly discussed in connection with underutilized land.

Horizontal Inequity: Differences based on criteria other than value range in the levels of assessment of groups of properties. For example, properties in one neighborhood may have a higher level of assessment than similar properties in another neighborhood. See vertical inequity.

IAAO: International Association of Assessing Officers.

Improvements: Buildings, other structures, and attachments or annexations to land that are intended to remain so attached or annexed, such as sidewalks, trees, drives, tunnels, drains, and

sewers. Note: Sidewalks, curbing, sewers, and highways are sometimes referred to as "betterment," but the term "improvements" is preferred.

Income: The payments to its owner that a property is able to produce in a given time span, usually a year, and usually net of certain expenses of the property.

Income Approach: One of the three approaches to value, based on the concept that current value is the present worth of future benefits to be derived through income production by an asset over the remainder of its economic life. The income approach uses capitalization to convert the anticipated benefits of the ownership of property into an estimate of present value.

Intangible Personal Property: Property that has no physical existence beyond merely representational, nor any extrinsic value; includes rights over tangible real and personal property, but not rights of use and possession. Its value lies chiefly in what it represents. Examples include corporate stock, bonds, money on deposit, goodwill, restrictions on activities (for example, patents and trademarks), and franchises. Note: Thus, in taxation, the rights evidenced by outstanding corporation stocks and bonds constitute intangible property of the security holders because they are claims against the assets owned and income received by the corporation rather than by the stockholders and bondholders; interests in partnerships, deeds, and the like are not ordinarily considered intangible property for tax purposes because they are owned by the same persons who own the assets and receive the income to which they attach.

Land-to-Building Ratio (Land-to-Improvement Ratio): The proportion of land area to gross building (improvement) area. For a given use, the most frequently occurring ratio will be that of a functioning economic unit.

Lease: A written contract by which the lessor (owner) transfers the rights to occupy and use real or personal property to another (lessee) for a specified time in return for a specified payment (rent).

Leased Fee Estate: An ownership interest held by a lessor with the rights of use and occupancy conveyed by lease to another.

Leasehold Estate: Interests in real property under the terms of a lease or contract for a specified period of time, in return for rent or other compensation; the interests in a property that are associated with the lessee (the tenant) as opposed to the lessor (the property owner). May have value when market rent exceeds contract rent.

Lessee: The person receiving a possessory interest in property by lease, that is, the owner of a leasehold estate.

Lessor: The person granting a possessory interest in property by lease, that is, the conveyor of a leasehold estate, the holder of a leased fee estate.

Level of Assessment; Assessment Ratio: The common or overall ratio of assessed values to market values. Compare level of appraisal. Note: The two terms are sometimes distinguished, but there is no convention determining their meanings when they are. Three concepts are commonly of interest: what the assessment ratio is legally required to be, what the assessment ratio actually is, and what the assessment ratio seems to be, on the basis of a sample and the application of inferential statistics. When level of assessment is distinguished from assessment ratio, "level of assessment" usually means either the legal requirement or the true ratio, and "assessment ratio" usually means the true ratio or the sample statistic.

Life Estate: An interest in property that lasts only for a specified person's lifetime; thus the owner of a life estate is unable to leave the property to heirs

Listing: The process by which the assessor ensures that records for the taxable property identified during discovery are preserved with integrity, available for use in valuation activities, and ultimately reflected in the assessment roll.

Long-lived Items: Items that are the basic structure of a building and are not usually replaced during economic life. For example: foundation, roof structure, and framing

Market Approach: A valuation term with several meanings. In its broadest use, it might denote any valuation procedure intended to produce an estimate of market value, or any valuation procedure that incorporates market-derived data, such as the stock and debt technique, gross rent multiplier method, and allocation by ratio. In its narrowest use, it might denote the sales comparison approach.

Market-Value, known as Just Value: Just value is defined in 36 MRS § 701-A. An expanded definition of Just Value, which is market value, establishes the market value of a property must meet the following criteria:

- (a) Is the most probable price, not the highest, lowest or average price;
- (b) Is expressed in terms of money;
- (c) Implies a reasonable time for exposure to the market;
- (d) Implies that both buyer and seller are informed of the uses to which the property may be put;
- (e) Assumes an arm's length transaction in the open market;
- (f) Assumes a willing buyer and a willing seller, with no advantage being taken by either buyer or seller; and
- (g) Recognizes both the present use and the potential use of the property.

Mass Appraisal: The process of valuing a group of properties as of a given date, using standard methods, employing common data, and allowing for statistical testing.

Mass Appraisal Model: A mathematical expression of how supply and demand factors interact in a market.

Mean: A measure of central tendency. The result of adding all the values of a variable and dividing by the number of values. For example, the mean of 3, 5, and 10 is 18 divided by 3, or 6. Also called arithmetic mean.

Median: A measure of central tendency. The value of the middle item in an uneven number of items arranged or arrayed according to size; the arithmetic average of the two central items in an

even number of items similarly arranged; a positional average that is not affected by the size of extreme values.

Mill Rate: A tax rate expressed as mills per dollar. For example, a 2 percent tax rate is \$2 per \$100, \$20 per \$1,000, or 20 mills per dollar.

Model Calibration: The development of adjustments, or coefficients based on market analysis that identifies specific factors with an actual effect on market value.

Neighborhood: (1) The environment of a subject property that has a direct and immediate effect on value. (2) A geographic area (in which there are typically fewer than several thousand properties) defined for some useful purpose, such as to ensure for later multiple regression modeling that the properties are homogeneous and share important locational characteristics.

Net Income: (1) The income expected from a property, after deduction of allowable expenses. (2) Net annual income is the amount generated by a property after subtracting vacancy and collection loss, adding secondary income, and subtracting all expenses required to maintain the property for its intended use. The expenses include management fees, reserves for replacement, maintenance, property taxes, and insurance, but do not include debt service, reserves for building additions, or income tax.

Nominal Tax Rate: The stated tax rate, which does not necessarily correspond to the effective tax rate.

Obsolescence: A decrease in the value of a property occasioned solely by shifts in demand from properties of this type to other types of property and/or to personal services. Some of the principal causes of obsolescence are: (1) Changes in the esthetic arts; (2) changes in the industrial arts, such as new inventions and new processes; (3) legislative enactments; (4) change in consumer demand for products that results in inadequacy or over adequacy; (5) migration of markets that results in misplacement of the property. Contrast depreciation, physical; depreciation, economic.

Overall Rate (OAR): A capitalization rate that blends all requirements of discount, recapture, and effective tax rates for both land and improvements; used to convert annual net operating income into an indicated overall property value.

Partial Interest: An interest (in property) that is less complete than a fee simple interest. Also known as a "fractional" interest.

Percent Good: An estimate of the value of a property, expressed as a percentage of its replacement cost, after depreciation of all kinds has been deducted.

Personal Property: Consists of every kind of property that is not real property; movable without damage to itself or the real estate; subdivided into tangible and intangible. Also called "personality."

Physical Depreciation: Depreciation arising solely from a lowered physical condition of the property or a shortened life span as the result of ordinary use, abuse, and action of the elements.

Plottage Value: (1) The increment of value ascribed to a plot because of its suitability in size, shape, and/or location with reference to other plots (preferred). (2) The excess of the value of a large parcel of land formed by assemblage over the sum of the values of the unassembled parcels. Compare "assemblage".

Possessory Interest: (1) The right to occupy and use any benefit in a transferred property, granted under lease, licenses, permit, concession, or other contract. (2) A private taxable interest in public tax-exempt property, for example, a private service station in a federal military base. Assessment of this interest presents complex valuation problems. Among the issues are whether the ownership or the use is exempt, whether the parcel should be split, and whether market rent differs from contract rent.

Price Related Differential (PRD): The mean divided by the weighted mean. The statistic has a slight bias upward. Price-related differentials above 1.03 tend to indicate assessment regressivity; price-related differentials below 0.98 tend to indicate assessment progressivity.

Principle of Contribution: The principle of contribution requires an appraiser to measure the value of any improvement to a property by the amount it contributes to market value, not by its cost.

Principle of Substitution: The principle of substitution states that no buyer will pay more for a good than he or she would have to pay to acquire an acceptable substitute of equal utility in an equivalent amount of time.

Property Record Card: An assessment document with blanks for the insertion of data for property identification and description, for value estimation, and for property owner satisfaction. The basic objectives of property record forms are, first, to serve as a repository of most of the information deemed necessary for identifying and describing a property, valuing a property, and assuring property owners that the assessor is conversant with their properties, and, second, to document property appraisals. Use of properly designed property record forms permits an organized and uniform approach to amassing a property inventory

Ratio Study: A study of the relationship between appraised or assessed values and market values. Indicators of market values may be either sales (sales ratio study) or independent "expert" appraisals (appraisal ratio study). Of common interest in ratio studies are the level and uniformity of the appraisals or assessments. See also level of appraisal and level of assessment.

Real Property: Consists of the interests, benefits, and rights inherent in the ownership of land plus anything permanently attached to the land or legally defined as immovable; the bundle of rights with which ownership of real estate is endowed. To the extent that "real estate" commonly includes land and any permanent improvements, the two terms can be understood to have the same meaning. Also called "realty."

Reconciliation: The final step in the valuation process wherein consideration is given to the relative strengths and weaknesses of the three approaches to value, the nature of the property appraised, and the quantity and quality of available data in formation of an overall opinion of value (either a single point estimate or a range of value). Also termed "correlation" in some texts.

Replacement Cost New Less Depreciation (RCNLD): In the cost approach, replacement cost new less physical incurable depreciation.

Residual Value of Improvements: A value ascribed to improvements on a parcel of land by deducting from the total value of land and improvements (as determined by composite appraisal) the value of the land alone (as determined by comparison with other parcels). Contrast residual value of land. Note: A residual value of improvements is usually estimated only when the land is obviously not improved to its highest and best use.

Residual Value of Land: A value ascribed to land alone by deducting from the total value of land and improvements (as determined by composite appraisal) the value of the improvements (as determined by the depreciated reproduction cost method). Contrast residual value of improvements.

Reversion: The right of possession commencing on the termination of a particular estate.

Right-of-Way: (1) An easement consisting of a right of passage through the servient estate (preferred). (2) By extension, the strip of land traversed by a railroad or public utility, whether owned by the railroad or utility company or used under easement agreement.

Sales Comparison Approach: One of three approaches to value, the sales comparison approach estimates a property's value (or some other characteristic, such as its depreciation) by reference to comparable sales.

Short-lived Items: Items of a structure that have a shorter life than the basic structure. For example, roofing, water heaters, floor covering, and interior finish.

Site Amenities: The specific location-related positive attributes of a property: topography, utilities, street traffic, view, and so on.

Standard Deviation: The statistic calculated from a set of numbers by subtracting the mean from each value and squaring the remainders, adding together all the squares, dividing by the size of the sample less one, and taking the square root of the result. When the data are normally distributed, one can calculate the percentage of observations within any number of standard deviations of the mean from normal probability tables. When the data are not normally distributed, the standard deviation is less meaningful, and one should proceed cautiously.

Standard Error: A measure of the precision of a measure of central tendency; the smaller the standard error, the more reliable the measure of central tendency. Standard errors are used in calculating a confidence interval about the arithmetic mean and the weighted mean.

Statistics: (1) Numerical descriptions calculated from a sample, for example, the median, mean, or coefficient of dispersion. Statistics are used to estimate corresponding measures, termed parameters, for the population. (2) The science of studying numerical data systematically and of presenting the results usefully. Two main branches exist: descriptive statistics and inferential statistics.

Stratification: The division of a sample of observations into two or more subsets according to some criterion or set of criteria. Such a division may be made to analyze disparate property types, locations, or characteristics, for example.

Subdivision: A tract of land that has been divided into marketable building lots and such public and private ways as are required for access to those lots, and that is covered by a recorded plat.

Tax-Exempt Property: Property entirely excluded from taxation because of its type or use. The most common examples are religious, charitable, educational, or governmental properties. This definition omits property for which the application of a partial exemption reduces net taxable value to zero.

Tax Map: A map drawn to scale and delineated for lot lines or property lines or both, with dimensions or areas and identifying numbers, letters, or names for all delineated lots or parcels.

Tax, Progressive: (1) A tax in which the effective rate is higher for a taxpayer subject to taxation on a large tax base than for a taxpayer subject to taxation on a small tax base. (2) Loosely used to refer to any tax that absorbs a larger proportion of the wealth or income of the well-to-do classes than of the poorer classes. Contrast tax, proportional; tax, special property; tax, graduated.

Tax, Proportional: A tax in which the effective tax rate is the same for all taxpayers regardless of the sizes of the tax bases on which they are subject to taxation. Contrast tax, progressive; tax, regressive

Tax Rate: (1) The amount of tax stated in terms of a unit of the tax base, for example, 30 mills per dollar, 2 percent, 2 cents per gallon. (2) For the property tax, the percentage of assessed value at which each property is taxed in a given district. Distinguish between effective tax rate and nominal tax rate.

Tax, Regressive: (1) A tax in which the effective rate is higher for a taxpayer subject to taxation on a small tax base than for a taxpayer subject to taxation on a large tax base. (2) Loosely used to refer to any tax that absorbs a smaller proportion of the wealth or income of the well-to-do classes than of the poorer classes. Note: A tax is said to be regressive in administration, though not legally regressive, when the ratio of the actual base to the statutory base declines as the statutory base increases, in such manner as to nullify a proportional statutory rate or to make a progressive statutory rate actually regressive. The same usage is conversely applicable to the terms "progressive tax" and "proportional tax," but is less commonly associated with them. Contrast tax, progressive; tax, proportional.

Tenement: (1) Real property and the rights to ownership, especially those of a permanent nature that relate to and pass with the land

Time-Adjusted Sale Price: The price at which a property sold, adjusted for the effects of price changes reflected in the market between the date of sale and the date of analysis.

Time Value of Money: The principle that an amount of money anticipated as income in the future is always worth less than an equal amount in hand at the present time.

Total Economic Life: The period of time or units of production over which the operation of an asset is economically feasible, not necessarily the same as its physical life.

Trade Fixture: Property attached to a rented space or building by a tenant, used in conducting a business and owned by the tenant. Also called "chattel fixture."

Trending: Adjusting the values of a variable for the effects of time. Usually used to refer to adjustments of assessments intended to reflect the effects of inflation and deflation and sometimes also, but not necessarily, the effects of changes in the demand for microlocational goods and services.

Uniform Standards of Professional Appraisal Practice: Annual publication of the Appraisal Standards Board of The Appraisal Foundation: "These Standards deal with the procedures to be followed in performing an appraisal, review or consulting service and the manner in which an appraisal, review or consulting service is communicated. . . .STANDARD 6 sets forth criteria for the development and reporting of mass appraisals for ad valorem tax purposes or any other universe of properties"

Uniformity: The equality of the burden of taxation in the method of assessment.

Unweighted Mean: A mean in which each value is considered only once. See weighted mean.

Use Code: A code (used on a property record form) to indicate a property's use class or, less often, potential use.

Use Class: (1) A grouping of properties based on their use rather than, for example, their acreage or construction. (2) One of the following classes of property: single-family residential, multifamily residential, agricultural, commercial, industrial, vacant land, and institutional/exempt. (3) Any

subclass refinement of the above—for example, townhouse, detached single-family, condominium, house on farm, and so on. See also property use category.

Vacancy and Collection Loss: The amount of money deducted from potential annual gross income to reflect the effect of probable vacancy and turnover, or nonpayment of rent by tenants. Vacancy and collection loss is commonly expressed as a percentage of potential annual gross income, and it should be based on market research, not actual rental history of a property.

Variance: A measure of dispersion equal to the standard deviation squared.

Vertical Inequity: Differences in the levels of assessment of properties related to the value ranges of the properties. That is, properties of higher value have assessment levels different from properties of lower value. See horizontal inequity.

Weighted Average Method: In personal property appraisal, a method of inventory cost accounting whereby inventory is valued according to the unit price of all units owned throughout the year, calculated by dividing total acquisition cost of all inventory by the number of units owned.

Weighted Coefficient of Dispersion: The coefficient of dispersion when the absolute differences between individual assessment ratios and the measure of central tendency (for example, median ratio) are weighted on the basis of sale price.

Weighted Coefficient of Variation: The coefficient of variation when the squared differences between individual assessment ratios and the arithmetic mean ratio are weighted on the basis of sale price.

Weighted Mean Ratio: Sum of the appraised values divided by the sum of the sales prices, which weights each value in proportion to its sale price.

Weighted Mean; Weighted Average: An average in which each value is adjusted by a factor reflecting its relative importance in the whole before the values are summed and divided by their number.

Yield Rate: (1) The return on investment applicable to a series of incomes that results in the present worth of each. Examples of yield rates are interest rate, discount rate, equity yield rate, and internal rate of return. (2) The required rate of return on equity capital; a component of the capitalization rate (or discount rate or mortgage-equity overall rate) that must be separately specified in band-of investment analysis and mortgage equity analysis.

Zoning: The exercise of the police power to restrict land owners as to the use of their land and/or the type, size, and location of structures to be erected thereon.

Appendix J: Zoning Ordinance

**The municipal zoning ordinances are on file at the municipal offices.*

Please visit:

https://www.berwickmaine.org/departments/community_development_planning/land_use_ordinance.php